Participant ID:	HaryanaJobs.in
Participant Name:	
Test Center Name:	
Test Date:	18/11/2018
Test Time:	4:00 PM - 6:00 PM
Subject:	TGT MATHS FEMALE

Section : **Mental Ability**

Q.1 Study the following information carefully to answer the question given below.
Following are the qualifications and conditions for certain posts in a "XYZ" company.

The candidate must:
a) be an engineering graduate with at least 70% marks.
b) be not less than 21 years and not more than 26 years of age as on 01/04/2018.
c) have passed the written test with at least 60% of marks.
d) be willing to pay a deposit of ₹ 2.5 lakh, to be refunded on completion of probation & training.

If the candidate satisfies (a)-(e) he/she would be referred as Engineer.
However, if the candidate satisfies all the above, except:
(i) at (a), has appeared for final semester exam; result yet to be declared; has 75% average marks up to seventh semester; would be referred as Project-Engineer.
(ii) at (a), has done diploma in engineering with 75% of marks, would be referred as Asst. Engineer.
(iii) at (d), is willing to pay ₹ 1.5 lakh as security deposit, would be referred as Engineer-Trainee.
(iv) at (b), even if age is above 26 years as on 1/4/18, but with 3 years of experience, would be referred as Senior-Engineer.

Pranita has completed her B.E. in electronics with 71% of marks. She also has cleared written test with 75% of marks. She is 22 years old as on May 2018. She is willing to pay security deposit of ₹ 1.5 lakh. For which position will she be referred?

Ans ✗ 1. Engineer

✔ 2. Engineer Trainee

✗ 3. Senior Engineer

✗ 4. Project Engineer

Question ID : **1626531835**

Q.2 The present ages of Ramu, Ranjeet, Naresh are in proportions 3 : 5 : 8. Five years ago, the sum of their ages was 65. Find their present ages (in years).
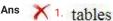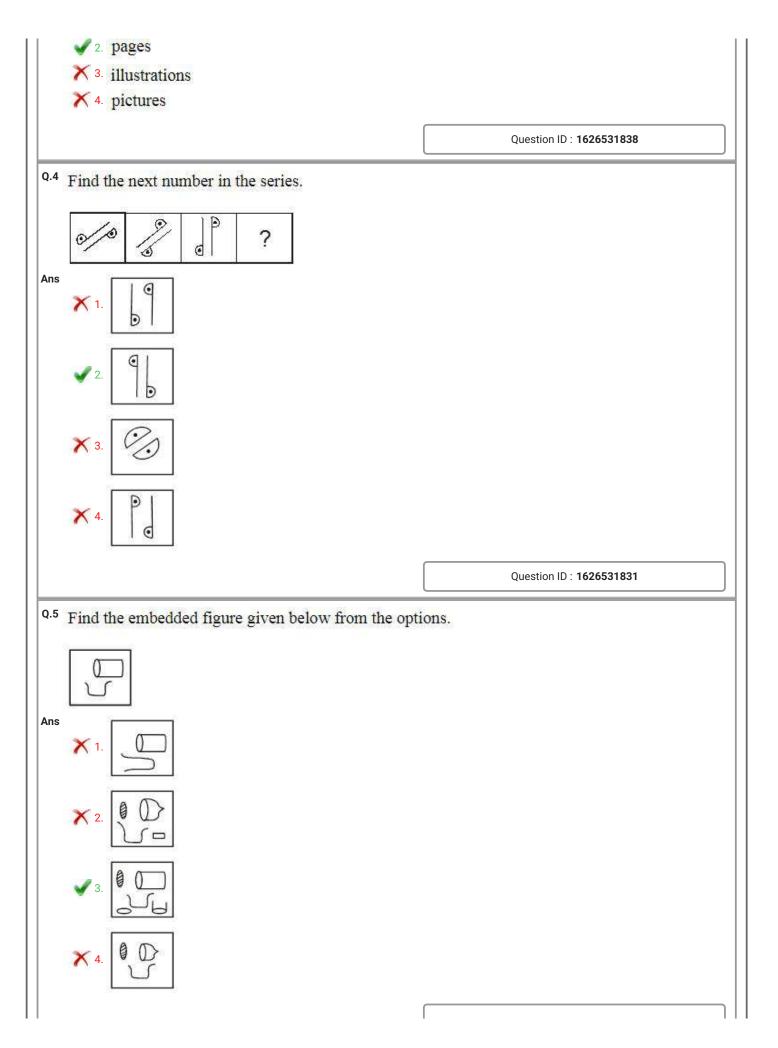
Ans ✗ 1. 45,23,16

✔ 2. 15, 25, 40

✗ 3. 10, 20, 35

✗ 4. 17,19,12

Question ID : **1626531843**

Q.3 Identify the best option that suits the statement.

A text book always has _____.

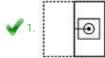Ans ✗ 1. tables

✔ 2. pages
✘ 3. illustrations
✘ 4. pictures

Q.4 Find the next number in the series.

Ans

✘ 1.

✔ 2.

✘ 3.

✘ 4.

Q.5 Find the embedded figure given below from the options.

Ans

✘ 1.

✘ 2.

✔ 3.

✘ 4.

Q.6 जब आप कॉलेज जा रहे हैं, आप देखते हैं कि कुछ सीनियर आपके सहपाठियों की रैगिंग कर रहे हैं। स्थिति से निपटने के लिए अपनाया जाए ऐसा सब से अच्छा तरीका कौन सा है?

Ans ✘ 1. वरिष्ठों को रैगिंग न करने की चेतावनी दें।

✘ 2. जाएँ और अपनी कक्षा में बैठ जाएँ।

✔ 3. इस मामले को कॉलेज प्रिंसिपल के ध्यान में लाएँ।

✘ 4.

अपने सहपाठियों को उन के रैगिंग किये जाने की चेतावनी दें।

Q.7 Find the odd pair of words.

Ans ✔ 1. Clothes : Word robe

✘ 2. Shoes : Leather

✘ 3. Omelets : Egg

✘ 4. Rubber : Latex

Q.8 What will be the missing term in the following series?

PY, RW, UT, YP, ?

Ans ✘ 1. AV

✘ 2. GC

✔ 3. DK

✘ 4. RO

Q.9 What will be the missing term in the following series?

37, 42, 40, ?, 43, 48

Ans ✔ 1. 45

✘ 2. 46

✘ 3. 50

✘ 4. 53

Q.10 Find the odd pair of numerals.

Ans ✘ 1. 81 − 9

✘ 2. 25 − 5

✔ 3. 115 – 15

✘ 4. 144 – 12
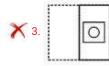
Q.11 How the pattern would appear when the transparent sheet is folded at the dotted line?

Ans

✔ 1.

✘ 2.

✘ 3.

✘ 4.

Q.12 बैट, क्रिकेट से उसी प्रकार से संबंधित है जैसे स्टिक का निम्नलिखित से है?

Ans ✘ 1. रग्बी

✘ 2. बैडमिंटन

✘ 3. फुटबॉल

✔ 4. हॉकी

Q.13 यदि × का मतलब +, < - के लिए, + मतलब ÷, > मतलब ×, - 'बराबर' के लिए है, ÷ का मतलब >' और '=' < के लिए है तो निम्न कथन, 7 > 10 + 2 = 9 < 3 × 4 में किस प्रकार बदलेगा?

Ans ✘ 1. 40 < 2

✘ 2. 39 < 5

✘ 3. 45 < 10

✔ 4. 35 < 10

Q.14

Select the option that is related to the third figure in the same way as the second figure is related to the first figure.

Ans

✗ 1.

✗ 2.

✔ 3.

✗ 4.

Q.1 5 The following bar chart shows information about NTSE pass out percentage for "XYZ" institute for past years. Read the chart carefully and answer the question.

How many students have passed NTSE from 'XYZ' during 2014 -16?

Ans

✔ 1. 160

✗ 2. 40

✗ 3. 20

✗ 4. 140

Q.1 6 Find the number which, when added to itself 9 times, gives 140.

Ans

✗ 1. 12

✗ 2. 20

✔ 3. 14

✗ 4. 16

Q.1 7

Choose the odd figure in the series.

CƆ	S2	Pq	LL
A	B	C	D

Ans ✗ 1. C

✗ 2. B

✔ 3. D

✗ 4. A

Q.18 Sunanda is sister of Krishna. How is krishna's father's sister's daughter related to Sunanda?

Ans ✗ 1. Sister

✗ 2. Mother

✔ 3. Cousin

✗ 4. Aunt

Q.19 Study the following carefully and answer the given question.

Which region denotes singers, who are directors but not actors?

Ans ✗ 1. 3

✗ 2. 4

✗ 3. 10

✔ 4. 7

Q.20 Find the next figure in the series.

Ans

✗ 1.

✔ 2. [box with arrows: up then left]

✘ 3. [box with arrows: down then left]

✘ 4. [box with arrows: up then right]

Question ID : **1626531832**

Q.1 Who was the founder of the Indian National Congress?

Ans ✔ 1. Allan Octavian Hume

✘ 2. Sardar Vallabh Bhai Patel

✘ 3. Jawaharlal Nehru

✘ 4. Annie Besant

Question ID : **1626531848**

Q.2 ग्रीष्मकालीन संक्रांति, वर्ष के दौरान वह पल जब आकाश में सूर्य का मार्ग उत्तरी गोलार्ध में सबसे दूर उत्तर होता है, किस तारीख पर गिरता है?

Ans ✘ 1. 20 या 21 अगस्त

✘ 2. 20 या 21 जुलाई

✔ 3. 20 या 21 जून

✘ 4. 2 या 3 जून

Question ID : **1626531851**

Q.3 How many members are nominated by the President from the Anglo-Indian community in Lok Sabha?

Ans ✘ 1. Five

✘ 2. One

✘ 3. Three

✔ 4. Two

Question ID : **1626531853**

Q.4 सिंधी में निम्नलिखित सभ्यताओं में से कौन सा 'मृतकों का ढेर' के रूप में जाना जाता था?

Ans ✘ 1. मिस्र सभ्यता

✘ 2. हड़प्पा सभ्यता

✗ 3. मेसोपोटामिया

✓ 4. मोहनजोदड़ो

Q.5 Nirmal paintings are associated with which of the following states?

Ans ✗ 1. Nagaland

✗ 2. Arunachal Pradesh

✗ 3. Meghalaya

✓ 4. Andhra Pradesh

Q.6 Who among the following has the power to discontinue a session in the two Houses and dissolve the Lok Sabha (in consultation with the Executive)?

Ans ✗ 1. The Speaker of Lok Sabha

✓ 2. The President

✗ 3. The Prime Minister

✗ 4. The Vice President

Q.7 In May 2018, which of the following firms partnered with the National Commission for Women (NCW) to launch a Digital Literacy Programme to train women on safe use of internet and social media?

Ans ✓ 1. Facebook

✗ 2. WhatsApp

✗ 3. Google

✗ 4. Twitter

Q.8 Who among the following won gold in the 74 kg Junior Asian Wrestling Championship 2018, held at New Delhi?

Ans ✗ 1. Somveer Singh

✓ 2. Sachin Rathi

✗ 3. Suraj Rajkumar Kokate

✗ 4. Mohit

Q.9 निम्नलिखित में से किसने कुतुब परिसर में स्थित प्रसिद्ध अलै-दरवाजा का निर्माण किया?

Ans ✗ 1. इल्तुतमिश

✓ 2. अलाउद्दीन खिलजी

✗ 3. कुतुब-उद-दीन ऐबक

✗ 4. फिरोज शाह तुगलक

Q.10 When was the World Biofuel Day celebrated recently?

Ans ✓ 1. 10 August 2018

✗ 2. 18 June 2018

✗ 3. 20 July 2018

✗ 4. 10 March 2018

Q.11 Which among the following is used to make non-stick cookware's?

Ans ✗ 1. Melamine

✓ 2. Teflon

✗ 3. Rayon

✗ 4. Bakelite

Q.12 Which law states that 'when the price of a product increases, the demand for the same product will fall'?

Ans ✗ 1. The law of competition

✓ 2. The law of demand

✗ 3. The law of increasing costs

✗ 4. The law of self-interest

Q.13 _____ is unique form of art found in Kerala. It is essentially a ritualistic art practiced in temples where the representation of deities like Kali and Lord Ayyappa, are made on the floor.

Ans ✗ 1. Chakyar koothu

✗ 2. Pulikali

✓ 3. Kalamezhuthu

✗ 4. Theyyam

Q.14 The Committee on the Welfare of Scheduled Castes and Scheduled Tribes consists of:

Ans ✗ 1.

10 members from the Lok Sabha and 20 members from the Rajya Sabha

✔ 2.
20 members from the Lok Sabha and 10 members from the Rajya Sabha

✘ 3.
20 members from the Lok Sabha and 20 members from the Rajya Sabha

✘ 4.
10 members from the Lok Sabha and 10 members from the Rajya Sabha

Question ID : **1626531855**

Q.15 Where is the headquarters of the Asian Development Bank (ADB) located?

Ans ✘ 1. Shanghai, China

✔ 2. Manila, Philippines

✘ 3. Beijing, China

✘ 4. Jakarta, Indonesia

Question ID : **1626531864**

Q.16 In the Archery World Cup held at Berlin, Indian women's compound team lost gold to the team from which of the following countries?

Ans ✘ 1. Germany

✔ 2. France

✘ 3. Italy

✘ 4. Turkey

Question ID : **1626531862**

Q.17 Which among the following is also known as Lotus temple?

Ans ✘ 1. Badrinath Temple

✔ 2. Bahai Temple

✘ 3. Vaishno Devi Mandir

✘ 4. Brihadeeswara Temple

Question ID : **1626531860**

Q.18 Who was elected as Zimbabwe's President after Robert Mugabe's removal in a coup in November2017?

Ans ✘ 1. Nelson Chamisa

✔ 2. Emmerson Mnangagwa Grace Mugabe

✘ 3. Morgan Tsvangirai

✘ 4. Kayaking Expedition

Question ID : **1626531865**

Q.19 Which among the following rivers is also called Tsangpo?

Ans ✗ 1. Chenab

✗ 2. Ganga

✗ 3. Jhelum

✔ 4. Brahmaputra

Question ID : **1626531852**

Q.20 Which company topped the ET 500 2017 ranking, in the annual edition of top 500 companies in India put together by Economic Times?

Ans ✗ 1. Reliance Industries Ltd.

✔ 2. Indian Oil Corporation Ltd.

✗ 3. State Bank of India

✗ 4. Tata Consultancy Services

Question ID : **1626531857**

Section : **Arithmetic Ability**

Q.1 A person spends 90% of his income. If his income is increased by 40%, he increases his expenditure by 30%. What is the percentage increase in his saving?

Ans ✗ 1. 65%

✗ 2. $\dfrac{2300}{13}$%

✔ 3. 130%

✗ 4. $\dfrac{1000}{13}$%

Question ID : **1626531875**

Q.2 A train of length 300 m takes 20 seconds to pass another train of length 200 m travelling in the opposite direction. If the speed of the first train is 30 km/h, then what is the speed of the second train in km/h?

Ans ✗ 1. 36

✗ 2. 72

✔ 3. 60

✗ 4. 54

Question ID : **1626531881**

Q.3 A boat can go 15 km upstream and 21 km downstream in 3 hours. It can go 25 km upstream and 14 km downstream in $3\frac{1}{2}$ hours. What is the speed of the boat in still water in km/h?

Ans ✗ 1. 10

✗ 2. 14

✔ 3. 12

✗ 4. 15

Q.4 Two numbers are in the ratio 4 : 3. If each number is increased by 6, the ratio becomes 5 : 4. The difference between the numbers is:

Ans

✗ 1. 1

✗ 2. 9

✔ 3. 6

✗ 4. 3

Q.5 The ratio of the selling prices of two articles is 2 : 3. The first article is sold at a profit of 20% and the second at a loss of 20%. What is the overall profit or loss percentage?

Ans

✗ 1. $\frac{100}{13}$ % profit

✗ 2. $\frac{100}{11}$ % loss

✗ 3. $\frac{100}{11}$ % profit

✔ 4. $\frac{100}{13}$ % loss

Q.6 यदि a : b = 3 : 4 है, तो (7a – 3b) किसके बराबर होगा?

Ans

✗ 1. 2 : 5

✗ 2. 37 : 19

✔ 3. 3 : 11

✗ 4. 3 : 4

Q.7 The height of a cylinder is increased by 10% and the radius of its base is decreased by 10%. What is the percentage increase or decrease in its curved surface area?

Ans

✗ 1. No change

✔ 2. 1% decrease

✗ 3. 2% decrease

✗ 4. 1% increase

Q.8 The efficiencies of A, B and C are in the ratio 2 : 3 : 4. They together can complete a piece of work in 18 days. In how many days can A alone complete the same piece of work?

Ans

✗ 1. 36

✗ 2. 54

✗ 3. 27

✔ 4. 81

Q.9 Three numbers are in the ratio 5 : 6 : 8 and their LCM is 7200. What is their HCF?

Ans ✔ 1. 60

✗ 2. 30

✗ 3. 120

✗ 4. 90

Q.1 0 A sum of money becomes 130% of itself in 4 years at a certain rate of simple interest. What will be the simple interest on ₹ 2000 for 3 years at the same rate of simple interest?

Ans ✗ 1. ₹ 480

✗ 2. ₹ 425

✔ 3. ₹ 450

✗ 4. ₹ 350

Q.1 1 The value of $1.\overline{3} + 0.1\overline{23} - 0.\overline{11}$ is equal to:

Ans ✗ 1. $1.\overline{36}$

✗ 2. $1.\overline{369}$

✗ 3. $0.3\overline{69}$

✔ 4. $1.3\overline{69}$

Q.1 2 What is the compound interest on ₹ 48000 for 3 years (interest rounded off to a rupee) if the rate of interest for the first year is 8% per annum and it increases by 2% every subsequent years?

Ans ✔ 1. ₹ 15867

✗ 2. ₹ 14726

✗ 3. ₹ 14480

✗ 4. ₹ 14528

Q.1 3 The sides of a triangle are 26 cm, 28 cm and 30 cm. What is the length of its shortest altitude?

Ans ✗ 1. 24 cm

✗ 2. 11.2 cm

✔ 3. 22.4 cm

✗ 4. 25.8 cm

Q.1

4 The length of a rectangle is increased by 50%. By what percentage should its width be decreased so that its area remains the same?

Ans

✗ 1. $\frac{50}{3}$%

✗ 2. 20%

✓ 3. $\frac{100}{3}$%

✗ 4. 25%

Question ID : 1626531874

Q.1 5 Two pipes A and B alone can fill an empty tank in 4 hours and 8 hours respectively. Pipe C can empty the full tank in 5 hours. Pipes A and B are opened when tank is empty and, after 2 hours, pipe C is opened. In how many hours will the tank be filled?

Ans

✗ 1. $\frac{26}{7}$

✓ 2. $\frac{24}{7}$

✗ 3. $\frac{27}{7}$

✗ 4. $\frac{25}{7}$

Question ID : 1626531884

Q.1 6 The value of $\dfrac{(0.86)^3+(0.14)^3}{(8.6)^2+(1.4)^2-86\times0.14}$ is equal to:

Ans ✗ 1. 10

✓ 2. 0.01

✗ 3. 0.001

✗ 4. 0.1

Question ID : 1626531868

Q.1 7 The LCM of two numbers is 35 times their HCF. If their HCF is 45 and both the numbers are three-digit numbers, then what is the sum of their reciprocals?

Ans

✗ 1. $\frac{12}{35}$

✓ 2. $\frac{4}{525}$

✗ 3. $\frac{7}{16}$

✗ 4. $\frac{2}{525}$

Question ID : 1626531870

Comprehension:

A survey was conducted among certain number of students about the subject that they like most. The number of students and the corresponding central angle on a pie chart are given in the table. Read the table and answer the following three questions.

Subject	English	Maths	Science	History	Mother Tongue
Central angle on pie chart	62.4°	$(5a)°$	$(3a)°$	52.8°	72°
No. of students	26	45	27	b	c

SubQuestion No : 18

Q.18 What is the total number of students surveyed?

Ans ✗ 1. 180

✗ 2. 120

✔ 3. 150

✗ 4. 200

Question ID : 1626531886

Comprehension:

A survey was conducted among certain number of students about the subject that they like most. The number of students and the corresponding central angle on a pie chart are given in the table. Read the table and answer the following three questions.

Subject	English	Maths	Science	History	Mother Tongue
Central angle on pie chart	62.4°	$(5a)°$	$(3a)°$	52.8°	72°
No. of students	26	45	27	b	c

SubQuestion No : 19

Q.19 What is the value of $(b + c)$?

Ans ✗ 1. 48

✔ 2. 52

✗ 3. 56

✗ 4. 54

Question ID : 1626531887

Comprehension:

A survey was conducted among certain number of students about the subject that they like most. The number of students and the corresponding central angle on a pie chart are given in the table. Read the table and answer the following three questions.

Subject	English	Maths	Science	History	Mother Tongue
Central angle on pie chart	62.4°	$(5a)°$	$(3a)°$	52.8°	72°
No. of students	26	45	27	b	c

SubQuestion No : 20

Q.20 What percentage of students like Maths most?

Ans ✗ 1. 25%

✓ 2. 30%

✗ 3. 24%

✗ 4. 20%

Question ID : **1626531888**

Section : **General English**

Q.1 Select the most appropriate option to fill in the blank.

_____ we live in the same colony, we hardly see each other.

Ans ✓ 1. Although

✗ 2. As long as

✗ 3. Because

✗ 4. In case

Question ID : **1626531893**

Q.2 Arrange the parts of the sentence in a meaningful and grammatically correct order.

A. how polluting industries
B. the judges wondered
C. continued to operate
D. in the Taj Trapezium Zone
E. despite the Supreme Court's order

Ans ✗ 1. BADEC

✓ 2. BACDE

✗ 3. ADCEB

✗ 4. ACDBE

Q.3 Select the most appropriate option to fill in the blank.

His barber's shop is located _____ a corner of the Hauzrani village.

Ans ✗ 1. into

✗ 2. on

✗ 3. in

✔ 4. at

Q.4 Select the sentence structure that is grammatically correct.

Ans ✗ 1.

The Dragon tree with white flesh inside produces an oval shaped fruit, which can be eaten raw.

✗ 2.

An oval shaped fruit with white flesh inside, the Dragon tree produces, which can be eaten raw.

✔ 3.

The Dragon tree produces an oval shaped fruit with white flesh inside, which can be eaten raw.

✗ 4.

An oval shaped fruit, which can be eaten raw with white flesh inside, the Dragon tree produces.

Q.5 Select the synonym of the given word.

ESTIMATE

Ans ✗ 1. solve

✗ 2. believe

✗ 3. find

✔ 4. assess

Q.6 Select the most appropriate option to fill in the blank.

In our country, many people have the habit of offering _____ advice.

Ans ✗ 1. unnatural

✗ 2. unfounded

✔ 3. unsolicited

✗ 4. unasked

Q.7

Select the most appropriate option to fill in the blank.

Rahul drew a line over the map and said, "We will visit at least four towns _____ this river."

Ans   ✗ 1. over

  ✗ 2. under

  ✔ 3. along

  ✗ 4. across

Q.8 In the following sentence, four words/phrases have been underlined. One of them is incorrect. Choose the INCORRECT word/phrase from the given options.

You can go now but you must be back in the office between 4 o'clock.

Ans   ✗ 1. can go

  ✔ 2. between

  ✗ 3. must be back

  ✗ 4. but

Q.9 Select the ANTONYM of the given word.

PERSEVERANCE

Ans   ✗ 1. resoluteness

  ✔ 2. instability

  ✗ 3. urgency

  ✗ 4. determination

Q.10 Select the synonym of the given word.

LYNCH

Ans   ✗ 1. beat

  ✗ 2. raid

  ✔ 3. kill

  ✗ 4. attack

Q.11 Select the most appropriate option to fill in the blank.

I have put on weight, _____ these trousers don't fit me any longer.

Ans   ✗ 1. but

  ✗ 2. or

✔ 3. so
✘ 4. and

Q.12 Select the most appropriate option to fill in the blank.

The landlord _____ Mr. Singhal when he failed to pay rent for four months.

Ans ✘ 1. punished

✘ 2. threw

✔ 3. evicted

✘ 4. forced

Q.13 Select the most appropriate option to fill in the blank.

Why are you taking away my plate? I _____ yet.

Ans ✘ 1. will not have finished

✔ 2. haven't finished

✘ 3. did not finish

✘ 4. am not finishing

Q.14 In the following sentence, four words/phrases have been underlined. One of them is incorrect. Choose the INCORRECT word/phrase from the given options.

No sooner we boarded the train than it started and picked up the speed.

Ans ✘ 1. No sooner

✘ 2. picked up

✘ 3. than it started

✔ 4. we boarded

Q.15 Select the ANTONYM of the given word.

EMERGE

Ans ✘ 1. surface

✔ 2. vanish

✘ 3. materialise

✘ 4. appear

Comprehension:

Read the following passage and answer the questions.

THE NAME KYIRONG means "the village of happiness." I shall never cease thinking of this place with yearning, and if I can choose where to pass the evening of my life, it will be in Kyirong. When we arrived in January, the temperature was just below freezing; it seldom falls below - 10 degrees centigrade. The seasons correspond to what we have in the Alps, but the vegetation is subtropical. One can go skiing the whole year round, and in the summer, there is a row of 20,000-footers to climb.

There are about eighty houses in the village, which is the seat of two district governors who administer thirty villages. We were told that we were the first Europeans who had ever come to Kyirong, and the inhabitants watched our entry with astonishment. We were quartered in the house of a farmer, which reminded me of our Austrian houses. As a matter of fact, the whole of the village might have been transplanted from the Alps, except that instead of chimneys the roofs of the houses were decorated with prayer flags.

On the ground floor were the stables for cows and horses. They were separated by a thick ceiling from the living rooms of the family, which are approached by a ladder from the courtyard. Thick stuffed mattresses served as beds and easy chairs, and near them were small, low tables. The members of the household kept their clothes in brightly painted wardrobes, and before the inevitable carved wooden altar, butter lamps were burning. In winter the whole family sat on the clean floorboards around a huge open log fire and sip their tea.

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SubQuestion No : 16

Q.16 Match the words with their meaning.

a. yearning	1. nauseating
b. quartered	2. lodged
c. repugnant	3. longing

Ans ✗ 1. a-1, b-3, c-2

2. a-3, b-2, c-1
3. a-2, b-1, c-3
4. a-2, b-3, c-1

Comprehension:

Read the following passage and answer the questions.

THE NAME KYIRONG means "the village of happiness." I shall never cease thinking of this place with yearning, and if I can choose where to pass the evening of my life, it will be in Kyirong. When we arrived in January, the temperature was just below freezing; it seldom falls below -10 degrees centigrade. The seasons correspond to what we have in the Alps, but the vegetation is subtropical. One can go skiing the whole year round, and in the summer, there is a row of 20,000-footers to climb.

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SubQuestion No : 17

Q.1

7 The passage is an extract from:

Ans   ✗ 1. a biography

✗ 2. an article

✗ 3. a report

✔ 4. a travelogue

Comprehension:

Read the following passage and answer the questions.

THE NAME KYIRONG means "the village of happiness." I shall never cease thinking of this place with yearning, and if I can choose where to pass the evening of my life, it will be in Kyirong. When we arrived in January, the temperature was just below freezing; it seldom falls below -10 degrees centigrade. The seasons correspond to what we have in the Alps, but the vegetation is subtropical. One can go skiing the whole year round, and in the summer, there is a row of 20,000-footers to climb.

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SubQuestion No : 18

Q.18 Which of the following foods was the narrator not able to relish?

Ans ✔ 1. Butter tea

✘ 2. Meat

✘ 3. Tsampa

✘ 4. Milk and beer

Comprehension:

Read the following passage and answer the questions.

THE NAME KYIRONG means "the village of happiness." I shall never cease thinking of this place with yearning, and if I can choose where to pass the evening of my life, it will be in Kyirong. When we arrived in January, the temperature was just below freezing; it seldom falls below -10 degrees centigrade. The seasons correspond to what we have in the Alps, but the vegetation is subtropical. One can go skiing the whole year round, and in the summer, there is a row of 20,000-footers to climb.

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SubQuestion No : 19

Q.19 "If I can choose where to pass the evening of my life, it will be in Kyirong." The narrator fell in love with Kyirong village mainly because:

Ans ✗ 1. the name of the village meant 'village of happiness'

Question ID : **1626531906**

Comprehension:

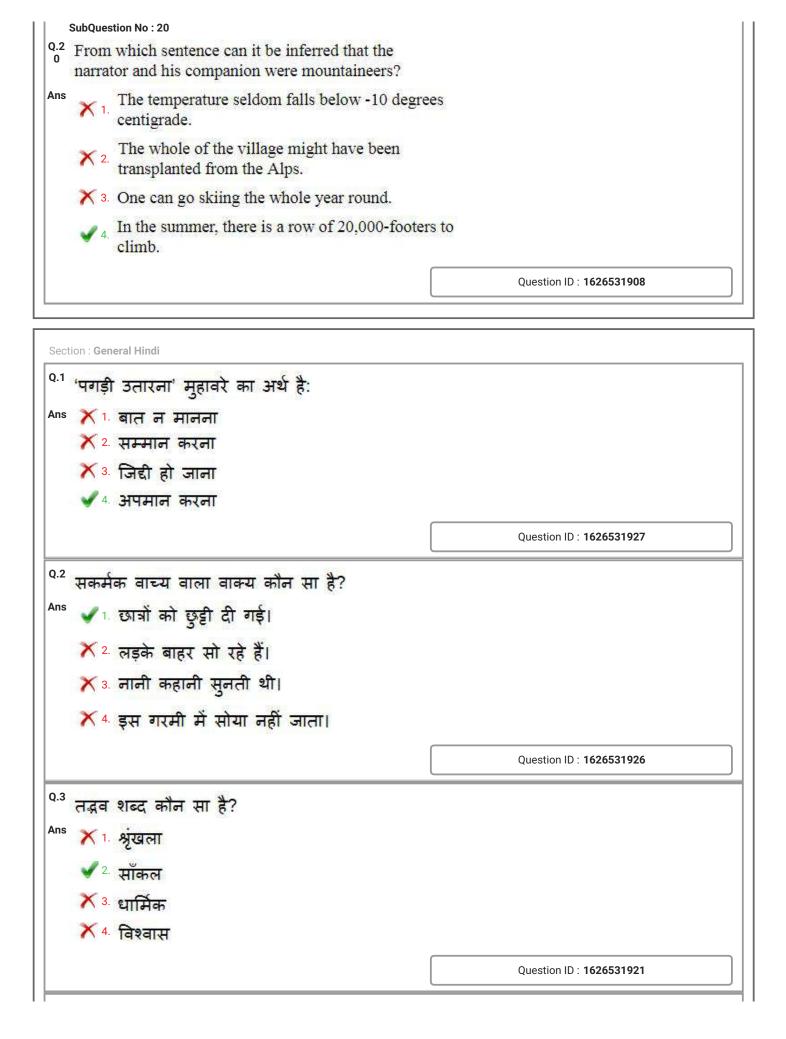Read the following passage and answer the questions.

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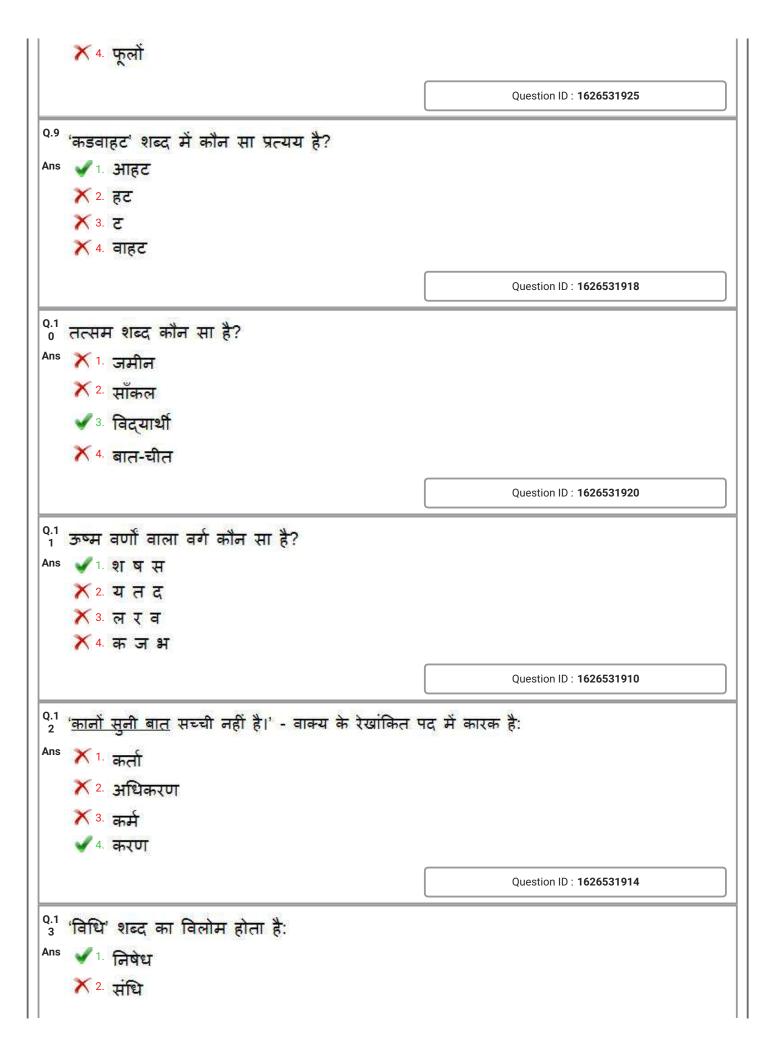
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Q.20 From which sentence can it be inferred that the narrator and his companion were mountaineers?

Ans

✗ 1. The temperature seldom falls below -10 degrees centigrade.

✗ 2. The whole of the village might have been transplanted from the Alps.

✗ 3. One can go skiing the whole year round.

✔ 4. In the summer, there is a row of 20,000-footers to climb.

Question ID : **1626531908**

Section : **General Hindi**

Q.1 'पगड़ी उतारना' मुहावरे का अर्थ है:

Ans ✗ 1. बात न मानना

✗ 2. सम्मान करना

✗ 3. जिद्दी हो जाना

✔ 4. अपमान करना

Question ID : **1626531927**

Q.2 सकर्मक वाच्य वाला वाक्य कौन सा है?

Ans ✔ 1. छात्रों को छुट्टी दी गई।

✗ 2. लड़के बाहर सो रहे हैं।

✗ 3. नानी कहानी सुनती थी।

✗ 4. इस गरमी में सोया नहीं जाता।

Question ID : **1626531926**

Q.3 तद्भव शब्द कौन सा है?

Ans ✗ 1. श्रृंखला

✔ 2. साँकल

✗ 3. धार्मिक

✗ 4. विश्वास

Question ID : **1626531921**

Q.4 'बुरे कर्मों का फल अच्छा नहीं हो सकता' - इस आशय के लिए लोकोक्ति है:

Ans ✔ 1. बोया पेड़ बबूल का आम कहाँ से होय

✘ 2. माया को माया मिली कर-कर लंबे हाथ

✘ 3. दूध का दूध पानी का पानी

✘ 4. लेना एक न देना दो

Question ID : **1626531928**

Q.5 विशेषण रूप में प्रयुक्त होने वाला शब्द है:

Ans ✘ 1. बहन

✘ 2. भवन

✔ 3. ममेरा

✘ 4. अमरुद

Question ID : **1626531919**

Q.6 कंठ से उच्चरित होने वाले वर्ण कौन से वर्ग में हैं?

Ans ✔ 1. अ ख घ ह

✘ 2. च ग य श

✘ 3. ल ओ न श

✘ 4. ट ष र ड

Question ID : **1626531911**

Q.7 'नीलगाय' शब्द में कौन सा समास है?

Ans ✘ 1. द्वंद्व

✔ 2. कर्मधारय

✘ 3. द्विगु

✘ 4. अव्ययीभाव

Question ID : **1626531916**

Q.8 फूल शब्द का बहुवचन (अविभक्तिक) होगा:

Ans ✘ 1. फूलो

✔ 2. फूल

✘ 3. फूलें

4. फूलों ✗

Q.9 'कडवाहट' शब्द में कौन सा प्रत्यय है?

Ans ✔ 1. आहट

✗ 2. हट

✗ 3. ट

✗ 4. वाहट

Q.10 तत्सम शब्द कौन सा है?

Ans ✗ 1. जमीन

✗ 2. साँकल

✔ 3. विद्यार्थी

✗ 4. बात-चीत

Q.11 ऊष्म वर्णों वाला वर्ग कौन सा है?

Ans ✔ 1. श ष स

✗ 2. य त द

✗ 3. ल र व

✗ 4. क ज भ

Q.12 'कानों सुनी बात सच्ची नहीं है।' - वाक्य के रेखांकित पद में कारक है:

Ans ✗ 1. कर्ता

✗ 2. अधिकरण

✗ 3. कर्म

✔ 4. करण

Q.13 'विधि' शब्द का विलोम होता है:

Ans ✔ 1. निषेध

✗ 2. संधि

✗ 3. विधान

✗ 4. विधाता

Q.14 'प्रत्याशी' शब्द में उपसर्ग है:

Ans ✗ 1. परा

✗ 2. प्रा

✗ 3. प्र

✓ 4. प्रति

Q.15 'सुवर्ण' शब्द का पर्यायवाची नहीं है:

Ans ✗ 1. हेम

✗ 2. कंचन

✗ 3. कनक

✓ 4. रजत

Q.16 कौन सा वाक्य ग़लत है?

Ans ✗ 1. जो करेगा सो भरेगा।

✗ 2. आप इधर आ जाइए।

✓ 3. उसने अपनी बात सप्रमाण सहित कही।

✗ 4. सुनो, यह काम कर दो।

Q.17 'जीने की इच्छा' - इस वाक्यांश के लिए शब्द होगा:

Ans ✓ 1. जिजीविषा

✗ 2. जिगीषा

✗ 3. दीर्घायुष्य

✗ 4. जिज्ञासा

Q.18 'जगदीश' शब्द बना है:

Ans

✗ 1. जगद + ईश से

✓ 2. जगत् + ईश से

✗ 3. जगदी + श से

✗ 4. जग + दीश से

Q.19 'मैं कालेज जाऊँगा।' - यह वाक्य किस काल का है?

Ans ✗ 1. अपूर्ण भूत

✗ 2. वर्तमान

✓ 3. भविष्य

✗ 4. भूत

Q.20 कौन सा शब्द अशुद्ध है?

Ans ✗ 1. व्याकुल

✓ 2. साम्यता

✗ 3. सौख्य

✗ 4. अपराध

Section : **Subject Related**

Q.1 If 'p' is a prime, then the congruence $x^2 + 1 \equiv 0 (\text{mod } p)$ has a solution if and only if:

Ans ✗ 1. $p = 1$ or $p \equiv 1 (\text{mod } 3)$

✗ 2. $p \neq 2$ or $p \equiv 1 (\text{mod } 2)$

✓ 3. $p = 2$ or $p \equiv 1 (\text{mod } 4)$

✗ 4. $p = -2$ or $p \equiv 2 (\text{mod } 3)$

Q.2 Let A denote the set of all polynomials P(x) of degree less than or equal to 2 such that $P(1) = 1$, $P(0) = 0$ and $P'(x) > 0$ for all $x \in [0,1]$. Then:

Ans ✓ 1. $A = \{(1 - a)x^2 + ax : a \in (0,2)\}$

✗ 2. A is empty

✗ 3. $A = \{(1 - a)x^2 + ax : a \in (0, \infty)\}$

✗ 4. $A = \{(1 - a)x^2 + ax : a \in (0,1)\}$

Q.3 For any positive integers 'a' and 3, there exist unique integers 'q' and 'r' such that a = 3q + r, where r must satisfy:

Ans ✗ 1. $1 < r < 3$

✗ 2. $0 < r < 3$

✔ 3. $0 \leq r < 3$

✗ 4. $0 < r \leq 3$

Q.4 Which of the following set of vectors $x = (x_1, x_2, x_3)$ and R^3 is a subspace of R^3 ?

Ans ✗ 1. all x such that x_2 is rational

✔ 2. all x such that $x_1 + 3x_2 = x_3$

✗ 3. all x such that $x_1 \geq 0$

✗ 4. all x such that $x_2 = x_1^2$

Q.5 For what value of α, the vectors $(0, 0, 1, 0)$, $(α, 0, 0, 8)$, $(2, 0, 0, α)$ and $(1, 2, 9, 8)$ are linearly independent?

Ans ✔ 1. ± 4

✗ 2. -1

✗ 3. 3

✗ 4. ± 2

Q.6 The matrix representation of T on R^2 defined by $T(x, y) = (2y, 3x - y)$ relative to the basis $\{(1,3),(2,5)\}$ is:

Ans ✗ 1. $\begin{pmatrix} -30 & -48 \\ 19 & 29 \end{pmatrix}$

✗ 2. $\begin{pmatrix} -31 & -48 \\ 18 & 29 \end{pmatrix}$

✔ 3. $\begin{pmatrix} -30 & -48 \\ 18 & 29 \end{pmatrix}$

✗ 4. $\begin{pmatrix} -30 & -47 \\ 18 & 29 \end{pmatrix}$

Q.7 For a positive integer n, by using Chinese Remainder Theorem, the number of solutions of the congruence
$x^2 \equiv 1 \pmod{n}$, when e ≥ 3 is:

Ans ✗ 1. $2^k + 1$

✗ 2. 2^{k+1}

✔ 3. 2^{k+2}

✘ 4. 2^k

Q.8 The decimal expansion of number $\dfrac{441}{2^2 \times 5^3 \times 7}$ ———.

Ans ✘ 1. is non-terminating but repeating

✘ 2. terminates after two places of decimal

✔ 3. has a terminating decimal

✘ 4. is non-terminating and non-repeating

Q.9 The HCF of 4052 and 12576 is:

Ans ✔ 1. 4

✘ 2. 2

✘ 3. 6

✘ 4. 3

Q.10 If two zeroes of the polynomial $x^4 - 6x^3 - 26x^2 + 138x - 35$ are $2 \pm \sqrt{3}$, then other zeroes are:

Ans ✘ 1. 2 and 5

✔ 2. 7 and −5

✘ 3. 5 and 8

✘ 4. 3 and −10

Q.11 Let W be the set of all triples (x_1, x_2, x_3) of real numbers that satisfy the equation $2x_1 - x_2 + 3x_3 = k$. If W is to be a vector space, then the value of k is:

Ans ✘ 1. 1

✔ 2. 0

✘ 3. 2

✘ 4. −1

Q.12 By applying Euclid's division lemma, the cube of any positive integer is of the form:

Ans ✘ 1. 9 m, 9 m + 2 or 9 m + 7

✔ 2. 9 m, 9 m + 1 or 9 m + 8

✘ 3. 9 m, 9 m + 4 or 9 m + 5

✗ 4. 9 m, 9 m + 3 or 9 m + 6

Q.13 The order of 2 modulo 101 is:

Ans ✓ 1. 100

✗ 2. 98

✗ 3. 99

✗ 4. 97

Q.14 For what least value of n, the natural number $(24)^n$ is divisible by 8?

Ans ✓ 1. 1

✗ 2. 0

✗ 3. No value of n is possible

✗ 4. -1

Q.15 The Euclidean Algorithm is used to produce a sequence $X_1 > X_2 > X_3 > X_4 > X_5 = 0$ of positive integers where $X_t = q_{t+1}X_{t+1} + X_{t+2}, t = 1,2,3$. The quotients are $q_2 = 3, q_3 = 2$, and $q_4 = 2$. Which of the following is correct?

Ans ✗ 1. $\gcd(X_1, X_2) = -2X_1 + 6X_2$

✗ 2. $\gcd(X_1, X_2) = 2X_1 + 7X_2$

✗ 3. $\gcd(X_1, X_2) = -2X_1 - 6X_2$

✓ 4. $\gcd(X_1, X_2) = -2X_1 + 7X_2$

Q.16 For the operator T on R^3 defined by $T(x,y,z) = (x - y, 2x + 3y + 2z, x + y + 2z)$, all eigenvalues and a basis for each eigenspace as

Ans ✗ 1. $\lambda_1 = 1, (1,1,-1); \lambda_2 = 2, (2,-2,-1); \lambda_3 = 3, (1,-2,-1)$

✓ 2. $\lambda_1 = 1, (1,0,-1); \lambda_2 = 2, (2,-2,-1); \lambda_3 = 3, (1,-2,-1)$

✗ 3. $\lambda_1 = 1, (1,0,1); \lambda_2 = 2, (2,-2,1); \lambda_3 = 3, (1,-2,-1)$

✗ 4. $\lambda_1 = 1, (1,0,-1); \lambda_2 = 2, (2,2,-1); \lambda_3 = 3, (1,-2,1)$

Q.17 A number $2.\overline{35}$ is:

Ans ✓ 1. a rational number

✗ 2. an irrational number

✗ 3. a rational number and a prime number

✗ 4. a prime number

Q.18 Wilson's Theorem states that if 'p' is a prime, then:

Ans ✗ 1. $p! = -1 \pmod{p}$

✗ 2. $(p - 1) = -1 \pmod{p}$

✗ 3. $(p - 1)! = -2 \pmod{p}$

✔ 4. $(p - 1)! = -1 \pmod{p}$

Q.19 Which of the following statements is true?

Ans ✗ 1. A number is rational if and only if its square is rational.

✗ 2. A number n is odd if and only if n(n + 1) is even

✔ 3. An integer n is odd if and only if $n^2 + 2n$ is odd.

✗ 4. A number is irrational if and only if its square is irrational.

Q.20 The value of λ for which the system of equations $2x - y - z = 2$, $x - 2y + z = -4$, $x + y + \lambda z = 4$ has no solution, is:

Ans ✗ 1. 0

✔ 2. −2

✗ 3. 3

✗ 4. −3

Section : **Subject Related**

Q.1 The zeroes of the quadratic polynomial, the sum and product of whose zeroes are $\sqrt{2}$ and $\frac{-3}{2}$, respectively, are:

Ans

✗ 1. $\frac{-1}{\sqrt{2}}, \frac{\sqrt{3}}{2}$

✔ 2. $\frac{-1}{\sqrt{2}}, \frac{3}{\sqrt{2}}$

✗ 3. $\frac{1}{\sqrt{2}}, \frac{-2}{\sqrt{3}}$

✗ 4. $\frac{-1}{\sqrt{2}}, \frac{-3}{\sqrt{2}}$

Q.2 A manufacturer has 600 L of a 12% solution of acid. How many litres of a 30% acid solution must be added to it such that acid content in the resulting mixture will be more than 15% but less than 18%?

Ans ✔ 1. more than 120 L but less than 300 L

✘ 2. more than 140 L but less than 320 L

✘ 3. more than 110 L but less than 290 L

✘ 4. more than 220 L but less than 300 L

Q.3 Let T_r be the rth term of an A.P. for $r = 1, 2, 3,\ldots$ If for some positive integers m and n, we have $T_m = \frac{1}{n}$ and $T_n = \frac{1}{m}$, then T_{mn} equals:

Ans ✘ 1. 0

✘ 2. $\left(\frac{1}{m}\right) + \left(\frac{1}{n}\right)$

✘ 3. $\dfrac{1}{mn}$

✔ 4. 1

Q.4 If $x = 2$ is a solution of a quadratic equation $3x^2 - 2kx + 5 = 0$, then value of 'k' is:

Ans ✔ 1. $\dfrac{17}{4}$

✘ 2. $\dfrac{7}{4}$

✘ 3. $\dfrac{-17}{4}$

✘ 4. $\dfrac{4}{17}$

Q.5 The solution of a quadratic equation $x^2 + 4\sqrt{2}x + 6 = 0$ is:

Ans ✘ 1. $-\sqrt{2}, \sqrt{18}$

✘ 2. $\sqrt{2}, \sqrt{18}$

✔ 3. $-\sqrt{2}, -\sqrt{18}$

✘ 4. $\sqrt{2}, -\sqrt{18}$

Q.6 For what value of k, the linear equations $(3k + 1)x + 3y = 2, (k^2 + 1)x + (k - 2)y = 5$ have no solution?

Ans ✗ 1. 0
✗ 2. 2
✗ 3. 1
✓ 4. −1

Q.7 If the two of the zeroes of the cubic polynomial $ax^3 + bx^2 + cx + d$ are 0, then the third zero is:

Ans ✓ 1. $\dfrac{-b}{a}$

✗ 2. $\dfrac{-d}{a}$

✗ 3. $\dfrac{b}{a}$

✗ 4. $\dfrac{c}{a}$

Q.8 Reduce the pair of equations $\dfrac{10}{x+y} + \dfrac{2}{x-y} = 4, \dfrac{15}{x+y} - \dfrac{5}{x-y} = -2$ into a pair of linear equations. Then find its solution from the following options:

Ans ✓ 1. $x = 3, y = 2$

✗ 2. $x = -3, y = -2$

✗ 3. $x = -3, y = 2$

✗ 4. $x = 3, y = -2$

Q.9 The solution of a quadratic equation $\dfrac{x+1}{x-1} + \dfrac{x-1}{x+1} = \dfrac{10}{3}$ is:

Ans ✗ 1. −2, 3
✓ 2. −2, 2
✗ 3. −4, 4
✗ 4. 2, 4

Q.10 The solution of $|x^2 - 1| + (x - 1)^2 + \sqrt{x^2 - 3x + 2} = 0$:

Ans ✓ 1. 1
✗ 2. does not exist
✗ 3. −1
✗ 4. 2

Q.1 1 The diagonal of a rectangular plot is 60 m more than the shorter side 'b'. If the longer side 'a' is 30 m more than the shorter side, then the size 'a × b' of the plot is:

Ans
✘ 1. $90 \text{ m} \times 60 \text{ m}$
✔ 2. $120 \text{ m} \times 90 \text{ m}$
✘ 3. $60 \text{ m} \times 30 \text{ m}$
✘ 4. $180 \text{ m} \times 150 \text{ m}$

Q.1 2 The solution of pair of linear equations $3x - 5y = 4, 9x - 2y = 7$ by the substitution method, is:

Ans
✔ 1. $x = \frac{9}{13}, y = \frac{-5}{13}$
✘ 2. $x = \frac{9}{13}, y = \frac{5}{13}$
✘ 3. $x = \frac{-9}{13}, y = \frac{5}{13}$
✘ 4. $x = \frac{-9}{13}, y = \frac{-5}{13}$

Q.1 3 For what value of k, the system of linear equations $2x - y = 3, 4x + ky = 4$ has no solution?

Ans
✘ 1. -4
✔ 2. -2
✘ 3. 2
✘ 4. -1

Q.1 4 If the zeroes of the polynomial $x^3 - 3x^2 + x + 1$ are a – b, a and a + b respectively, then the values of 'a' and 'b' are respectively:

Ans
✔ 1. $1, \pm\sqrt{2}$
✘ 2. $3, -\sqrt{2}$
✘ 3. $-1, \sqrt{2}$
✘ 4. $1, \pm\sqrt{\frac{3}{2}}$

Q.1 5 The sum of the first '2n' terms of the A.P. 2, 5, 8, ... is equal to the sum of the first 'n' terms of the A.P. 57, 59, 61,....., then 'n' equals:

Ans
✘ 1. 12
✘ 2. 13
✘ 3. 10

✔ 4. 11

Q.1 6 A train travels 360 km at a uniform speed. If the speed had been 5 km/h more, it would have taken 1 hour less for the same journey, then the speed of the train is:

Ans ✘ 1. 30 km/h

✘ 2. 50 km/h

✘ 3. 45 km/h

✔ 4. 40 km/h

Q.1 7 If α, β, γ are zeroes of cubic polynomial $kx^3 - 5x + 9$, and if $\alpha^3 + \beta^3 + \gamma^3 = 27$, then the value of k is:

Ans ✘ 1. 1

✘ 2. 2

✔ 3. -1

✘ 4. -2

Q.1 8 For what value of k, the system of linear equations $3x + 4y = 12, x + ky = 4$ has infinitely many solutions?

Ans
✔ 1. $\dfrac{4}{3}$

✘ 2. $\dfrac{3}{2}$

✘ 3. $\dfrac{2}{3}$

✘ 4. $\dfrac{3}{4}$

Q.1 9 Sum to 'n' terms of the series $\dfrac{1}{1.2.3} + \dfrac{3}{2.3.4} + \dfrac{5}{3.4.5} + \dfrac{7}{4.5.6} + \cdots$ is:

Ans
✔ 1. $\dfrac{n(3n+1)}{4(n+1)(n+2)}$

✘ 2. $\dfrac{n(n+2)}{(n+3)(n+4)}$

✘ 3. $\dfrac{n(n+2)}{(n+1)(n+4)}$

✘ 4. $\dfrac{n(n+1)}{2(n+1)(n+4)}$

Q.20 The solution of pair of linear equations $\frac{1}{2}x + \frac{2}{3}y = -1, x - \frac{1}{3}y = 3$ by the elimination method, is:

Ans ✗ 1. $x = 2, y = 3$

✗ 2. $x = -2, y = -3$

✗ 3. $x = -2, y = 3$

✔ 4. $x = 2, y = -3$

Question ID : **1626531957**

Section : **Subject Related**

Q.1 How many numbers must be selected from the set $\{1, 2, 3, 4, 5, 6\}$ to guarantee that at least one pair of these numbers add up to 7?

Ans ✗ 1. 3

✗ 2. 2

✔ 3. 4

✗ 4. 5

Question ID : **1626531970**

Q.2 How many positive integers less than 200 are NOT divisible by three or more primes?

Ans ✔ 1. 168

✗ 2. 122

✗ 3. 197

✗ 4. 65

Question ID : **1626531973**

Q.3 What is the coefficient of $x^{101}y^{99}$ in the expansion of $(2x - 3y)^{200}$?

Ans ✔ 1. $-\binom{200}{99}2^{101}3^{99}$
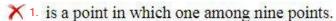
✗ 2. $\binom{200}{99}2^{101}3^{99}$

✗ 3. $\binom{101}{99}2^{101}3^{99}$

✗ 4. $-\binom{101}{99}2^{101}3^{99}$

Question ID : **1626531971**

Q.4 The center of the nine point circle:

Ans

✗ 1. is a point in which one among nine points.

✗ 2.
does not lie at the midpoint of the segments joining the orthocenter to each of the vertices.

✔ 3. is the circumcenter of the triangle.

✗ 4. is not the midpoints of the three sides.

Q.5
The value of the integral $\int \frac{e^x(1+\sin x)}{1+\cos x}\,dx$ is:

Ans ✗ 1. $\sin(\log x) + C$

✔ 2. $e^x \tan\left(\frac{x}{2}\right) + C$

✗ 3. $\log|\tan x| + C$

✗ 4. $e^x \cot x + C$

Q.6 For proving that a quadrilateral is a parallelogram, prove any of the following valid conditions:

Ans ✗ 1. It is both a Rhombus and a Rectangle.

✗ 2. Its diagonals are perpendicular.

✗ 3. All 4 angles are congruent.

✔ 4. Both pairs of opposite angles are congruent.

Q.7
The second derivative of the function $f(x) = x^{\left(\frac{1}{x}\right)}$ at $x = e$ is:

Ans ✗ 1. $e^{\left(\frac{1}{(e-2)}\right)}$

✗ 2. $e^{\left(\frac{1}{(e-3)}\right)}$

✔ 3. $-e^{\left(\frac{1}{e}\right)-3}$

✗ 4. $e^{\left(\frac{1}{e}\right)}$

Q.8 How many positive integers not exceeding 1000 are divisible by 7 or 11?

Ans ✗ 1. 12

✗ 2. 90

✔ 3. 220

✗ 4. 142

Q.9 If (1.5, 0), (1.5, 6) and (-1, 6) are mid points of a triangle, then the incentre of the triangle is:

Ans
- ✔ 1. $(1, 2)$
- ✘ 2. $\left(\frac{2}{3}, 4\right)$
- ✘ 3. $(2, 3)$
- ✘ 4. $(4, 0)$

Question ID : **1626531987**

Q.10 The area of the triangle formed by the straight lines $7x - 2y + 10 = 0, 7x + 2y - 10 = 0$ and $9x + y + 2 = 0$ is:

Ans
- ✔ 1. $\frac{686}{275}$ sq. units
- ✘ 2. $\frac{686}{255}$ sq. units
- ✘ 3. $\frac{868}{275}$ sq. units
- ✘ 4. $\frac{688}{275}$ sq. units

Question ID : **1626531989**

Q.11 In a triangle ABC with vertices $A(1, 2), B(2, 3)$ and $C(3, 1)$ and $\angle C = \cos^{-1}\left(\frac{4}{5}\right), \angle B = \angle A = \cos^{-1}\left(\frac{1}{\sqrt{10}}\right)$. Then the coordinates of circumcentre of the triangle are:

Ans
- ✔ 1. $\left(\frac{11}{6}, 2\right)$
- ✘ 2. $(2, 13)$
- ✘ 3. $(11, 2)$
- ✘ 4. $\left(\frac{13}{6}, \frac{11}{6}\right)$

Question ID : **1626531988**

Q.12 The solution of the recurrence relation $a_n = 6a_{n-1} - 9a_{n-2}, a_0 = 1, a_1 = 6$ is:

Ans
- ✔ 1. $a_n = (1 + n)3^n$
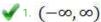- ✘ 2. $a_n = (n - 1)3^n$
- ✘ 3. $a_n = (1 + n)6^n$
- ✘ 4. $a_n = (1 - n)3^n$

Question ID : **1626531972**

Q.13 The set of all points where the function $f(x) = 2x|x|$ is differentiable, is:

Ans
- ✔ 1. $(-\infty, \infty)$

✗ 2. $(0, \infty)$

✗ 3. $[0, \infty)$

✗ 4. $(-\infty. 0) \cup (0, \infty)$

Q.1 4 If the function $f(x) = \{ \begin{array}{ll} ax^2 - b, & |x| < 1 \\ \frac{-1}{|x|}, & |x| \geq 1 \end{array}$ is differentiable, then the values of a and b are respectively:

Ans ✗ 1. $1, 2$

✓ 2. $0.5, 1.5$

✗ 3. $0.5, 0.5$

✗ 4. $1, -1$

Q.1 5 If $f(x) = x(\sqrt{x} - \sqrt{x+1})$, then:

Ans ✗ 1. $f(x)$ is not differentiable at $x = 0$

✓ 2. $f(x)$ is differentiable at $x = 0$

✗ 3. $f(x)$ is continuous but not differentiable at $x = 0$

✗ 4. $f(x)$ is differentiable at $x \neq 0$

Q.1 6 Identify the false statement given below:

Ans ✗ 1.
If the quadrilateral is cyclic, then the product of the two diagonals is equal to the sum of the products of the opposite side lengths.

✗ 2. Ceva's theorem is concerned with concurrency of the lines.

✗ 3.
Menelau's theorem is concerned with the collinearity of the points.

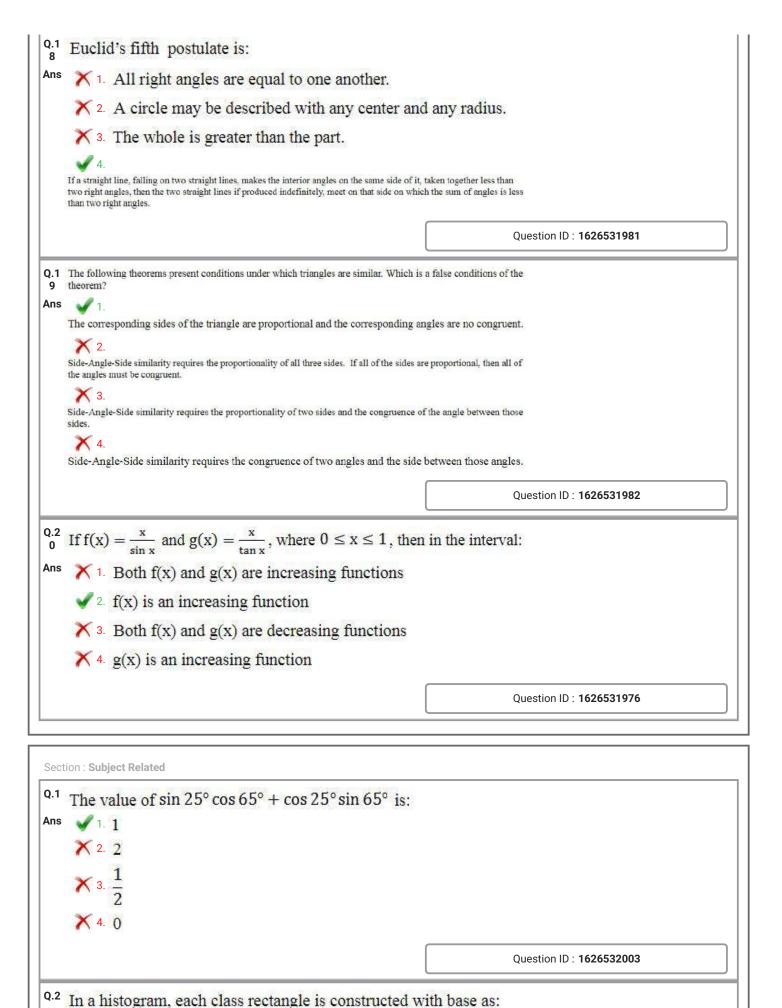✓ 4. Menelau's theorem is a not dual version of Ceva's theorem.

Q.1 7 The area of the quadrilateral whose vertices, taken in order, are $(-4, -2), (-3, -5), (3, -2)$ and $(2, 3)$, is:

Ans ✗ 1. 22 sq. units

✗ 2. 23 sq. units

✗ 3. 26 sq. units

✓ 4. 28 sq. units

Q.18 Euclid's fifth postulate is:

Ans ✗ 1. All right angles are equal to one another.

✗ 2. A circle may be described with any center and any radius.

✗ 3. The whole is greater than the part.

✔ 4.

If a straight line, falling on two straight lines, makes the interior angles on the same side of it, taken together less than two right angles, then the two straight lines if produced indefinitely, meet on that side on which the sum of angles is less than two right angles.

Q.19 The following theorems present conditions under which triangles are similar. Which is a false conditions of the theorem?

Ans ✔ 1.

The corresponding sides of the triangle are proportional and the corresponding angles are no congruent.

✗ 2.

Side-Angle-Side similarity requires the proportionality of all three sides. If all of the sides are proportional, then all of the angles must be congruent.

✗ 3.

Side-Angle-Side similarity requires the proportionality of two sides and the congruence of the angle between those sides.

✗ 4.

Side-Angle-Side similarity requires the congruence of two angles and the side between those angles.

Q.20 If $f(x) = \frac{x}{\sin x}$ and $g(x) = \frac{x}{\tan x}$, where $0 \le x \le 1$, then in the interval:

Ans ✗ 1. Both f(x) and g(x) are increasing functions

✔ 2. f(x) is an increasing function

✗ 3. Both f(x) and g(x) are decreasing functions

✗ 4. g(x) is an increasing function

Section : **Subject Related**

Q.1 The value of $\sin 25° \cos 65° + \cos 25° \sin 65°$ is:

Ans ✔ 1. 1

✗ 2. 2

✗ 3. $\frac{1}{2}$

✗ 4. 0

Q.2 In a histogram, each class rectangle is constructed with base as:

Ans ✗ 1. frequency

✗ 2. size of the class

✓ 3. class interval

✗ 4. range

Q.3 If $\tan(A-B) = \frac{1}{\sqrt{3}}, \tan(A+B) = \sqrt{3}, \ 0° < \angle(A+B) < 90°$ with $\angle A$ is greater than $\angle B$, then $\angle A$ and $\angle B$ are:

Ans ✗ 1. $\angle A = 45°, \angle B = 25°$

✗ 2. $\angle A = 60°, \angle B = 15°$

✗ 3. $\angle A = 30°, \angle B = 15°$

✓ 4. $\angle A = 45°, \angle B = 15°$

Q.4 A solid consisting of a right circular cone of height 1.20 m and radius 0.60 m standing on a hemisphere of radius 0.60 m is placed upright in a right circular cylinder full of water such that it touches the bottom. If the radius of the cylinder is 0.60 m and its height is 1.80 m, then the volume of water left in the cylinder is:

Ans ✗ 1. $1132 \ m^3$

✗ 2. $1130 \ m^3$

✓ 3. $1131 \ m^3$

✗ 4. $1031 \ m^3$

Q.5 The circle $x^2 + y^2 = 1$ cuts the x-axis at A and B, another circle with centre at B and variable radius, intersects the first circle at C above the x-axis and the line segment AB at D. Then the maximum area of the triangle is:

Ans ✓ 1. $\dfrac{4\sqrt{3}}{9}$ sq. units

✗ 2. $\dfrac{4\sqrt{2}}{3}$ sq. units

✗ 3. $\dfrac{4}{3\sqrt{3}}$ sq. units

✗ 4. $\dfrac{2\sqrt{3}}{9}$ sq. units

Q.6 If the median of the distribution given below is 28.5,

Class: 0 − 10 10 − 20 20 − 30 30 − 40 40 − 50 50 − 60
Freq.:   5   a   20   15   b   5   Total 60

then the missing values of a and b are respectively:

Ans ✗ 1. 3, 7

✗ 2. 2, 5

✔ 3. 8, 7

✗ 4. 8, 5

Question ID : **1626532009**

Q.7 Construction of a cumulative frequency table is useful in determining the:

Ans ✗ 1. mode

✔ 2. median

✗ 3. mean

✗ 4. all the three given measures

Question ID : **1626532007**

Q.8 The angle θ between the lines joining the points $(0, 0), (2,3)$ and $(2,-2), (3,5)$ is:

Ans ✗ 1. $tan^{-1}\left(\dfrac{1}{3}\right)$

✔ 2. $tan^{-1}\left(\dfrac{11}{23}\right)$

✗ 3. $tan^{-1}\left(\dfrac{11}{3}\right)$

✗ 4. $tan^{-1}\left(\dfrac{1}{23}\right)$

Question ID : **1626531991**

Q.9 The area of an equilateral triangle inscribed in the circle $x^2 + y^2 + 2gx + 2fy + c = 0$ is:

Ans ✔ 1. $\dfrac{3\sqrt{3}}{4}\sqrt{(g^2 + f^2 - 1)}$ sq. units

✗ 2. $\dfrac{3\sqrt{3}}{4}\sqrt{(g^2 + f^2 + 1)}$ sq. units

✗ 3. $\dfrac{\sqrt{27}}{4}\sqrt{(g^2 + f^2 + 1)}$ sq. units

✗ 4. $\dfrac{3\sqrt{3}}{4}\sqrt{(g^2 - f^2 - 1)}$ sq. units

Question ID : **1626531993**

Q.1 0 The angle of elevation of the top of a building from the foot of a tower is 30° and the angle of elevation of the top of the tower from the foot of the building is 60°. If the tower is 50 m high, then the height of the building is:

Ans ✗ 1. $\dfrac{51}{3}$ m

✗ 2. $\dfrac{49}{3}$ m

✔ 3. $\frac{50}{3}$ m

✘ 4. $\frac{47}{3}$ m

Question ID : 1626532004

Q.1 1 The distance between two parallel lines is unity. A point A lies between the lines at a distance 'a' from one of them. If the vertex B lies on one of the parallel lines and the vertex C lies on the other line, then the length of a side of an equilateral triangle ABC is:

Ans ✘ 1. $\frac{2}{\sqrt{3}}\sqrt{(a^2 + a - 1)}$ units

✘ 2. $\frac{\sqrt{2}}{3}\sqrt{(a^2 - a + 1)}$ units

✔ 3. $\frac{2}{\sqrt{3}}\sqrt{(a^2 - a + 1)}$ units

✘ 4. $\frac{2}{\sqrt{3}}\sqrt{(a^2 + a + 1)}$ units

Question ID : 1626531990

Q.1 2 If $\sec 4A = \csc(A - 20°)$, where 4A is an acute angle, then the value of A is:

Ans ✘ 1. 24°

✘ 2. 20°

✔ 3. 22°

✘ 4. 21°

Question ID : 1626532002

Q.1 3 A vessel is in the form of a hollow hemisphere mounted by a hollow cylinder. The diameter of the hemisphere is 14 cm and the total height of the vessel is 13 cm. Then the inner surface area of the vessel is:

Ans ✔ 1. 572 cm²

✘ 2. 562 cm²

✘ 3. 542 cm²

✘ 4. 527 cm²

Question ID : 1626531997

Q.1 4 The wheels of a taxi are of diameter 80 cm each. How many complete revolutions does each wheel make in 10 minutes when the taxi is traveling at a speed of 66 km/h?

Ans ✘ 1. 4355

✔ 2. 4375

✘ 3. 4735

✘ 4. 4325

Question ID : 1626531996

Q.1 5 In $\triangle ABC$, right angled at B, if $\tan A = \frac{1}{\sqrt{3}}$, then the value of $\sin A \cos C + \cos A \sin C$ is equal to:

Ans
✗ 1. 0
✔ 2. 1
✗ 3. 2
✗ 4. 4

Q.16 A medicine capsule is in the shape of cylinder with two hemispheres stuck to each of its ends .The length of the entire capsule is 14 mm and the diameter of the capsule is 5 mm. Then its surface area is:

Ans
✗ 1. $210 \, \text{mm}^2$

✔ 2. $220 \, \text{mm}^2$

✗ 3.

if the radius of the cylinder is 60 cm and its height is 180 cm.

✗ 4. $120 \, \text{mm}^2$

Q.17 The perimeter of a triangle right angled at C is 70, and the in-radius is 6. Then $|a - b|$ equals:

Ans
✗ 1. 2
✗ 2. 9
✗ 3. 8
✔ 4. 1

Q.18 A 120 cm tall boy spots a balloon moving with the wind in a horizontal line at a height of 8820 cm from the ground. The angle of elevation of the balloon from the eyes of the boy at one instant is 60°. After some time, the angle of elevation reduces to 30°. Then the distance travelled by the balloon during this interval is:

Ans
✗ 1. $2900\sqrt{3} \, \text{cm}$

✗ 2. $5700\sqrt{3} \, \text{cm}$

✗ 3. $8700\sqrt{3} \, \text{cm}$

✔ 4. $5800\sqrt{3} \, \text{cm}$

Q.19 Three circular coins each of radii 1 cm are kept in an equilateral triangle such that all the three coins touch each other and also the sides of the triangle. The area of the triangle is:

Ans
✔ 1. $(6 + 4\sqrt{3}) \, \text{cm}^2$

✗ 2. $\frac{1}{4}(12 + 7\sqrt{3}) \, \text{cm}^2$

✗ 3. $(4 + 2\sqrt{3}) \, \text{cm}^2$

✗ 4. $\frac{1}{4}(48 + 7\sqrt{3}) \, \text{cm}^2$

Q.2 In a retail market, fruit vendors were selling apples kept in packing boxes. These boxes contained varying number of
0 apples. The following was the distribution of apples according to the number of boxes.

No. of apples:	50 – 52	53 – 55	56 – 58	59 – 61	62 – 64
No. of boxes:	15	110	135	115	25

Then the mean number of apples kept in a packing box was:

Ans
❌ 1. 61.54
❌ 2. 59.16
❌ 3. 52.64
✅ 4. 57.19

Section : **Subject Related**

Q.1 The normal equations for finding a curve of the form $y = a + bx + cx^2$ for 'n' data are:

Ans
❌ 1.

$$\sum y = na + b\sum x + c\sum x^2, \sum xy = a\sum x + b\sum x^2 + c\sum x^3, \sum x^2 y = a\sum x^3 + b\sum x^4 + c\sum x^5$$

❌ 2.

$$\sum y = na + b\sum x + c\sum x^2, \sum y^2 = a\sum xy + b\sum x^2 + c\sum x^3, \sum x^2 y = a\sum x^2 + b\sum x^3 + c\sum x^4$$

❌ 3.

$$\sum y = a + b\sum x + c\sum x^2, \sum xy = a\sum x + b\sum x^2 + c\sum x^3, \sum x^2 y = a\sum x^2 + b\sum x^3 + c\sum x^4$$

✅ 4.

$$\sum y = na + b\sum x + c\sum x^2, \sum xy = a\sum x + b\sum x^2 + c\sum x^3, \sum x^2 y = a\sum x^2 + b\sum x^3 + c\sum x^4$$

Q.2 Three identical dice are rolled. The probability that the same number will appear on each of them is:

Ans
❌ 1. $\dfrac{1}{12}$

❌ 2. $\dfrac{1}{6}$

✅ 3. $\dfrac{1}{36}$

❌ 4. $\dfrac{1}{18}$

Q.3 If $\log e^{(x)}$ is normally distributed with mean 1 and variance 4, then $P(0.5 < x < 2)$ is:
(where the area between $z = 0$ and $z = 0.25$ is 0.0987 and the area between $z = 0$ and $z = 0.5$ is 0.1915)

Ans
❌ 1. 0.95
❌ 2. 0.693
✅ 3. 0.29
❌ 4. 0.396

Q.4 The standard error of the sample mean is:

Ans ✔ 1.

the square root of the variance of the population divided by the sample size

✘ 2. the variance of the population

✘ 3. the variance of the sample

✘ 4. the standard deviation of the sample mean

Q.5 A boy noted the number of taxi passing through a spot on a road for 100 periods each of 3 minutes and summarized it in the table given below.

No. of taxi: 0 – 10 10 – 20 20 – 30 30 – 40 40 – 50 50 – 60 60 – 70 70 – 80
Frequency: 07   14   13   12   20   11   15   08

Then the mode is:

Ans ✘ 1. 29.8

✘ 2. 32.1

✘ 3. 37.5

✔ 4. 44.7

Q.6 A continuous random variable x has a probability density function $f(x) = \begin{cases} 6x(1-x), & 0 < x \le 1 \\ 0, & otherwise \end{cases}$. Then the variance of x is:

Ans ✔ 1. $\dfrac{1}{20}$

✘ 2. $\dfrac{1}{40}$

✘ 3. $\dfrac{1}{5}$

✘ 4. $\dfrac{1}{2}$

Q.7 If two regression coefficients are -0.1 and -0.9, then correlation coefficient is:

Ans ✔ 1. -0.3

✘ 2. 0.3

✘ 3. -0.9

✘ 4. 0.9

Q.8 The probability of getting 4 heads in 6 tosses of a fair coin is:

Ans

✗ 1. $\dfrac{15}{128}$

✗ 2. $\dfrac{15}{32}$

✔ 3. $\dfrac{15}{64}$

✗ 4. $\dfrac{30}{32}$

Q.9 There are four machines and it is known that exactly two of them are faulty. They are tested, one by one, in a random order till both the faculty machines are identified. Then the probability that only two tests are needed is:

Ans

✗ 1. $\dfrac{1}{4}$

✗ 2. $\dfrac{1}{3}$

✗ 3. $\dfrac{1}{2}$

✔ 4. $\dfrac{1}{6}$

Q.10 Let X be a Poisson random variable such that $2P(X=0) = P(X=2)$. Then the standard deviations of X is:

Ans

✗ 1. $-\sqrt{2}$

✗ 2. 4

✗ 3. 2

✔ 4. $\sqrt{2}$

Q.11 In the classroom context when words are associated with pictures or meanings in language learning it is an example of:

Ans

✗ 1. Trial and error method

✗ 2. Discovery method of learning

✔ 3. Classic conditioning

✗ 4. Operant conditioning

Q.12 Creativity in craft can be described as:

Ans ✗ 1. Making models according to the given patterns

✓ 2.

Being able to see material not as they are but what they can become

✗ 3. Being able to make articles based on instructions

✗ 4. Following steps and procedures to reproduce given models

Question ID : **1626532027**

Q.13 Which of the following is the law relevant to declining sex ratio?

Ans ✓ 1. Right against female foeticide

✗ 2. Right to educational opportunities

✗ 3. Right against being arrested at night

✗ 4. Right to property

Question ID : **1626532024**

Q.14 One of the key recommendations by National Council of Teachers of Mathematics' Curriculum and Evaluation Standards for School Mathematics (1989) is that instruction in elementary school mathematics should _____.

Ans ✗ 1.

shift from skill based to exam oriented approach where students focus on outcomes

✗ 2.

stick to approaches that have been followed by our ancestors

✗ 3.

follow easy methods where in students can understand and remember with ease

✓ 4.

shift from a teacher-directed approach to those in which students are actively involved in searching for patterns and experimenting with their own conjectures.

Question ID : **1626532025**

Q.15 जटिलता के रूप में एक अवधारणा कब कहा जाता है?

Ans ✗ 1. जब यह स्पष्टीकरण से परे है

✗ 2. जब इसका प्रतिनिधित्व नहीं किया जा सकता है

✗ 3. जब यह औसत व्यक्ति की समझ से ऊपर है

✓ 4. जब इसकी एक से अधिक विशेषता होती है

Question ID : **1626532020**

Q.16 An observable inclusive practice in classroom is when _____.

Ans ✓ 1.

students with disabilities are not made just mute spectators in learning activities

✗ 2.

students without disabilities are actively participating in all activities

✗ 3. students with disabilities are made into groups

✗ 4. students with disabilities are taken out for remedial classes

Q.17 पाठ्यचर्या को परिभाषित किया जा सकता है जो _____।

Ans

✗ 1. विशेष स्कूलों के अनुरूप बनाया गया है

✗ 2.
स्कूल की आवश्यकताओं के आधार पर विकसित किया गया

✔ 3. स्कूल विषयों, सीखने के अनुभव और गतिविधियों सहित

✗ 4. सामग्री और ज्ञान के आधार पर विकसित किया गया

Q.18 Identify the right sequence of a scientific method when:

a) testing hypothesis b) identifying the problem c) data gathering d) construct hypothesis

Ans

✗ 1. d, a, c, b

✔ 2. b, d, c, a

✗ 3. c, b, d, a

✗ 4. b, c, a, d

Q.19 "A process that happens when people look at a text and assign meaning to the written symbols in that text" can be defined as _____.

Ans

✔ 1. Reading

✗ 2. Drawing

✗ 3. Writing

✗ 4. Watching

Q.20 Activities like climbing trees, plucking fruits, jumping, drama etc were part of educational programmes in educational institutions established by which of the following philosophers?

Ans

✗ 1. Rousseau

✗ 2. John Dewey

✔ 3. Rabindranath Tagore

✗ 4. Sri Aurobindo

DSSSB SEP 2018

Participant ID:	
Participant Name:	**HaryanaJobs.in**
Test Center Name:	
Test Date:	22/09/2018
Test Time:	12:30 PM - 2:30 PM
Subject:	TGT MATHS FEMALE

Section : Mental Ability

Q.1 निम्नलिखित सूचना को ध्यानपूर्वक पढ़ें और दिए गए प्रश्न का उत्तर दें।

नीचे, "एक्स.वाई.जेड. (XYZ)" कंपनी के कुछ पद हेतु योग्यताओं और शर्तों का उल्लेख किया गया है। उम्मीदवार को अनिवार्य रूप से

(a) कम से कम 70% अंक के साथ इंजीनियरिंग स्नातक होना चाहिए

(b) आयु 01/04/2018 को 21 वर्ष से कम तथा 26 वर्ष से अधिक नहीं होनी चाहिए

(c) लिखित परीक्षा में कम से कम 60% अंक के साथ उत्तीर्ण होना चाहिए

(d) ₹ 2.5 लाख की राशि जमा कराने हेतु तैयार होना चाहिए, जिसकी वापसी परिवीक्षा/प्रशिक्षण के बाद की जाएगी

यदि उम्मीदवार (a)-(d) की शर्तों को पूरा करता है तो उसे इंजीनियर के रूप में संदर्भित किया जाएगा।

(i) हालांकि, यदि उम्मीदवार सिवाय (a) के सभी शर्तों को पूरा करता है परंतु अंतिम सेमेस्टर की परीक्षा के परिणाम की घोषणा होनी अभी शेष है तथा उसने सातवें सेमेस्टर तक औसत 75% अंक प्राप्त किए हैं तो उसे प्रोजेक्ट इंजीनियर के रूप में माना जाएगा

(ii) यदि प्रतिभागी सिवाय (a) के सभी शर्तों को पूरा करता है परंतु उसने 75% अंक के साथ इंजीनियरिंग में डिप्लोमा किया है तो उसे सहायक इंजीनियर के रूप में माना जाएगा

(iii) यदि प्रतिभागी (d) के अनुसार, ₹ 1.5 लाख की राशि सुरक्षा के रूप में जमा करने हेतु तैयार है तो उसे इंजिनियर - प्रशिक्षु के रूप में माना जाएगा

(iv) (b) के अनुसार, यदि उसकी आयु 1/4/18 को 26 वर्ष से अधिक है परंतु उसे 3 वर्षों का अनुभव प्राप्त है तो उसे वरिष्ठ - इंजीनियर के रूप में माना जाएगा

राकुल ने 69.5% अंक के साथ इलेक्ट्रिकल इंजीनियरिंग पूरा किया है। उसने 59% अंक के साथ लिखित परीक्षा भी उत्तीर्ण की है। अप्रैल 2018 को उसकी आयु 22 वर्ष की हो गई है। वह ₹ 2.5 लाख की राशि सुरक्षा के रूप में जमा करने हेतु तैयार है। किस पद के लिए उसकी सिफारिश की जाएगी?
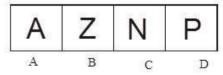
Question ID : 16794313519

Ans

✗ 1. प्रोजेक्ट-इंजीनियर

✔ 2. किसी भी पद के लिए योग्य नहीं है

✗ 3. इंजीनियर-प्रशिक्षु

✗ 4. इंजीनियर

Q.2 Choose the odd figure in the options:

A	Z	N	P
A	B	C	D

Question ID : 16794313514

Ans

✗ 1. B

✔ 2. D

✗ 3. C

✗ 4. A

Q.3 At present, the ratio between the ages of Suma Vanaja is 5 : 7. After 8 years, Suma's age will be 28 years. What is the age of Vanaja at present?
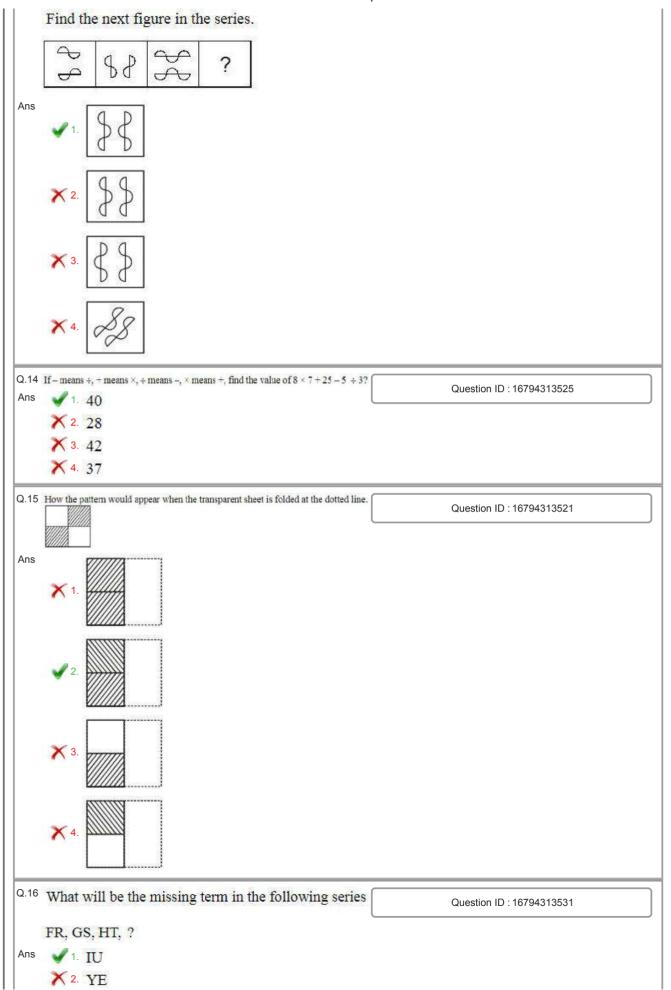
Question ID : 16794313527

Ans

✗ 1. 20 years

✔ 2. 28 years

✘ 3. 24 years

✘ 4. 19 years

Q.4 P.V Sindhu is related to badminton in the same way as Virat kohli is related to:

Question ID : 16794313512

Ans ✔ 1. Cricket

✘ 2. Basket ball

✘ 3. Football

✘ 4. Rukbey

Q.5 Four Train tickets from city A to B and Two tickets from city A to C cost ₹ 80 but Two tickets from city A to B and four tickets from city A to C cost ₹ 70. What are the fares for cities B and C from A?

Question ID : 16794313526

Ans ✔ 1. ₹ 15, ₹ 10

✘ 2. ₹ 13, ₹ 18

✘ 3. ₹ 12, ₹ 19

✘ 4. ₹ 15, ₹ 25

Q.6 सुदर्शन, मनोहर का पिता है। मनोहर के पिता के पिता का सुदर्शन से क्या संबंध है?

Question ID : 16794313524

Ans ✘ 1. भाई

✘ 2. अंकल

✔ 3. पिता

✘ 4. कज़िन

Q.7 Study the following carefully and answer the given question:

Question ID : 16794313523

Which region denotes Actors, who are Signers but not Directors?

Ans ✘ 1. 6

✘ 2. 17

✔ 3. 3

✘ 4. 10

Q.8 A Bus always has:

Question ID : 16794313522

Ans ✘ 1. Hostess

✘ 2. Tv unit

✔ 3. Engine

✘ 4. Air conditioner

Q.9 Find the odd pair of numerals:

Question ID : 16794313529

Ans ✘ 1. 6 : 20

✘ 2. 11 : 35

✘ 3. 18 : 56

✓ 4. 8 : 24

Q.10 You are living in a college hostel. The Dal-Rice served to you in the hostel mess has full of worms and stones. What is the best way to adopt to tackle the situation?

Question ID : 16794313520

Ans

✗ 1. Leave the stones a side and eat rice

✗ 2. Warn the cook about stones in the rice

✗ 3. Buy your own rice to cook

✓ 4.

Bring the matter to the notice of in charge of mess

Q.11 Select the option that is related to the third term in the same way as the

Question ID : 16794313513

second term is related to the first term.

Ans

✗ 1.

✗ 2.

✗ 3.

✓ 4.

Q.12 Find the next figure in the series.

Question ID : 16794313516

Ans

✗ 1.

✓ 2.

✗ 3.

✗ 4.

Q.13

Question ID : 16794313515

Find the next figure in the series.

Ans

✔ 1.

✘ 2.

✘ 3.

✘ 4.

Q.14 If − means ÷, + means ×, ÷ means −, × means +, find the value of 8 × 7 + 25 − 5 ÷ 3?

Question ID : 16794313525

Ans   ✔ 1. 40

✘ 2. 28

✘ 3. 42

✘ 4. 37

Q.15 How the pattern would appear when the transparent sheet is folded at the dotted line.

Question ID : 16794313521

Ans

✘ 1.

✔ 2.

✘ 3.

✘ 4.

Q.16 What will be the missing term in the following series

Question ID : 16794313531

FR, GS, HT, ?

Ans   ✔ 1. IU

✘ 2. YE

✗ 3. GM
✗ 4. PK

Q.17 Select the answer figure in which the question figure is embedded/hidden.

Question ID : 16794313518

Ans

✗ 1.

✗ 2.

✓ 3.

✗ 4.

Q.18 Find the odd pair of words:

Question ID : 16794313528

Ans ✗ 1. Owl : Barn
     ✗ 2. Bird : Nest
     ✓ 3. Mouse : Sty
     ✗ 4. Lion : Den

Q.19 What would be the next term in the series

Question ID : 16794313530

9, 12, 18, 30, 54,?

Ans ✓ 1. 102
     ✗ 2. 108
     ✗ 3. 95
     ✗ 4. 90

Q.20 The following bar chart shows information about NTSE pass out percentage for "XYZ" institute for past years. Read the chart carefully and answer the question

Question ID : 16794313517

The number of NTSE pass outs during 2012-2015.

Ans ✗ 1. 100
     ✓ 2. 200
     ✗ 3. 175
     ✗ 4. 150

Section : General Awareness

Q.1 भारतीय सेना और रॉयल भूटान सेना ने "भारत और भूटान के बीच राजनयिक संबंध स्थापित करने के पचास साल" मनाने के लिए कौन सा अभियान लिया था?

Question ID : 16794313549

Ans

✗ 1. कयाकिंग अभियान

✗ 2. ट्रेकिंग अभियान

✗ 3. मोटरसाइकिल अभियान

✓ 4. सायक्लिंग सह ट्रेकिंग अभियान

Q.2 Which article of the Constitution of India requires the State to provide free and compulsory education to all children of the age of six to fourteen years?

Question ID : 16794313538

Ans

✓ 1. Article 21A

✗ 2. Article 25

✗ 3. Article 14

✗ 4. Article 31 A

Q.3 निम्नलिखित में से किसने टोकन मुद्रा की अवधारणा पेश की जिसमें पीतल और तांबा के सिक्के जारी किए गए थे, जिसका मूल्य सोने और चांदी के बराबर था?

Question ID : 16794313533

Ans

✓ 1. मुहम्मद बिन तुगलक़

✗ 2. अकबर

✗ 3. नादिर शाह

✗ 4. शाहजहाँ

Q.4 भारत-गंगा के बाढ़ के मैदान पर पाए जाने वाले नए एल्यूवियस को _____ कहा जाता है और यह बनावट में बेहद उपजाऊ और बदी है।

Question ID : 16794313536

Ans

✗ 1. रेगुर

✗ 2. भंगार

✗ 3. फेरालिटिक

✓ 4. खादर

Q.5 वेदों में से कौन सा इंद्र की प्रशंसा में लगभग 250 भजन शामिल हैं जिन्हें नष्ट करने वाले शहरों के रूप में वर्णित किया गया है?

Question ID : 16794313534

Ans

✓ 1. ऋग्वेद

✗ 2. अथर्ववेद

✗ 3. सामवेद

✗ 4. यजुर्वेद

Q.6 भारत के संविधान के प्रस्ताव से संकेत मिलता है कि संविधान का स्रोत है:

Question ID : 16794313539

Ans

✗ 1. लोकसभा

✗ 2. भारत के राष्ट्रपति

✗ 3. राज्यसभा

✓ 4. भारत के लोग

Q.7 संविधान के किस हिस्से में नागरिकता से निपटने वाले लेख शामिल हैं?

Question ID : 16794313537

Ans ✔ 1. भाग II

✘ 2. भाग I

✘ 3. भाग VII

✘ 4. भाग IV

Q.8 Which is the universal blood type needed for emergency transfusions?

Question ID : 16794313547

Ans ✘ 1. B positive blood group

✘ 2. AB blood group

✘ 3. A positive blood group

✔ 4. O negative blood group

Q.9 Who started Home Rule League at Poona in 1915-16?

Question ID : 16794313532

Ans ✘ 1. Bhagat Singh

✘ 2. Sardar Vallabh Bhai Patel

✔ 3. Bal Gangadhar Tilak

✘ 4. Annie Besant

Q.10 उत्तरी गोलार्ध में शरद ऋतु विषुव जो गर्मी के अंत और शरद ऋतु की शुरुआत को चिह्नित करता है, किस महीने में होता है?

Question ID : 16794313535

Ans ✘ 1. अगस्त

✘ 2. मार्च

✔ 3. सितंबर

✘ 4. जून

Q.11 एक राष्ट्रीय स्तर पर मान्यता प्राप्त, अच्छी तरह से स्थापित, और वित्तीय रूप से अच्छी कंपनी जो आम तौर पर उच्च गुणवत्ता वाले, व्यापक रूप से स्वीकृत उत्पादों और सेवाओं को बेचती है उसे एक कहा जाता है:

Question ID : 16794313541

Ans ✘ 1. नवरत्न कंपनी

✘ 2. मिनीरत्न कंपनी

✔ 3. ब्लू चिप कंपनी

✘ 4. स्टार कंपनी

Q.12 Where is the famous Meenakshi Amman temple located?

Question ID : 16794313542

Ans ✔ 1. Madurai

✘ 2. Thiruvananthapuram

✘ 3. Tirupati

✘ 4. Mahabalipuram

Q.13 कोकबोरोक निम्नलिखित भाषाओं में से कौन सी बड़ी संख्या में लोगों द्वारा बोली जाने वाली भाषा है?

Question ID : 16794313543

Ans ✔ 1. त्रिपुरा

✘ 2. अरुणाचल प्रदेश

✘ 3. मेघालय

✘ 4. नागालैंड

Q.14 सिक्किम के किस मशहूर मुखौटा ने औपचारिक और उत्सव के अवसरों पर नृत्य प्रदर्शन किया है?

Question ID : 16794313544

Ans   ✔ 1. चाम्स

        ✘ 2. लिम्बू

        ✘ 3. रेचुंग्मा

        ✘ 4. लू खांगथमो

Q.15 Who won the BWF world championship in men's singles category in Nanjing, China, in August 2018?

Question ID : 16794313545

Ans   ✔ 1. Kento Momota

        ✘ 2. Kidambi Srikanth

        ✘ 3. Shi Yuqi

        ✘ 4. Sameer Verma

Q.16 Who is the Founder and Chairman of the World Economic Forum, the International Organization for Public-Private Cooperation?

Question ID : 16794313548

Ans   ✘ 1. Mukhisa Kituyi

        ✘ 2. Roberto Azevedo

        ✘ 3. Guy Ryder

        ✔ 4. Klaus Schwab

Q.17 Which of the following are called 'gilt edged securities'?

Question ID : 16794313540

Ans   ✘ 1. Shares of Public Limited companies

        ✘ 2. Stocks of Mutual Funds

        ✔ 3. Government Securities

        ✘ 4. Shares of Private Limited companies

Q.18 Which city bagged the cleanest city in N-E zone awards in August 2018?

Question ID : 16794313550

Ans   ✘ 1. Dispur, Assam

        ✘ 2. Itanagar, Arunachal Pradesh

        ✔ 3. Kackching, Manipur

        ✘ 4. Gangtok, Sikkim

Q.19 टोक्यो 2020 खेलों में 2020 ओलंपिक सुरक्षा में निम्नलिखित प्रणालियों में से कौन सा उपयोग किया जाएगा?

Question ID : 16794313546

Ans   ✘ 1. फिंगरप्रिंट मान्यता

        ✔ 2. चेहरे की पहचान

        ✘ 3. अंगूठे की पहचान

        ✘ 4. आवाज की पहचान

Q.20 हाल ही में दीन दयाल उपाध्याय जंक्शन के रूप में किस जंक्शन का नाम बदल दिया गया था?

Question ID : 16794313551

Ans   ✔ 1. मुगलसराय जंक्शन

        ✘ 2. पेडापल्ली जंक्शन

        ✘ 3. जोलारपेततई जंक्शन

❌ 4. यशवंतपुर जंक्शन

Section : Arithmetic Ability

Q.1 In an examination, 75% students passed in mathematics and 80% passed in physics. If 14% failed in both subjects, what is the percentage of students who passed in both the subjects?

Question ID : 16794313558

Ans
✔ 1. 69%

❌ 2. 63%

❌ 3. 51%

❌ 4. 71%

Q.2 A car starts from a place with a speed of 50 km/h. After 90 minutes, another car starts in the same direction with a speed of 70 km/h. After how many hours will the second car overtake the first car?

Question ID : 16794313565

Ans
✔ 1. $3\frac{3}{4}$

❌ 2. $3\frac{2}{5}$

❌ 3. $3\frac{2}{3}$

❌ 4. $3\frac{1}{4}$

Q.3 A sum of money becomes 140% of itself in 5 years. In how many years it will double itself at the same rate of simple interest?

Question ID : 16794313561

Ans
❌ 1. 10

✔ 2. $\frac{25}{2}$

❌ 3. 15

❌ 4. $\frac{21}{2}$

Q.4 The HCF of two numbers is 24. If sum of the numbers is 480, how many such pairs of numbers are possible?

Question ID : 16794313554

Ans
❌ 1. 2

❌ 2. 5

✔ 3. 4

❌ 4. 3

Q.5 A boat can go 15 km upstream and 21 km downstream in 3 hours. It can go 25 km upstream and 7 km downstream in 3 hours. What is the speed of stream in km/h?

Question ID : 16794313566

Ans
❌ 1. 4

❌ 2. 3

❌ 3. 5

✔ 4. 2

Q.6 The value of $\dfrac{(1.5)^3+(4.6)^3+(3.9)^3-4.5\times4.6\times3.9}{(15)^2+(46)^2+(39)^2-15\times46-46\times39-39\times15}$ is equal to:

Question ID : 16794313553

Ans
❌ 1. 10

✔ 2. 0.1

❌ 3. 0.01

❌ 4. 1

Q.7 If $2a = 3b = 7c$, then $\frac{1}{a}:\frac{1}{b}:\frac{1}{c}$ is equal to:

Question ID : 16794313557

Ans

1. ✗ 7 : 3 : 2
2. ✗ 2 : 7 : 3
3. ✓ 2 : 3 : 7
4. ✗ 3 : 2 : 7

Q.8 The product of mean proportion and third proportion between 6 and 24 is:

Question ID : 16794313556

Ans
1. ✗ 24
2. ✗ 18
3. ✗ $24\sqrt{2}$
4. ✓ 1152

Q.9 The value of $1 - 1\frac{2}{9}\ of\ 3\frac{3}{11} \div 5\frac{1}{7}\ of\ \frac{7}{9} - \frac{5}{18}\ of\ 24$ is equal to:

Question ID : 16794313552

Ans
1. ✗ $\frac{20}{3}$
2. ✗ $-\frac{11}{3}$
3. ✓ $-\frac{20}{3}$
4. ✗ 0

Q.10 A man spends 75% of his income. His income is increased by 40% and he increased his expenditure by 24%. His savings are increased by:

Question ID : 16794313559

Ans
1. ✗ 72%
2. ✗ 64%
3. ✓ 88%
4. ✗ 58%

Q.11 The cost price of an article A is 25% more than the cost price of article B. The article B is sold for ₹ 1440 at a loss of 10%. At what price should A be sold to make an overall profit of 20%?

Question ID : 16794313560

Ans
1. ✗ ₹ 2400
2. ✗ ₹ 2580
3. ✗ ₹ 2720
4. ✓ ₹ 2880

Q.12 The efficiencies of A, B and C are in the ratio 2 : 3 : 4. They together can complete a piece of work in 24 hours. In how many hours B alone can complete 150% of that work?

Question ID : 16794313567

Ans
1. ✗ 54
2. ✓ 108
3. ✗ 72
4. ✗ 90

Q.13 The diameters and heights of two cylinders are in the ratio 3 : 4 and 5 : 6 respectively. What is the ratio of their corresponding volumes?

Question ID : 16794313564

Ans
1. ✓ 15 : 32
2. ✗ 2 : 5
3. ✗ 3 : 8
4. ✗ 5 : 8

Q.14 Three numbers are in the ratio 4 : 6 : 9. If their LCM is 648, what is their HCF?

Question ID : 16794313555

Ans
1. ✗ 9
2. ✗ 4

   ✗ 3. 6
   ✔ 4. 18

Q.15 Two pipes A and B can fill a tank in 4 hours and 6 hours respectively, whereas pipe C can empty the full tank in 3 hours. When the tank is empty, pipe C is opened. In how many hours the tank will be filled after the pipe C was opened?

Question ID : 16794313568

Ans
   ✗ 1. $2\frac{1}{2}$

   ✗ 2. 3

   ✔ 3. 2

   ✗ 4. $1\frac{1}{2}$

Q.16 What will be the amount on ₹ 8000 for 3 years, if the rate of interest for first year is 4% per annum and increases every year by 50% (rounded off to nearest integer)?

Question ID : 16794313562

Ans
   ✔ 1. ₹ 9613

   ✗ 2. ₹ 9878

   ✗ 3. ₹ 10064

   ✗ 4. ₹ 10423

Q.17 The sides of a triangle are 13 cm, 14 cm and 15 cm. What is the altitude corresponding to the largest side (correct to one decimal place)?

Question ID : 16794313563

Ans
   ✗ 1. 15.4 cm

   ✔ 2. 11.2 cm

   ✗ 3. 12.9 cm

   ✗ 4. 12.0 cm

Comprehension:

Study the table below about the number of students from various schools playing various games. Answer the following three questions.

	Schools				
Games	A	B	C	D	E
Cricket	120	180	90	125	150
Basket ball	80	70	60	90	50
Foot ball	40	65	55	70	35
Hockey	90	55	45	85	65
Badminton	50	40	60	50	30

SubQuestion No : 18

Q.18 The number of students who play Cricket from school A is what percentage of total students from all schools who play Cricket (correct to one decimal place)?

Question ID : 16794313570

Ans
   ✗ 1. 18.4%

   ✗ 2. 18.2%

✔ 3. 18.0%

✘ 4. 18.3%

Comprehension:

Study the table below about the number of students from various schools playing various games. Answer the following three questions.

	Schools				
Games	A	B	C	D	E
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Hockey	90	55	45	85	65
Badminton	50	40	60	50	30

SubQuestion No : 19

Q.19 What is the ratio of total number of students who play Hockey to the total number of students who play Badminton from all schools?

Question ID : 16794313571

Ans ✘ 1. 25 : 27

✘ 2. 27 : 32

✔ 3. 34 : 23

✘ 4. 33 : 25

Comprehension:

Study the table below about the number of students from various schools playing various games. Answer the following three questions.

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Games	A	B	C	D	E
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Foot ball	40	65	55	70	35
Hockey	90	55	45	85	65
Badminton	50	40	60	50	30

SubQuestion No : 20

Q.2
0
What is the percentage of total number of players playing Basketball or Football (correct to one decimal point)?

Question ID : 16794313572

Ans
✗ 1. 33.5%

✗ 2. 33.3%

✗ 3. 32.8%

✔ 4. 33.2%

Section : General English

Q.1 Identify the part of the sentence that has an error in it.

Question ID : 16794313577

There has been   several complaints   about her   behaviour in class.
     A   B   C   D

Ans
✔ 1. A

✗ 2. C

✗ 3. B

✗ 4. D

Q.2 Choose the incorrect statement from the following sentences.

Question ID : 16794313581

Ans
✔ 1.

They ought not be allowed to park their vehicles here.

✗ 2.

There ought to be more police petrol at nights in the city.

✗ 3.

Ought we to be more worried about the pollution?

✗ 4.

You ought not to have spoken to your father like that

Q.3 Identify the part of the sentence that has an error in it.

Question ID : 16794313574

You are   the most unique person   I have   ever met.
   A   B   C   D

Ans
✗ 1. C

✗ 2. A

✗ 3. D

✔ 4. B

Q.4 Fill in the blanks with the most suitable option.

Question ID : 16794313584

The second part of the book was not very interesting, but, _____ all of the mystery.

Ans
✗ 1.

At the end of the book lie the hints that forces us to read the third part of the book which reveal

✗ 2.

At the end of the book lies the hints that forces us to read the third parts of the book that reveals

✗ 3.

At the end of the book lies the hints that force us to read the third part of the book that reveal

✔ 4.

At the end of the book lie the hints that force us to read the third part of the book which reveals

Q.5 Fill in the blanks with the most appropriate answer from below:

Question ID : 16794313580

She asked me if I _____ her notebook _____.

Ans ✔ 1. Had seen, anywhere

  ✘ 2. Had seen, somewhere

  ✘ 3. Saw, somewhere

  ✘ 4. Have seen, nowhere

Q.6 Fill in the blanks with the most suitable option from below:

Question ID : 16794313582

Is it always the brightest students who _____ successful in life?

Ans ✔ 1. become

  ✘ 2. became

  ✘ 3. are becoming

  ✘ 4. becomes

Q.7 Fill in the blanks with the most appropriate answer from below:

Question ID : 16794313578

"You are not planning to attend the wedding. _____" She exclaimed.

Ans ✔ 1. Are you?

  ✘ 2. Aren't you?

  ✘ 3. Wasn't it?

  ✘ 4. Isn't it?

Q.8 Fill in the blanks with the most appropriate answer from below:

Question ID : 16794313579

She does think he walks on water _____?

Ans ✘ 1. Did she?

  ✔ 2. Doesn't she?

  ✘ 3. Didn't she?

  ✘ 4. Does she?

Q.9 Ten days _____ not nearly enough time to complete the entire syllabus even though they _____ believe it is possible.

Question ID : 16794313585

Ans ✘ 1. are, seems

  ✘ 2. are, seem

  ✔ 3. is, seem

  ✘ 4. is, seems

Q.10 Choose the correct statement from the options given below:

Question ID : 16794313586

Ans ✘ 1.
Neither the members of the audience nor the orchestras know what happened to the manager of the auditorium after the programme.

  ✘ 2.
Neither the members of the audiences nor the orchestra knows what happened to the auditorium manager after the programme.

  ✔ 3.
Neither the members of the audience nor the orchestra knows what happened to the manager of the auditorium after the programme.

  ✘ 4.
Neither the audience nor the orchestra know what happened to the manager of the auditorium after the programme.

Q.11 Choose the correct statement from the given options.

Question ID : 16794313583

Ans   ✗ 1.

In the farming sector, there are no new companies investing at the moment, which is difficult for farmers to continue in this field.

✗ 2.

In the farming sector, at the moment there are no new companies investing, which makes it difficult for we farmers, to continue in this field.

✗ 3.

In the farming sector at the moment, there are no new companies investing which make it difficult for we farmers to continue in this field.

✔ 4.

In the farming sector, there are no new companies investing at the moment, a fact that makes it difficult for us farmers to continue in this field.

Q.12   Identify the part of the sentence that has an error in it.

Question ID : 16794313576

One main criteria   for selection of   candidates is   their English proficiency.
     A   B   C   D

Ans   ✗ 1. B
       ✗ 2. D
       ✗ 3. C
       ✔ 4. A

Q.13   Fill in the blanks with the most suitable answer.

Question ID : 16794313587

Out of all my gifts, the book _____ was written by your favourite author in _____ the main character dies is the one I like the most.

Ans   ✔ 1. that, which

       ✗ 2. which, what

       ✗ 3. that, that

       ✗ 4. which, which

Q.14   Identify the part of the sentence that has an error in it.

Question ID : 16794313575

Bring the medicine to your sister right now.
  A   B   C   D

Ans   ✗ 1. B
       ✗ 2. D
       ✗ 3. C
       ✔ 4. A

Q.15   Identify the part of the sentence that has an error in it.

Question ID : 16794313573

They cannot   leave the office   without   a special permission.
    A   B   C   D

Ans   ✗ 1. A
       ✗ 2. B
       ✗ 3. C
       ✔ 4. D

Comprehension:

Reading Passage: A Point of View: In defence of obscure words
By Will Self, BBC

We are living in a risk-averse culture - there's no doubt about that.

But the risk that people seem most reluctant taking is not a
physical but a mental one: just as the concrete in children's
playgrounds has been covered with rubber, so the hard truth

about the effort needed for intellectual attainment is being softened by a sort of semantic padding.

Both general readers and specialist critics often complain about my own use of English - not only in my books, but also in my newspaper articles and even in radio talks such as these. In over twenty years of publishing fiction and journalism, I've become pretty much inured to these slings and arrows, regarding them as par for the anti-intellectual course. I used to remonstrate with those who raised the S-word (S being for sesquipedalian, an obscure word that means 'a lover of obscure words).

I'd point out that my texts were as full of resolutely Anglo-Saxon slang as they were the flowery and the Latinate. I'd observe that English, being a mishmash of several different languages, had a large and exciting vocabulary, and that it seemed a shame not to use it - especially given that it went on growing all the time, spawning argot and specialist terminology as freely as an oyster does its milt.

In the literary world, books intended for child readers are repackaged and sold to kidult ones, while even notionally highbrow arbiters - such as Booker judges - are obsessed by that nauseous confection "a jolly good read". That Shakespeare remains our national writer is, frankly, bizarre, given that with his recondite vocabulary, myriad historical references, and convoluted metaphorical language, were he to be seeking publication in the current milieu, his sonnets and plays would undoubtedly also be branded as 'too difficult'.

But the most disturbing result of this retreat from the difficult is to be found in arts and humanities education, where the traditional set texts are now chopped up into boneless nuggets of McKnowledge, and students are encouraged to do their research - such as it is - on the web.

In place of the difficulty involved in seeking out the literary canon, younger people are coming to rely on search engines to do their thinking for them. The end result of this will be a standardisation of understanding itself, as people become unable to think outside of the box-shaped screen.

The nadir came for me when my daughter - who had been assigned Great Expectations as a GCSE text - was told the novel's ending by her English teacher, on the grounds that, having read the little gobbets served up for interpretation, according to her pedagogue there was no necessity for her to try and choke down the whole indigestible meal.

My figures of food are entirely fitting, because we are in danger of becoming morbidly obese through the consumption of such fast culture. The contrast with sport is instructive: in both realms of human endeavour, the consumers are largely passive, but at least sports fans - unlike cultural ones - don't protest against elite athletes, or bar them from competing on the grounds that they are too fast, too strong, or too limber.

On the contrary, we are repeatedly told by the likes of Sebastian Coe that athletes capable of the most difficult feats offer vital inspiration to couch-potato kids. Let the same be the case for mental athletics, because without the bar to jump over set high, we'll all end up simply playing in the sandpit.

SubQuestion No : 16

Q.16 Match the words in column A with the most suitable meanings from column B

Question ID : 16794313591

Column A	Column B
i) nadir	a) argue
ii) recondite	b) setting
iii) argot	c) obscure
iv) remonstrate	d) standard
v) canon	e) lowest point
vi) milieu	f) jargon

Ans

✗ 1.
i) f   ii) d   iii) c   iv) e   v) b   vi) a

✗ 2. i) d   ii) f   iii) a   iv) c   v) b   vi) e

✗ 3. i) b   ii) a   iii) e   iv) d   v) f   vi) c

✓ 4. i) e   ii) c   iii) f   iv) a   v) d   vi) b

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The nadir came for me when my daughter - who had been assigned Great Expectations as a GCSE text - was told the novel's ending by her English teacher, on the grounds that, having read the little gobbets served up for interpretation, according to her pedagogue there was no necessity for her to try and choke down the whole indigestible meal.

My figures of food are entirely fitting, because we are in danger of becoming morbidly obese through the consumption of such fast culture. The contrast with sport is instructive: in both realms of human endeavour, the consumers are largely passive, but at least sports fans - unlike cultural ones - don't protest against elite athletes, or bar them from competing on the grounds that they are too fast, too strong, or too limber.

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mental athletics, because without the bar to jump over set high, we'll all end up simply playing in the sandpit.

SubQuestion No : 17

Q.17   The passage is taken from:

Ans   ✗ 1. An article from a magazine

       ✔ 2. The transcript from a radio broadcast

       ✗ 3. An article from a column

       ✗ 4. An excerpt from a book

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SubQuestion No : 18

Q.18   The most important idea of the passage is that.

Question ID : 16794313589

Ans   ✔ 1.

Literary works or arts with difficult content are good for us because it inspires a higher level of intellectual attainment.

✘ 2.

It is important to defend the use of difficult or obscure words as it improves our vocabulary.

✘ 3.

We are living in a risk-averse culture, which expects everything to be easy and not difficult.

✘ 4.

The consumption of 'fast culture' is dangerous for
our society as it permeates the fields of arts, sports
and academics.

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SubQuestion No : 19

Q.1
9

Based on the passage, choose the statement that is not true.

Question ID : 16794313593

An
s

✖ 1.

Will Self's daughter is discouraged from reading the novel 'Great Expectations' by her English teacher.

✖ 2.

The passage uses metaphors and allusions to junk food to foreground the dangers of 'fast culture.'

✔ 3.

If Shakespeare were living today, the literary world would highly appreciate and honour his works.

✖ 4.

The Anglo-Saxon and Latin roots of English language vocabulary regularly lends itself to creation of new words.

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playgrounds has been covered with rubber, so the hard truth about the effort needed for intellectual attainment is being softened by a sort of semantic padding.

Both general readers and specialist critics often complain about my own use of English - not only in my books, but also in my newspaper articles and even in radio talks such as these. In over twenty years of publishing fiction and journalism, I've become pretty much inured to these slings and arrows, regarding them as par for the anti-intellectual course. I used to remonstrate with those who raised the S-word (S being for sesquipedalian, an obscure word that means 'a lover of obscure words).

I'd point out that my texts were as full of resolutely Anglo-Saxon slang as they were the flowery and the Latinate. I'd observe that English, being a mishmash of several different languages, had a large and exciting vocabulary, and that it seemed a shame not to use it - especially given that it went on growing all the time, spawning argot and specialist terminology as freely as an oyster does its milt.

In the literary world, books intended for child readers are repackaged and sold to kidult ones, while even notionally highbrow arbiters - such as Booker judges - are obsessed by that nauseous confection "a jolly good read". That Shakespeare remains our national writer is, frankly, bizarre, given that with his recondite vocabulary, myriad historical references, and convoluted metaphorical language, were he to be seeking publication in the current milieu, his sonnets and plays would undoubtedly also be branded as 'too difficult'.

But the most disturbing result of this retreat from the difficult is to be found in arts and humanities education, where the traditional set texts are now chopped up into boneless nuggets of McKnowledge, and students are encouraged to do their research - such as it is - on the web.

In place of the difficulty involved in seeking out the literary canon, younger people are coming to rely on search engines to do their thinking for them. The end result of this will be a standardisation of understanding itself, as people become unable to think outside of the box-shaped screen.

The nadir came for me when my daughter - who had been assigned Great Expectations as a GCSE text - was told the novel's ending by her English teacher, on the grounds that, having read the little gobbets served up for interpretation, according to her pedagogue there was no necessity for her to try and choke down the whole indigestible meal.

My figures of food are entirely fitting, because we are in danger of becoming morbidly obese through the consumption of such fast culture. The contrast with sport is instructive: in both realms of human endeavour, the consumers are largely passive, but at least sports fans - unlike cultural ones - don't protest against elite athletes, or bar them from competing on the grounds that they are too fast, too strong, or too limber.

On the contrary, we are repeatedly told by the likes of Sebastian Coe that athletes capable of the most difficult feats offer vital inspiration to couch-potato kids. Let the same be the case for mental athletics, because without the bar to jump over set high, we'll all end up simply playing in the sandpit.

SubQuestion No : 20

Q.20 Choose the most appropriate meaning of "par for the anti-intellectual course" based on your reading of the passage.

Question ID : 16794313590
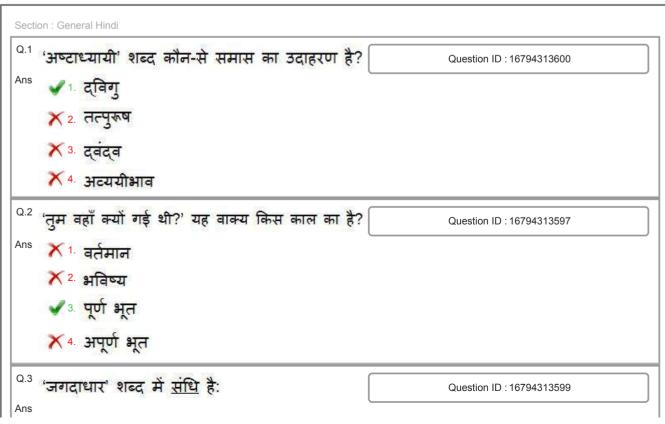
Ans ✔ 1.
Expected behaviour from someone who supports anti-intellectualism

✘ 2.
Something that exists to prevent anti-intellectualism

✘ 3. Something or someone in support of anti-intellectualism

✘ 4. Criticism from close quarters

Section : General Hindi

Q.1 'अष्टाध्यायी' शब्द कौन-से समास का उदाहरण है?

Question ID : 16794313600

Ans ✔ 1. द्विगु

✘ 2. तत्पुरूष

✘ 3. द्वंद्व

✘ 4. अव्ययीभाव

Q.2 'तुम वहाँ क्यों गई थी?' यह वाक्य किस काल का है?

Question ID : 16794313597

Ans ✘ 1. वर्तमान

✘ 2. भविष्य

✔ 3. पूर्ण भूत

✘ 4. अपूर्ण भूत

Q.3 'जगदाधार' शब्द में संधि है:

Question ID : 16794313599

Ans

✗ 1. अयादी

✓ 2. व्यंजन

✗ 3. स्वर

✗ 4. विसर्ग

Q.4 'माया को माया मिले कर-कर लंबे हाथ' यह लोकोक्ति अर्थ देती है:

Ans

Question ID : 16794313612

✗ 1. रुपया ही सब कुछ है

✗ 2. धीरे किया गया कार्य अच्छा होता है

✓ 3. धनी व्यक्ति को और धन मिलना

✗ 4. देखने में सज्जन हृदय में कपट

Q.5 'मैं गया तो था मगर वहाँ कुछ नहीं मिला।' वाक्य में समुच्चयबोधक पद है:

Ans

Question ID : 16794313613

✓ 1. मगर

✗ 2. वहाँ

✗ 3. मैं गया तो था

✗ 4. कुछ नहीं मिला

Q.6 'परिवर्तन' शब्द में उपसर्ग है:

Ans

Question ID : 16794313601

✗ 1. परी

✓ 2. परि

✗ 3. प्र

✗ 4. पर

Q.7 तत्सम शब्द कौन-सा है?

Ans

Question ID : 16794313604

✗ 1. मकान

✗ 2. कीड़ा

✗ 3. जगह

✓ 4. प्रभाव

Q.8 'इच्छा' शब्द का विलोम होता है:

Ans

Question ID : 16794313607

✓ 1. अनिच्छा

✗ 2. आकांक्षा

✗ 3. चाहत

✗ 4. ऐच्छिक

Q.9 'हेमा को घर जाना है।' वाक्य में कौन-सा कारक है?

Ans

Question ID : 16794313598

✓ 1. कर्ता

✗ 2. कर्म

✗ 3. सम्प्रदान

❌ 4. करण

Q.10 'कंचन' शब्द में अनुस्वार की जगह कौन-सा व्यंजन आएगा?

Question ID : 16794313594

Ans　✅ 1. ञ्

　　　❌ 2. ण्

　　　❌ 3. न

　　　❌ 4. ड़

Q.11 तद्भव शब्द कौन-सा है?

Question ID : 16794313605

Ans　❌ 1. मित्र

　　　❌ 2. योग

　　　❌ 3. पुत्र

　　　✅ 4. सूखा

Q.12 'जो मारने योग्य न हो'। वाक्यांश के लिए एक शब्द है:

Question ID : 16794313606

Ans　❌ 1. निष्प्राण

　　　❌ 2. गंतव्य

　　　❌ 3. वध

　　　✅ 4. अवध्य

Q.13 'वह अभी-अभी सोया है।' वाक्य की रेखांकित क्रिया है:

Question ID : 16794313610

Ans　❌ 1. द्विकर्मक

　　　❌ 2. प्रेरणार्थक

　　　✅ 3. अकर्मक

　　　❌ 4. सकर्मक

Q.14 'फल' शब्द का बहुवचन (अविभक्तिक) होगा:

Question ID : 16794313609

Ans　❌ 1. फलें

　　　❌ 2. फलों

　　　✅ 3. फल

　　　❌ 4. फलाँ

Q.15 'शोभा' का पर्याय नहीं है:

Question ID : 16794313608

Ans　✅ 1. सुंदर

　　　❌ 2. कान्ति

　　　❌ 3. विभा

　　　❌ 4. आना

Q.16 'यश प्राप्त करना।' इस अर्थ को व्यक्त करने वाला मुहावरा है:

Question ID : 16794313611

Ans　❌ 1. पसीना बहाना

✔ 2. नाम कमाना

✘ 3. पराई आग में कूदना

✘ 4. दिन-रात एक करना

Q.17 कौन-सा शब्द विशेषण है?

Question ID : 16794313603

Ans ✘ 1. अंत

✘ 2. पर्यन्त

✔ 3. अंतिम

✘ 4. अन्य

Q.18 'कुम्हार' शब्द में प्रत्यय है:

Question ID : 16794313602

Ans ✔ 1. आर

✘ 2. अ

✘ 3. अर

✘ 4. र

Q.19 अशुद्ध शब्द कौन-सा है?

Question ID : 16794313596

Ans ✘ 1. संन्यासी

✘ 2. साहस

✘ 3. साप्ताहिक

✔ 4. निरपराधी

Q.20 'दन्त्य' व्यंजन कौन-से वर्ग में है?

Question ID : 16794313595

Ans ✘ 1. ल श क

✘ 2. ह र द

✔ 3. न भ ञ

✘ 4. प ज ढ

Section : Subject Related

Q.1 Solve the equation $x^3 - 13x^2 + 15x + 189 = 0$, being given that one of the roots exceeds another by 2

Question ID : 16794313632

Ans ✘ 1. $(3, -7, -9)$

✔ 2. $(-3, 7, 9)$

✘ 3. $(3, 7, 9)$

✘ 4. $(-3, -7, -9)$

Q.2 किन्हीं दो परिमेय संख्याओं के बीच एक और परिमेय संख्या होती है- इसे कहा जाता है

Question ID : 16794313614

Ans ✘ 1. आर्किमिडीयन गुण

✘ 2. असमानता (विषमता)

✔ 3. घनत्व गुण

✗ 4. मध्य - मान गुण

Q.3 Which of the following sets of vectors in R^3 are linearly independent:

Question ID : 16794313625

1. $[(1,0,0),(0,1,0),(1,1,0)]$

2. $[(1,0,0),(0,1,0),(0,0,1)]$

3. $[(0,1,0),(1,0,1),(1,1,0)]$

4. $[(0,0,1),(0,1,0),(0,1,1)]$

Ans   ✗ 1. 1 and 2

✓ 2. 2 and 3

✗ 3. 1 and 4

✗ 4. 3 and 4

Q.4 H.C. F of 143 and 481 is 143m+481n, then m, n are equal to:

Question ID : 16794313615

Ans   ✗ 1. -9, 3

✗ 2. -8, 3

✓ 3. -10, 3

✗ 4. -7, 3

Q.5 By what number $\frac{2}{3}^{-6}$ be divided that the quotient is equals to $\frac{3}{2}^{-6}$

Question ID : 16794313618

Ans   ✓ 1. $\left(\frac{3}{2}\right)^{6}$

✗ 2. $\left(\frac{2}{3}\right)^{6}$

✗ 3. $\left(\frac{2}{3}\right)^{12}$

✗ 4. $\left(\frac{3}{2}\right)^{12}$

Q.6 The rank of the matrix $\begin{bmatrix} 1 & 1 & 1 \\ a & b & c \\ a^2 & b^2 & c^2 \end{bmatrix}$ where $a = b \neq c$ is:

Question ID : 16794313628

Ans   ✗ 1. 0

✗ 2. 1

✓ 3. 2

✗ 4. 3

Q.7 The following simultaneous equations:

Question ID : 16794313629

$x + y + z = 3$

$x + 2y + 3z = 4$

$x + 4y + kz = 6$

Will not have a unique solution for k equal to:

Ans ✓ 1. 7
    ✗ 2. 6
    ✗ 3. 0
    ✗ 4. 5

Q.8 The equations $2x^3 + 5x^2 - 6x - 9 = 0$ and $3x^3 + 7x^2 - 11x - 15 = 0$ have two common roots find them:

Question ID : 16794313630

Ans ✓ 1. $(-1, -3)$

    ✗ 2. $\left(1, \dfrac{3}{2}\right)$

    ✗ 3. $(1, -3)$

    ✗ 4. $\left(-1, \dfrac{-3}{2}\right)$

Q.9

For every positive integer n, $n^7 + \dfrac{n^5}{5} + \dfrac{2n^3}{3} - \dfrac{n}{105}$ is:

Question ID : 16794313623

Ans ✗ 1. An odd integer

    ✗ 2. An integer

    ✗ 3. A negative real number

    ✓ 4. A rational number

Q.10 The number of factors and their sum of 360 are :

Question ID : 16794313624

Ans ✗ 1. 12, 540

    ✗ 2. 24, 1080

    ✓ 3. 24, 1170

    ✗ 4. 12, 810

Q.11 Find the sum of the cubes of the roots of the equation $x^3 - 6x^2 + 11x - 6 = 0$

Question ID : 16794313631

Ans ✗ 1. 31

    ✗ 2. 32

    ✗ 3. 35

    ✓ 4. 36

Q.12 A quadratic polynomial in x leaves remainder 4, 4 and 0 respectively. When divided by $(x-1), (x-2)$ and $x-3$. Find its quadratic polynomial:

Question ID : 16794313633

Ans ✗ 1. $-2x^2 + 6x + 5$

    ✓ 2. $-2x^2 + 6x$

    ✗ 3. $-2x^2 + 6x - 5$

    ✗ 4. $-2x^2 + 6x + 3$

Q.13 If a is a whole number and p is a prime number then according to Fermat's theorem:

Question ID : 16794313621

Ans ✗ 1. $2^{p-1} - 2$ is divisible by p

    ✗ 2. $2^p - 1$ is divisible by p

    ✗ 3. $2^p - 2$ is not divisible by p

    ✓ 4. $2^p - 2$ is divisible by p

Q.14 If $a = \frac{1}{3-2\sqrt{2}}$, $b = \frac{1}{3+2\sqrt{2}}$ then the value of $a^2 + b^2$ is:

Question ID : 16794313617

Ans
- ✗ 1. 36
- ✗ 2. 37
- ✔ 3. 34
- ✗ 4. 35

Q.15 If the set of all triplets (x_1, x_2, x_3) of real number R form a vector space V_3 then a subspace denoted by a vertical plane y=x can be obtained by a linear combination of sets:

Question ID : 16794313627

Ans
- ✔ 1. (1, 1, 0) and (0, 0, 1)
- ✗ 2. (1, 0, 1) and (0, 0, 1)
- ✗ 3. (1, 0, 0) and (0, 1, 0)
- ✗ 4. (1, 1, 0) and (1, 0, 0)

Q.16 If φ is the Euler's Totieut function , then $\varphi(92)$ is:

Question ID : 16794313619

Ans
- ✔ 1. 44
- ✗ 2. 46
- ✗ 3. 48
- ✗ 4. 42

Q.17 The number of ways in which 39312 can be resolved into two factors which are prime to each other are:

Question ID : 16794313620

Ans
- ✗ 1. 6
- ✗ 2. 10
- ✔ 3. 8
- ✗ 4. 4

Q.18 Which of the following is false?

Question ID : 16794313616

Ans
- ✗ 1. $\sqrt{2}$ is a rational number
- ✗ 2. Every irrational number is a real number
- ✗ 3. Every integer is a real number
- ✔ 4. Every rational number is a real number

Q.19 Apply Chinese Remainder Theorem to solve

X = 3 (mod 5), X=5 (mod7). The common solution is:

Question ID : 16794313622

Ans
- ✔ 1. X = 33 (mod 35)
- ✗ 2. X = 31 (mod 5)
- ✗ 3. X = 27 (mod 35)
- ✗ 4. X = 28 (mod 35)

Q.20 Which of the following set is the basis for the subspace $W = \left\{ \begin{bmatrix} x & y \\ 0 & t \end{bmatrix} : X + 2y + t = 0, y + t = 0 \right\}$

Question ID : 16794313626

Ans
- ✗ 1. $\left\{ \begin{bmatrix} -1 & 1 \\ 2 & -1 \end{bmatrix} \right\}$
- ✔ 2. $\left\{ \begin{bmatrix} 1 & -1 \\ 0 & 1 \end{bmatrix} \right\}$

✗ 3. $\left\{ \begin{bmatrix} 1 & 0 \\ 0 & 0 \end{bmatrix}, \begin{bmatrix} 0 & 1 \\ 0 & 0 \end{bmatrix}, \begin{bmatrix} 0 & 0 \\ 0 & 1 \end{bmatrix} \right\}$

✗ 4. $\left\{ \begin{bmatrix} 2 & 1 \\ 0 & -1 \end{bmatrix}, \begin{bmatrix} 1 & -1 \\ 0 & 1 \end{bmatrix} \right\}$

Section : Subject Related

Q.1 The sum of the first 20 terms of an arithmetic progression whose first term is 5 and common difference is 4 is - - - - :

Question ID : 16794313648

Ans ✗ 1. 830

✗ 2. 850

✗ 3. 820

✔ 4. 860

Q.2 If α and β are the roots of the equation $x^2 - 12x + 32 = 0$ then the value of $\frac{\alpha^2 + \beta^2}{\alpha + \beta}$ is:

Question ID : 16794313641

Ans ✗ 1. $\frac{8}{3}$

✗ 2. $-\frac{8}{3}$

✗ 3. $-\frac{20}{3}$

✔ 4. $\frac{20}{3}$

Q.3 If $a_1 x + b_1 y + c_1 = 0$ and $a_2 x + b_2 y + c_2 = 0$ have infinite number of solutions, then which one of the following is correct:

Question ID : 16794313639

Ans ✗ 1. $\frac{a_1}{a_2} \neq \frac{b_1}{b_2} \neq \frac{c_1}{c_2}$

✗ 2. $\frac{a_1}{a_2} = \frac{b_1}{b_2} \neq \frac{c_1}{c_2}$

✗ 3. $\frac{a_1}{a_2} \neq \frac{b_1}{b_2} = \frac{c_1}{c_2}$

✔ 4. $\frac{a_1}{a_2} = \frac{b_1}{b_2} = \frac{c_1}{c_2}$

Q.4 If $a^2 + b^2 + c^2 = 1$ then $ab + bc + ca$ lies in the interval:

Question ID : 16794313652

Ans ✗ 1. $\left[\frac{1}{2}, 1 \right]$

✗ 2. $\left[-1, \frac{1}{2} \right]$

✔ 3. $\left[-\frac{1}{2}, 1 \right]$

✗ 4. $\left[0, \frac{1}{2} \right]$

Q.5 If $(a - b)$ and $(b - c)$ are the roots of $ax^2 + bx + c = 0$ then the value of $\frac{(a-b)(b-c)}{c-a}$ is:

Question ID : 16794313645

Ans ✔ 1. $\frac{c}{b}$

✗ 2. $\frac{b}{c}$

✗ 3. $\frac{bc}{a}$

Q.6

$(a + b + c)\left(\frac{1}{a} + \frac{1}{b} + \frac{1}{c}\right)$ is:

Question ID : 16794313653

Ans ✗ 1. Less than or equal to 9

✗ 2. Less than or equal to 3

✔ 3. Greater than or equal to 9

✗ 4. Greater than or equal to 3

Q.7 If an ordered pair satisfying the equations $2x - 3y = 18$ and $4x - y = 16$ also satisfying the equation $5x - py - 23 = 0$, then find the value of p:

Question ID : 16794313638

Ans ✗ 1. -1

✗ 2. 1

✔ 3. 2

✗ 4. -2

Q.8 If the sum of 16 terms of an A.P. is 1624 and the first term is 500 times the common difference, then find the common difference:

Question ID : 16794313650

Ans ✗ 1. 2

✔ 2. $\frac{1}{5}$

✗ 3. $\frac{1}{2}$

✗ 4. 5

Q.9 If one root of the equation $x^2 + px + 12 = 0$ is 4, while the equation $x^2 + px + q = 0$ has equal roots, then the value of q is:

Question ID : 16794313644

Ans ✗ 1. 4

✗ 2. 12

✗ 3. 3

✔ 4. $\frac{49}{4}$

Q.10 If $\alpha + \beta + \gamma = 5$, $\alpha\beta + \beta\gamma + \gamma\alpha = 7$ and $\alpha\beta\gamma = 3$, then the equation where roots are α, β and γ is:

Question ID : 16794313634

Ans ✗ 1. $x^3 - 7 = 0$

✔ 2. $x^3 - 5x^2 + 7x - 3 = 0$

✗ 3. $x^3 + 7x^2 - 3 = 0$

✗ 4. $x^2 + 7x^2 + 3 = 0$

Q.11 The general term of A.P. whose sum of n terms is given by $4n^2 + 3n$, is:

Question ID : 16794313651

Ans ✗ 1. $8n + 1$

✗ 2. $6n - 2$

✗ 3. $6n + 2$

✔ 4. $8n - 1$

Q.12 If one of the roots of quadratic equation having rational coefficients is $\sqrt{7} - 4$, then the quadratic equation is:

Question ID : 16794313642

Ans ✔ 1. $x^2 - 2\sqrt{7}x - 9 = 0$

✗ 2. $x^2 - 8x + 9 = 0$

✗ 3. $x^2 + 8x + 9 = 0$

✗ 4. $x^2 - 2\sqrt{7}x + 9 = 0$

Q.13 If the polynomial $2x^4 + kn^3 - 75k$ is divided by x the remainder is 150 , then the value of k will be:

Ans   ✗ 1. 2

       ✗ 2. -1

       ✔ 3. -2

       ✗ 4. 1

Question ID : 16794313635

Q.14 If the quadratic equation $(a^2 - b^2)x^2 + (b^2 - c^2)x + c^2 - a^2 = 0$ has equal roots, then which of the following is true:

Ans   ✗ 1. $b^2 = c^2 + 2a^2$

       ✔ 2. $b^2 + c^2 = 2a^2$

       ✗ 3. $b^2 - c^2 = 2a^2$

       ✗ 4. $b^2 + c^2 = a^2$

Question ID : 16794313646

Q.15 Mukesh has some cows and some hens in the shed. The total number of legs is 92 and total number of heads is 29. Find the total number of cows in shed:

Ans   ✗ 1. 19

       ✔ 2. 17

       ✗ 3. 14

       ✗ 4. 12

Question ID : 16794313640

Q.16 The nature of the roots of the equation $4x^2 - 2x - 3 = 0$.

Ans   ✗ 1. Imaginary

       ✔ 2. Irrational and unequal

       ✗ 3. Rational and unequal

       ✗ 4. Real and equal

Question ID : 16794313643

Q.17 If the system of equations $2x - 3y = 3$ and $-4x + qy = \frac{p}{z}$ is inconsistent which of the following cannot be the value of p?

Ans   ✗ 1. -18

       ✗ 2. -24

       ✔ 3. -12

       ✗ 4. -36

Question ID : 16794313637

Q.18 Which term of the arithmetic progression 21, 42, 63, 84 _____ is 420 ?

Ans   ✗ 1. 21

       ✗ 2. 19

       ✔ 3. 20

       ✗ 4. 22

Question ID : 16794313647

Q.19 For what value of k do the equations $3(k-1)x + 4y = 24$ and $15x + 20y = 8(k + 13)$ have infinite solutions?

Ans   ✗ 1. 3

       ✗ 2. 4

       ✔ 3. 2

       ✗ 4. 1

Question ID : 16794313636

Q.20 The sum of the first 51 terms of the arithmetic progression 2nd term is 2 and 4th term is 8, is _____ :

Ans   ✔ 1. 3774

Question ID : 16794313649

Section : Subject Related

Q.1 In the given figure O is the centre of the circle and AD is the tangent to the circle at A. If ∠CAD = 55° and ∠ADC = 25° then find ∠ABO

Question ID : 16794313671

Ans ✔ 1. 10°
× 2. 15°
× 3. 25°
× 4. 20°

Q.2 In every $(n+1)$-- elementic subset of the set $(1,2,3,-- -- 2n)$ which of the following is correct:

Question ID : 16794313659

Ans ✔ 1.
There exist at least two natural numbers which are prime to each other

× 2.
There exist at least three natural umber which are prime to each other

× 3. There exist no consecutive natural number

× 4.
There exist more than two natural numbers which are prime to each other

Q.3 The derivative of $sin^{-1} \frac{2x}{1+x^2}$ w, r, t $tan^{-1} \frac{2x}{1-x^2}$ is equal to:

Question ID : 16794313665

Ans × 1. $\frac{2x}{1-x^2}$
✔ 2. 1
× 3. 0
× 4. $\frac{x}{1-x}$

Q.4 In $\triangle ABC, AB = 5cm\ BC = 6cm$ and $CA = 7cm$ a transversal is drawn to cut the sides AB at F, BC produced at D and CA at E so that $AF = 2cm, AE = 4\ cm$ applying Menelaus theorem the length of BD is:

Question ID : 16794313669

Ans × 1. 12 cm
× 2. 8 cm
✔ 3. 10 cm
× 4. 14 cm

Q.5 Evaluation of $\int x\ sec^2x\ dx$ is:

Question ID : 16794313667

Ans × 1. $x \tan x + \log \sin x + c$
✔ 2. $x \tan x + \log \cos x + c$
× 3. $x \tan x - \log \sin x + c$
× 4. $x \tan x - \log \cos x + c$

Q.6 Which one of the following inequality is correct if $a_1,\ a_2,\ a_3, ---- ,a_n$ be real numbers? (use Tchebychef's inequality)

Question ID : 16794313655

Ans   ✓ 1.

$$(a_1 + a_2 + - - - - +a_n)^2 \leq, n(a_1^2 + a_2^2 + - - - - +a_n^2)$$

✗ 2.

$$(a_1 + a_2 + a_3 - - - - + a_n)^2 >, n(a_1^2 + a_2^2 + - - - - +a_n^2)$$

✗ 3.

$$(a_1 + a_2 + a - - - - +a_n)^2 >, (n - 1)(a_1^2 + a_2^2 + - - - - +a_n^2)$$

✗ 4.

$$(a_1 + a_2 + - - - - +a_n)^2 \leq, (n - 1)(a_1^2 + a_2^2 + - - - - +a_n^2)$$

Q.7 In the following figure (not to scale), $AB = CD$ and $\overline{AB}$ and $\overline{CD}$ are produced to meet at point P. If $\angle BAC = 70°$, then find $\angle P$

Question ID : 16794313672

Ans   ✗ 1. $50°$

✗ 2. $30°$

✓ 3. $40°$

✗ 4. $45°$

Q.8 If n be a positive integer. If the coefficient of 2nd, 3rd, 4th terms in the expansion of $(1 + x)^n$ are in A.P. Then the value of n is:

Question ID : 16794313661

Ans   ✗ 1. 9

✗ 2. 5

✗ 3. 8

✓ 4. 7

Q.9 Evaluation of $\int \frac{1 - \tan x}{1 + \tan x} dx$ is:

Question ID : 16794313668

Ans   ✗ 1. $\log(\sin - \cos x) + c$

✗ 2. $\log(\sin - \cot x) + c$

✓ 3. $\log(\sin + \cos x) + c$

✗ 4. $\log(\cos - \cot x) + c$

Q.10 If the function of $f(x) = \frac{x}{x - 1}$, express $f(3x)$ in terms of $f(x)$

Question ID : 16794313663

Ans   ✓ 1. $\frac{3f(x)}{2 + f(x) + 1}$

✗ 2. $\frac{3f(x)}{3f(x) - 1}$

✗ 3. $3f(x) - 1$

✗ 4. $\frac{3f(x)}{3f(x) - 3}$

Q.11 Given the recurrence relation $f(n) = (n - 1) + f(n - 1)$, $n > 72$, $f(2) = 1$, then $f(n)$ is:

Question ID : 16794313660

Ans   ✗ 1. $\frac{3}{2}n(n - 1)$

✗ 2. $\frac{n(n + 1)}{2}$

✓ 3. $\frac{n(n - 1)}{2}$

✗ 4. $\frac{3}{2}n(n+1)$

Q.12 If $f(x) - \frac{1}{1+2^{1/x}}$ then at $x = 0$ the function is:

Question ID : 16794313664

Ans ✔ 1.

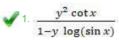Discontinuous because $L \lim\limits_{x\to 0} f(x) \neq R \lim\limits_{x\to 0} f(x)$

✗ 2. Discontinuous because $\lim\limits_{x\to 0} f(0) \neq f(0)$

✗ 3. Continuous

✗ 4.

Discontinuous because $R \lim\limits_{x\to 0} f(x)$ does not exist

---

Q.13 If $(\sin x)^y$, then $\frac{dy}{dx}$ is ___:

Question ID : 16794313666

Ans ✔ 1. $\dfrac{y^2 \cot x}{1 - y \log(\sin x)}$

✗ 2. $\dfrac{y^2 \cot x}{1 - y \log x}$

✗ 3. $\dfrac{y^2 \cot x}{1 + y \log(\sin x)}$

✗ 4. $\dfrac{y^2 \cot x}{1 + y \log x}$

Q.14 If a, b, c, x, y, z are the real numbers such that $a^2 + b^2 + c^2 = 1, x^2 + y^2 + z^2 = 1$, then $ax + by + cz$

Question ID : 16794313656

Ans ✗ 1. Less than or equal to 3

✔ 2. Less than or equal to 1

✗ 3. Greater than or equal to 3

✗ 4. Greater than or equal to 1

Q.15 How many numbers from 1 to 1000 are not divisible by 2, 3 and 5?

Question ID : 16794313658

Ans ✗ 1. 262

✗ 2. 268

✔ 3. 266

✗ 4. 264

Q.16 There are two circles of centers A and B, of radii 3cm and 5cm respectively. The distance between their centers $AB = 10cm$. A direct common tangent is drawn that meets the line BA produced at C, then the length of CA is equals to:

Question ID : 16794313670

Ans ✗ 1. 14 cm

✗ 2. 20 cm

✗ 3. 17 cm

✔ 4. 15 cm

Q.17 For every integer $n > 2$ the sum of the expansions $1 - n_{c_1} + n_{c_2} + - - (-1)^n n_{c_n}$ is - - -:

Question ID : 16794313662

Ans ✗ 1. $n(n-1)2^{n-2}$

✔ 2. 0

✗ 3. $n \, 2^{m-1}$

✗ 4. $(2n_{c_n})^2$

Q.18 If a, b, c be positive number such that $a + b + c = 4$, then $a^3 + b^3 + c^3$ is:

Question ID : 16794313654

Ans

✗ 1. Less than or equal to $\frac{16}{19}$

✗ 2. Greater than or equal to $\frac{16}{19}$

✗ 3. Less than or equal to $\frac{64}{9}$

✔ 4. Greater than or equal to $\frac{64}{9}$

Q.19 In the following figure, O is the centre of the circle and D, E and F are the mid points of AB, BO and OA respectively. If $\angle DEF = 30°$, then find $\angle ACB$.

Question ID : 16794313673

Ans

✗ 1. $120°$

✗ 2. $30°$

✔ 3. $60°$

✗ 4. $90°$

Q.20 If a, b, c, d are four positive real numbers such that $abcd = 1$, then $(1 + a)(1 + b)(1 + c)(1 + d)$ is:

Question ID : 16794313657

Ans

✗ 1. Less than or equal to 8

✔ 2. Greater than or equal to 16

✗ 3. Greater than or equal to 8

✗ 4. Less than or equal to 15

Section : Subject Related

Q.1 The ratio in which the line joining the points (1,-1) and (4,5) is divided by the point (2,1) is:

Question ID : 16794313679

Ans

✗ 1. $3 : 1$

✗ 2. $2 : 1$

✔ 3. $1 : 2$

✗ 4. $1 : 3$

Q.2 A park in the shape of a quadrilateral ABCD has $\angle C = 90°$, AB = 9 m, BC = 12 m, CD = 5 m and AD = 8 m. The area it occupies is:

Question ID : 16794313681

Ans

✗ 1. $(30 + 4\sqrt{35})$ m^2

✗ 2. $(30 + 7\sqrt{35})$ m^2

✗ 3. $(30 + 5\sqrt{35})$ m^2

✔ 4. $(30 + 6\sqrt{35})$ m^2

Q.3 A rectangular block 6cm × 12cm × 15cm is cut into exact number of equal cubes. The least possible number of cubes will be:

Question ID : 16794313683

Ans

✗ 1. 11

✗ 2. 40

✔ 3. 6

✗ 4. 33

Q.4 The value of $\sqrt{3}\ \cosec 20 - \sec 20°$ is:

Question ID : 16794313687

Ans ✗ 1. 0

✗ 2. 1

✔ 3. 4

✗ 4. −1

Q.5 $\dfrac{\cos A}{1-\tan A} + \dfrac{\sin A}{1-\cot A}$ is equals to:

Question ID : 16794313690

Ans ✗ 1. $\sin A - \cos A$

✗ 2. $\sin A \cos A$

✗ 3. $\cot A - \tan A$

✔ 4. $\sin A + \cos A$

Q.6 The vertices of a triangle ABC are (2,3), (4,7), (-5,2). The length of the altitude through A is:

Question ID : 16794313675

Ans

✗ 1. $\dfrac{9}{53}\sqrt{53}$

✔ 2. $\dfrac{13}{53}\sqrt{106}$

✗ 3. $\dfrac{9}{53}\sqrt{106}$

✗ 4. $\dfrac{13}{53}\sqrt{53}$

Q.7 Let $X \sim N(\mu, \sigma^2)$. If $\mu^2 = \sigma^2$, $(\mu > 0)$, then the value of $P(X < -\mu \mid X < \mu)$ in terms of cumulative function N(0, 1) is:

Question ID : 16794313692

Ans ✗ 1. $[1 - P(Z \le 1)]$

✗ 2. $[1 - P(Z \le 2)]$

✗ 3. $2[1 - P(Z \le 1)]$

✔ 4. $2[1 - P(Z \le 2)]$

Q.8 The coordinates of the point which is equidistant from the vertices (8, -10), (7, -3) and (0,-4) of a right angled triangle is:

Question ID : 16794313678

Ans ✔ 1. (4,-7)

✗ 2. $\left(\dfrac{15}{2}, -\dfrac{15}{2}\right)$

✗ 3. (7,-6)

✗ 4. $\left(\dfrac{7}{3}, -\dfrac{7}{3}\right)$

Q.9 If the elevation of the top of the tree at point E due east of the tree 60° and a point S due west of the tree is 30°, then elevation at the midpoint of ES is:

Question ID : 16794313689

Ans ✗ 1. $90°$

✗ 2. $45°$

✗ 3. $30°$

✔ 4. $60°$

Q.10 The locus of the point that is equidistant from two points (2,3) and (-4,1) is:

Question ID : 16794313676

Ans
✗ 1. $3x - y = 1$
✗ 2. $2x + 3y = 2$
✓ 3. $3x + y = -1$
✗ 4. $x + 3y = 1$

Q.11 The value of expression $\cos 60^\circ \cos 36^\circ \cos 42^\circ \cos 78^\circ$ is:

Question ID : 16794313688

Ans
✗ 1. $\dfrac{1}{8}$

✗ 2. $\dfrac{\sqrt{3}}{8}$

✓ 3. $\dfrac{1}{16}$

✗ 4. $\dfrac{1}{4}$

Q.12 $(\sin\alpha + \operatorname{cosec}\alpha)^2 + (\cos\alpha + \sec\alpha)$ is equals to:

Question ID : 16794313691

Ans
✓ 1. $\tan^2\alpha + \cot^2\alpha + 7$
✗ 2. $\sin^2\alpha + \cos^2\alpha + 5$
✗ 3. $\tan^2\alpha + \cos^2\alpha + 7$
✗ 4. $\tan^2\alpha + \cot^2\alpha + 5$

Q.13 The coordinates of A, B and C are (6,3), (-3,5) and (4,-2) respectively. The area of ΔABC is:

Question ID : 16794313680

Ans
✗ 1. 51/2 square units
✓ 2. 49/2 square units
✗ 3. 45/2 square units
✗ 4. 47/2 square units

Q.14 A chord of a circle of radius 28 cm subtends an angle 90° at the centre of the circle. The area of the minor segment is:

Question ID : 16794313682

Ans
✓ 1. $224\ cm^2$
✗ 2. $248\ cm^2$
✗ 3. $184\ cm^2$
✗ 4. $290\ cm^2$

Q.15 The mean and variance of binomial distribution $B(x:n,p)$ are 4 and $\frac{4}{3}$ respectively. What is the probability of getting 2 successes?

Question ID : 16794313693
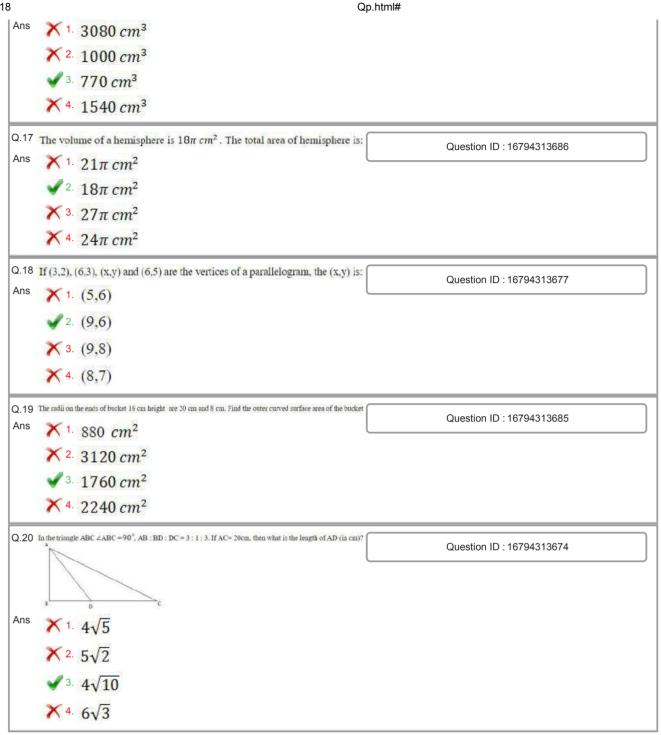
Ans
✗ 1. $\dfrac{1}{243}$

✓ 2. $\dfrac{20}{243}$

✗ 3. $\dfrac{20}{423}$

✗ 4. $\dfrac{20}{342}$

Q.16 A cylinder has a diameter of 14 cm and its area of curved surface is $220\ cm^2$
The volume of the cylinder is:

Question ID : 16794313684

Ans   ✗ 1. $3080 \ cm^3$

✗ 2. $1000 \ cm^3$

✔ 3. $770 \ cm^3$

✗ 4. $1540 \ cm^3$

Q.17 The volume of a hemisphere is $18\pi \ cm^2$. The total area of hemisphere is:

Question ID : 16794313686

Ans   ✗ 1. $21\pi \ cm^2$

✔ 2. $18\pi \ cm^2$

✗ 3. $27\pi \ cm^2$

✗ 4. $24\pi \ cm^2$

Q.18 If (3,2), (6,3), (x,y) and (6,5) are the vertices of a parallelogram, the (x,y) is:

Question ID : 16794313677

Ans   ✗ 1. (5,6)

✔ 2. (9,6)

✗ 3. (9,8)

✗ 4. (8,7)

Q.19 The radii on the ends of bucket 16 cm height are 20 cm and 8 cm. Find the outer curved surface area of the bucket

Question ID : 16794313685

Ans   ✗ 1. $880 \ cm^2$

✗ 2. $3120 \ cm^2$

✔ 3. $1760 \ cm^2$

✗ 4. $2240 \ cm^2$

Q.20 In the triangle ABC $\angle ABC = 90°$, AB : BD : DC = 3 : 1 : 3. If AC= 20cm, then what is the length of AD (in cm)?

Question ID : 16794313674

Ans   ✗ 1. $4\sqrt{5}$

✗ 2. $5\sqrt{2}$

✔ 3. $4\sqrt{10}$

✗ 4. $6\sqrt{3}$

Section : Subject Related

Q.1 From the following results of two colleges A and B, find out which of the two is better?

Question ID : 16794313702

		College A		College B	
Exam	Appeared	Passed	Appeared	Passed
M. A.	100	90	240	200
M. Sc.	60	45	200	160
B. A.	120	75	160	100
B. Sc.	200	150	200	140
Total	480	360	800	600

Ans   ✗ 1. college B

✗ 2. data is not sufficient

  ✔ 3. both are same

  ✘ 4. college A

Q.2 If $P(A \cap B) - \frac{1}{2}, P(\bar{A} \cap \bar{B}) - \frac{1}{2}$ and $2P(A) - P(B) - p$, then the value of p is given by:

Question ID : 16794313697

Ans ✘ 1. 1/3

  ✘ 2. 1/4

  ✔ 3. 2/3

  ✘ 4. 1/2

Q.3 The measure of the central tendency is given by the X-coordinate of the point of intersection of the more than ogive and less than ogive is:

Question ID : 16794313701

Ans ✘ 1. Mode

  ✘ 2. Mean

  ✘ 3. All the above

  ✔ 4. Median

Q.4 Consider the following distribution:

Question ID : 16794313699

Marks obtained	No. of students
More than or equal to zero	63
More than or equal to 10	58
More than or equal to 20	55
More than or equal to 30	51
More than or equal to 40	48
More than or equal to 50	42

The frequency of the class 30-40 is:

Ans ✘ 1. 4

  ✘ 2. 51

  ✘ 3. 48

  ✔ 4. 3

Q.5 The regression coefficients are b_2 and b_1. Then the correlation coefficient r is:

Question ID : 16794313696

Ans ✘ 1. $\dfrac{b_1}{b_2}$

  ✘ 2. $\dfrac{b_2}{b_1}$

  ✔ 3. $\pm\sqrt{(b_1 b_2)}$

  ✘ 4. $b_1 b_2$

Q.6 The values of c and P(X>1) for which the function

Question ID : 16794313694

$$f(x) = \begin{cases} \dfrac{c}{\sqrt{x}}, & 0 < x < 4 \\ 0, & otherwise \end{cases}$$

Is a p.d.f are?

Ans

✗ 1. 1/2 , 1

✗ 2. 1/4, 0

✓ 3. 1/4, 1/2

✗ 4. −1/4, 1/2

Q.7 If the mean of n observations $1^2, 2^2, 3^2$ _____ n^2 is $\frac{46n}{11}$, then n is equal to:

Question ID : 16794313703

Ans

✗ 1. 22

✗ 2. 23

✓ 3. 11

✗ 4. 12

Q.8 X, Y and Z are three uncorrelated variables having variances σ_x^2, σ_y^2 and σ_z^2 respectively, then the correlation coefficient between X+Y and Y+Z is:

Question ID : 16794313695

Ans

✗ 1. 1/2

✗ 2. 1

✓ 3. none of these

✗ 4. 0

Q.9 In a Mathematics test 15 students scored 80 marks, 20 students scored 75 marks, 28 students scored 65 marks and 25 students scored 60 marks, mode of the score is:

Question ID : 16794313698

Ans

✗ 1. 75

✓ 2. 65

✗ 3. 60

✗ 4. 80

Q.10 For the following distribution:

Question ID : 16794313700

Class	0-5	5-10	10-15	15-20	20-25
Frequency	10	15	12	20	9

The sum of lower limits of the median class and modal class is:

Ans

✗ 1. 30

✗ 2. 15

✗ 3. 35

✓ 4. 25

Q.11 What is the technical term used when our attentions shifts spontaneously from one task to another, for instance listening to a conversation in the middle of reading a book?

Question ID : 16794313706

Ans

✗ 1. Distributed attention

✗ 2. Divided attention

✓ 3. Non-volitional attention

✗ 4. Focused attention

Q.12 पर्यावरण के संरक्षण के लिए संदेश सबसे अधिक लोगों को दिया जा सकता है, निम्नलिखित विकल्पों में से किसके माध्यम से कला का रूप है?

Question ID : 16794313711

Ans

✓ 1. स्ट्रीट नाटकों

✗ 2. चित्र

✗ 3. संगीत कार्यक्रम

✗ 4. मिट्टी के बर्तनों

Q.13 What is type of knowledge is it when acquired through data and inferences?

Question ID : 16794313712

Ans   ✗ 1. Sensory knowledge

       ✓ 2. Logical knowledge

       ✗ 3. Experiential knowledge

       ✗ 4. Intuitive knowledge

Q.14 According to Bronfenbrnner's theory of development, the govt policies and cultural changes comprise which layer of the individual's ecosystem?

Question ID : 16794313704

Ans   ✗ 1. Mesosystem

       ✗ 2. Microsystem

       ✗ 3. Chronosystem

       ✓ 4. Exosystem

Q.15 Choose the most appropriate option.

Question ID : 16794313713

Sensitizing peers is one of the methods to reduce _____ in an inclusive school.

Ans   ✗ 1. Gender issues

       ✗ 2. Curriculum modifications

       ✗ 3. Chaotic environment

       ✓ 4. Bullying

Q.16 In which of the given subjects each sentence is written in a compact style with lot of information and minimal redundancy?

Question ID : 16794313710

Ans   ✓ 1. Mathematics

       ✗ 2. Social sciences

       ✗ 3. Biology

       ✗ 4. English

Q.17 Choose the appropriate answer from the following.

Question ID : 16794313708

Avoiding birth of girl child by pre-natal sex determination is medically termed as:

Ans   ✓ 1. Female foeticide

       ✗ 2. Female homicide

       ✗ 3. Female pesticide

       ✗ 4. Female infanticide

Q.18 Which of the following does not contribute to the success of non-formal education?

Question ID : 16794313705

Ans   ✗ 1.
       Quality of educational material to uphold student motivation and meet expectations

       ✗ 2. Institutional support to students

       ✗ 3. Interest level and motivation of students

       ✓ 4. Student ability levels

Q.19 Relating content to the learners' context and is included in which?

Question ID : 16794313709

Ans   ✗ 1. General pedagogical knowledge

       ✗ 2. Knowledge of curricular context

       ✓ 3. Curriculum knowledge

       ✗ 4. Knowledge of learners' background

Q.20 Choose the appropriate option to complete the statement.

Question ID : 16794313707

Physical science is a branch of science and the study of:

Ans   ✗ 1. Physical substances

        ✔ 2. Non-living systems

        ✗ 3. Engines

        ✗ 4. Physics

Participant ID:	
Participant Name:	**HaryanaJobs.in**
Test Center Name:	Abhinav Global School Online Centre
Test Date:	23/09/2018
Test Time:	9:00 AM - 11:00 AM
Subject:	TGT MATHS MALE

Section : **Mental Ability**

Q.1 जब आप कॉलेज जा रहे हैं तो आप सड़क पर गिरने वाली एक बूढ़ी औरत को देखते हैं। स्थिति से निपटने के लिए अपनाये जाने वाला सबसे अच्छा तरीका क्या है?

Question ID : **16794313924**

Ans ✗ 1.

उन्हें छोड़ देते हैं और अपने काम को जारी रखते हैं

✗ 2. उन्हें घर से बाहर न आने की चेतावनी दें

✔ 3.

यदि कोई घाव हो तो उन्हें पर्याप्त प्राथमिक सहायता प्रदान करना और उन्हें घर वापस ले जाना।

✗ 4. उनके परिवार के सदस्यों को बुलाए

Q.2 आज सिंधु का जन्मदिन है। आज से एक साल बाद वह अपनी 14वर्ष पहले की उम्र की दोगुनी हो जाएगी। आज सिंधु की उम्र क्या है?

Question ID : **16794313931**

Ans ✗ 1. 25 वर्ष

✔ 2. 29 वर्ष

✗ 3. 24 वर्ष

✗ 4. 19 वर्ष

Q.3 विकल्पों में से नीचे दिए गए एम्बेडेड चित्र को ढूंढें।
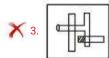
Question ID : **16794313922**

Ans
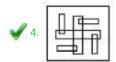
✗ 1.

✗ 2.

✗ 3.

✔ 4.

Q.4 Find the odd pair of numerals.

Question ID : **16794313933**
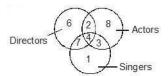
Ans
✔ 1. 51-7
✘ 2. 34-6
✘ 3. 79-9
✘ 4. 23-5

Q.5 Study the following carefully and answer the given question.

Question ID : **16794313927**

Which region belongs to the directors who are neither actors nor Singers?

Ans
✘ 1. 2
✘ 2. 10
✔ 3. 6
✘ 4. 4

Q.6 Find the next figure in the series:

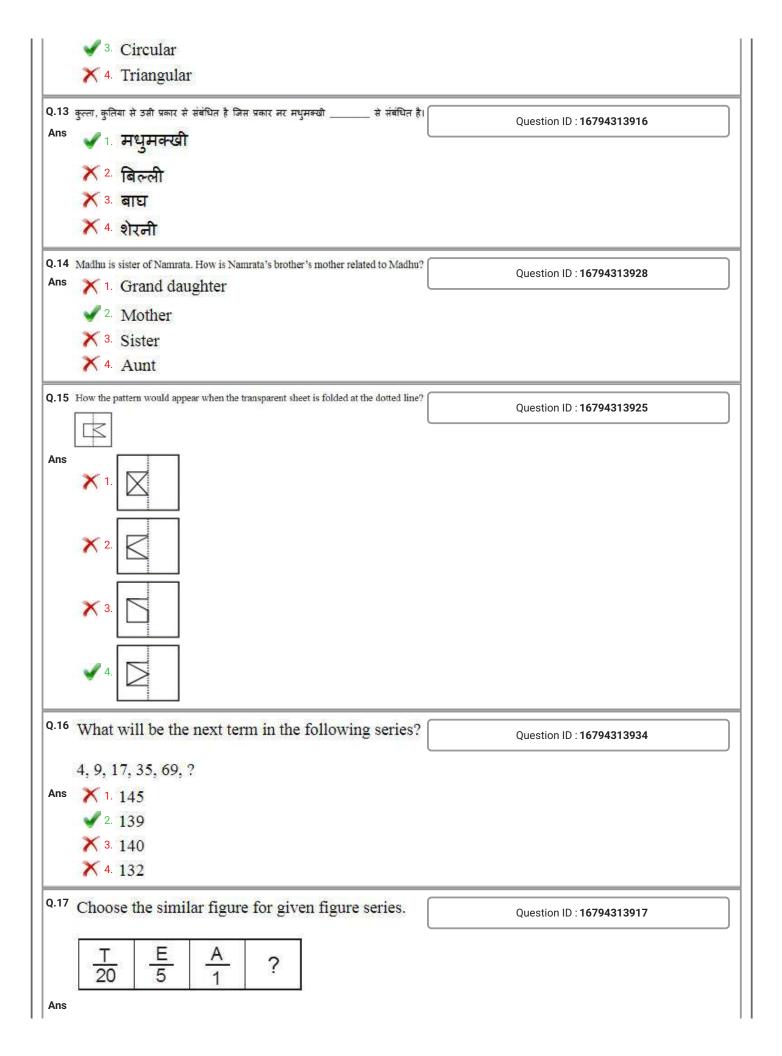Question ID : **16794313919**

Ans
✘ 1.
✔ 2.
✘ 3.
✘ 4.

Q.7 What will be the missing term in the following series?

Question ID : **16794313935**

B, I , P, ?, D, K

Ans
✘ 1. M
✘ 2. Z
✔ 3. W
✘ 4. O

Q.8 Choose the odd figure in the series:

| A | B | C | D |

Ans

✗ 1. B

✔ 2. D

✗ 3. A

✗ 4. C

Q.9 The following bar chart shows information about NTSE pass out percentage for "XYZ" institute for past years. Read the chart carefully and answer the question.

What is the ratio of NTSE passouts from 'XYZ' in 2010 & 2013?

Ans

✔ 1. 2 : 1

✗ 2. 1 : 1

✗ 3. 1.5 : 1

✗ 4. 2 : 3

Q.10 If P means ×, R means +, T means ÷ and S means −, then what is the value of 16T2P7S10R3 − ?

Ans

✗ 1. 50

✗ 2. 63

✔ 3. 49

✗ 4. 57

Q.11 Study the following information carefully to answer the question given below.

Following are the qualifications and conditions for certain posts in a "XYZ" company, The candidate must:
a) be an engineering graduate with atleast 70% marks
(b) be not less than 21 yrs and not more than 26 years of age as on 01/04/2018
c) have passed the written test with at least 60% of marks
d) be willing to pay a deposit of ₹ 2.5 lacks, to be refunded on completion of probation & training
If the candidate is satisfied with (a)-(e) would be referred as Engineer.
However if the candidate is satisfied with all the above except
(i) at (a) but appeared final semester exam result yet to be declared with 75% average marks up to seventh semester be referred as Project-Engineer
(ii) at (a) but has done diploma in engineering with 75% of marks be referred as Asst. Engineer
(iii) at (d) be willing to pay ₹1.5 lakhs as security deposit he referred as Engineer-Trainee
(iv) at (b) even if age above 26 years age as on 1/4/18 but with 3 years of experience be referred as Senior-Engineer
Fatima is 28 years now in July 2018. She has completed B-E in information technology with 86% of marks. She has passed written test with 73% of marks. She is willing to pay ₹ 2.5 Lacks of security deposit. She also had an experience of 3 years in the relevant field. For which position she will be referred?

Ans

✗ 1. Engineer

✔ 2. Senior-engineer

✗ 3. Engineer – Trainee

✗ 4. Project-Engineer

Q.12 A car wheel is always in _____ shape.

Ans

✗ 1. Rectangle

✗ 2. Square

✔ 3. Circular
✘ 4. Triangular

Q.13 कुत्ता, कुतिया से उसी प्रकार से संबंधित है जिस प्रकार नर मधुमक्खी _____ से संबंधित है।

Ans

✔ 1. मधुमक्खी

✘ 2. बिल्ली

✘ 3. बाघ

✘ 4. शेरनी

Q.14 Madhu is sister of Namrata. How is Namrata's brother's mother related to Madhu?

Ans

✘ 1. Grand daughter

✔ 2. Mother

✘ 3. Sister

✘ 4. Aunt

Q.15 How the pattern would appear when the transparent sheet is folded at the dotted line?

Ans

✘ 1.

✘ 2.

✘ 3.

✔ 4.

Q.16 What will be the next term in the following series?

4, 9, 17, 35, 69, ?

Ans

✘ 1. 145

✔ 2. 139

✘ 3. 140

✘ 4. 132

Q.17 Choose the similar figure for given figure series.

| $\frac{T}{20}$ | $\frac{E}{5}$ | $\frac{A}{1}$ | ? |

Ans

✗ 1.	$\dfrac{C}{5}$
✗ 2.	$\dfrac{D}{6}$
✗ 3.	$\dfrac{L}{23}$
✔ 4.	$\dfrac{B}{2}$

Q.18 Find the odd pair of words.

Ans
- ✔ 1. Cricket : Court
- ✗ 2. Skating : Rink
- ✗ 3. Wresting : Arena
- ✗ 4. Exercise : Gymnasium

Q.19 Find the next figure in the series:

Ans

- ✗ 1.
- ✔ 2.
- ✗ 3.
- ✗ 4.

Q.20 The number of boys in a class is four times the number of girls. Which one of the following numbers cannot represent the total number of children in the class?

Ans
- ✗ 1. 50
- ✗ 2. 45
- ✔ 3. 42
- ✗ 4. 60

Section : **General Awareness**
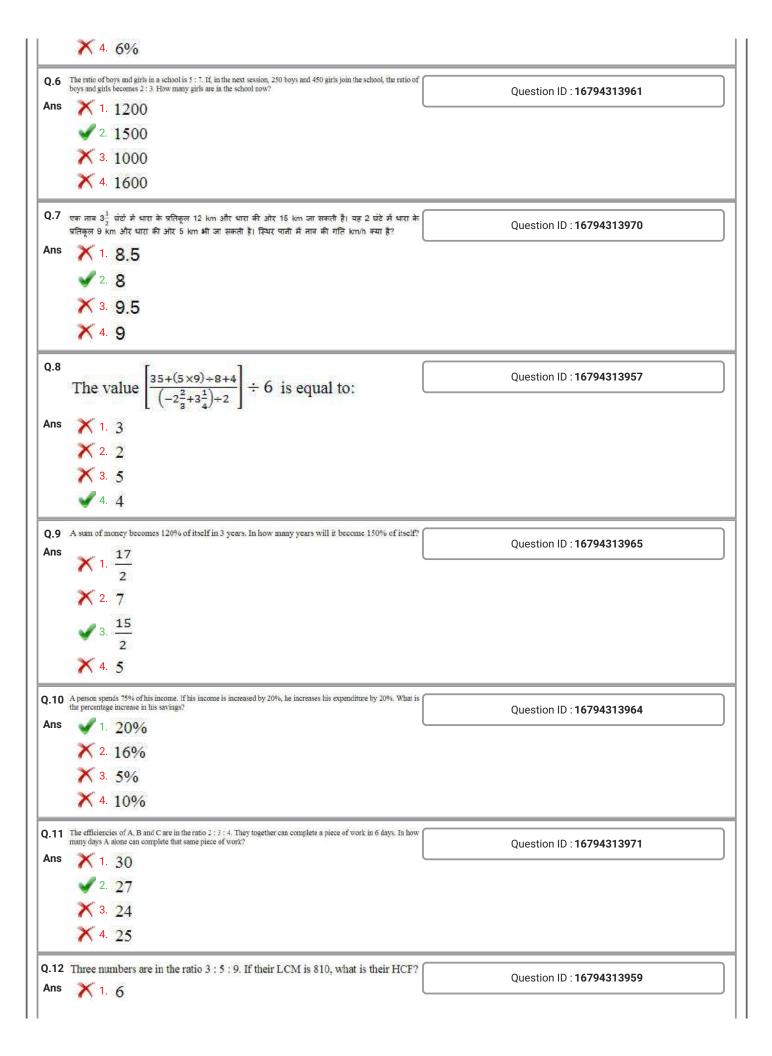
Q.1 The National Green Tribunal was established in the year _____.

Question ID : 16794313954

Ans
✗ 1. 2011
✓ 2. 2010
✗ 3. 2008
✗ 4. 2009

Q.2 Members of Parliament Local Area Development Scheme (MPLADS) was introduced in the year:

Question ID : 16794313940

Ans
✗ 1. 1995
✓ 2. 1993
✗ 3. 1994
✗ 4. 1992

Q.3 What was the focal theme of the 105th Indian Science Congress held in March 2018?

Question ID : 16794313952

Ans
✓ 1.
Reaching the Unreached Through Science & Technology

✗ 2.
Science & Technology for Indigenous Development in India

✗ 3.
Future India : Science & Technology Science & technology for National Development

✗ 4.
Science & Technology for Human Development

Q.4 भारत में चुनावों के लिए आचार संहिता को नियंत्रित करने वाले मानदंडों का सेट _____ विकसित किया गया था।

Question ID : 16794313939

Ans
✓ 1. राजनीतिक दलों की सर्वसम्मति के साथ
✗ 2. भारत के बार एसोसिएशन द्वारा
✗ 3. भारत की बार काउंसिल द्वारा
✗ 4.
सुप्रीम कोर्ट के न्यायाधीशों के एक समूह द्वारा

Q.5 _____ व्यापक भू-क्षरण का कारण बनता है।

Question ID : 16794313946

Ans
✗ 1. फसल का चक्रिकरण
✗ 2. कंटूर टेरेसिंग
✗ 3. वायु अवरोधक रोपण
✓ 4. अधिक चराई

Q.6 नीचे दिए गए कथनों में से तीन कथन भारतीय प्रतिस्पर्धा आयोग के कर्तव्यों का सही वर्णन करते हैं। असत्य कथन का पता लगाएं।

Question ID : 16794313955

Ans
✓ 1. व्यापार की स्वतंत्रता को सीमित करना
✗ 2.
प्रतिस्पर्धा पर प्रतिकूल प्रभाव डालने वाली प्रथाओं को खत्म करना
✗ 3.

प्रतिस्पर्धा को बढ़ावा देना और उसे बनाए रखना

✗ 4. उपभोक्ताओं के हितों की रक्षा करना

Q.7 Find out the unit of measurement which is NOT named in the honour of a scientist.

Ans

✗ 1. ampere

✗ 2. farad

✔ 3. radian

✗ 4. hertz

Question ID : **16794313950**

Q.8 निम्नलिखित राजवंशों में से कौन सा दक्षिण भारत से संबंधित था?

Ans

✔ 1. सातवाहन

✗ 2. सेना

✗ 3. मौखरि

✗ 4. प्रतिहारस

Question ID : **16794313936**

Q.9 FSDC stands for 'Financial Stability and Development _____.'

Ans

✗ 1. Corporation

✗ 2. Committee

✗ 3. Company

✔ 4. Council

Question ID : **16794313949**

Q.10 Three of the following statements in regard to the Gazette of India are correct. Find the incorrect one.

Ans

✔ 1. Printing of Gazette is outsourced as per rule

✗ 2.
Controller of Publication is the authorised publisher

✗ 3.
Authorised legal document of the Government of India

✗ 4. Published by the Department of Publication

Question ID : **16794313941**

Q.11 'Lotus' is the state flower of 3 of the following 4 states. Find the odd one out.

Ans

✗ 1. Karnataka

✔ 2. Himachal Pradesh

✗ 3. Haryana

✗ 4. Jammu and Kashmir

Question ID : **16794313945**

Q.12 Bureau of Indian Standards, measuring the Seismic Zone Intensity on MM scale (Modified Mercalli), grouped the country into _____ seismic zones.

Ans

✗ 1. 2

✔ 2. 4

✗ 3. 6

✗ 4. 3

Question ID : **16794313947**

Q.13

What is NOT true in regard to Ayushman Bharat Scheme?

Question ID : **16794313938**

Ans ✔ 1.

sectoral and segmented approach of health service delivery

✘ 2. creation of Health and Wellness Centres

✘ 3. vision is 'Healthy India, Prosperous India'

✘ 4.

comprehensive need-based health care service

Q.14 _____ is celebrated as the Micro, Small and Medium-sized Enterprises Day.

Question ID : **16794313948**

Ans ✘ 1. 24th June

✘ 2. 25th June

✘ 3. 26th June

✔ 4. 27th June

Q.15 Three of the following statements in connection with different formats of cricket matches, played during Indian Cricket team's tour of South Africa in 2018, are correct. Find the incorrect statement.

Question ID : **16794313942**

Ans ✔ 1. India won the ODI series 4 – 2

✘ 2. South Africa won the Test series 2 – 1

✘ 3. India won the T20I series 2 – 1

✘ 4. The series was held in Jan-Feb 2018

Q.16 In August 2018, which state government took initiative to launch India's first blockchain district?

Question ID : **16794313953**

Ans ✘ 1. Karnataka

✘ 2. Andhra Pradesh

✔ 3. Telangana

✘ 4. Tamil Nadu

Q.17 Which is the official game of Rajasthan?

Question ID : **16794313943**

Ans ✘ 1. Kabaddi

✔ 2. Basketball

✘ 3. Volleyball

✘ 4. Hockey

Q.18 India's National Song was a part of Bankimchandra Chatterji's novel _____.

Question ID : **16794313944**

Ans ✘ 1. Kapalkundala

✘ 2. Devi Chaudhurani

✘ 3. Durgeshnandini

✔ 4. Anand Math

Q.19 दादाभाई नौरोजी द्वारा स्थापित 'ज्ञान प्रसारक मंडली' _____ से संबंधित थी।

Question ID : **16794313937**

Ans ✘ 1. स्वास्थ्य देखभाल पर शिक्षा

Q.20 International Bureau of Weights and Measures is located in _____.

Question ID : **16794313951**

Ans
✖ 1. Finland

✔ 2. France

✖ 3. Switzerland

✖ 4. Norway

Section : **Arithmetic Ability**

Q.1 Two pipes A and B can fill an empty tank in 8 hours and 12 hours respectively, whereas pipe C an empty a full tank in 6 hours. When the tank is empty, pipes A and B are opened and, after 2 hours, pipe C is also opened. In how many hours the tank will be filled completely?

Question ID : **16794313972**

Ans
✖ 1. 12

✔ 2. 16

✖ 3. 14

✖ 4. 18

Q.2 The sides of a triangle are 30 cm, 28 cm and 26 cm respectively. What is the length of its longest altitude (correct to one decimal place)?

Question ID : **16794313967**

Ans
✖ 1. 16.4 cm

✔ 2. 25.8 cm

✖ 3. 24 cm

✖ 4. 22.4 cm

Q.3 The HCF of two numbers is 36 and their sum is 1260. If both are 3-digit numbers, then how many such pairs of numbers are possible?

Question ID : **16794313958**

Ans
✖ 1. 5

✔ 2. 7

✖ 3. 4

✖ 4. 10

Q.4 What is the compound interest on ₹ 4800 for 30 months, if the interest is compounded annually at the rate of 8% per annum (rounded to the nearest integer)?

Question ID : **16794313966**

Ans
✖ 1. ₹ 960

✔ 2. ₹ 1023

✖ 3. ₹ 1032

✖ 4. ₹ 1021

Q.5 Two articles A and B are sold for ₹ 1888 and ₹ 1440 respectively. On A a profit of 18% is earned, whereas on B a loss of 10% is incurred. What is the overall profit percentage?

Question ID : **16794313963**

Ans
✖ 1. 8%

✔ 2. 4%

✖ 3. 5%

✗ 4. 6%

Q.6 The ratio of boys and girls in a school is 5 : 7. If, in the next session, 250 boys and 450 girls join the school, the ratio of boys and girls becomes 2 : 3. How many girls are in the school now?

Question ID : **16794313961**

Ans   ✗ 1. 1200

     ✔ 2. 1500

     ✗ 3. 1000

     ✗ 4. 1600

Q.7 एक नाव $3\frac{1}{2}$ घंटों में धारा के प्रतिकूल 12 km और धारा की ओर 15 km जा सकती है। यह 2 घंटे में धारा के प्रतिकूल 9 km और धारा की ओर 5 km भी जा सकती है। स्थिर पानी में नाव की गति km/h क्या है?

Question ID : **16794313970**

Ans   ✗ 1. 8.5

     ✔ 2. 8

     ✗ 3. 9.5

     ✗ 4. 9

Q.8 The value $\left[\frac{35+(5\times9)\div8+4}{\left(-2\frac{2}{3}+3\frac{1}{4}\right)\div2}\right]\div 6$ is equal to:

Question ID : **16794313957**

Ans   ✗ 1. 3

     ✗ 2. 2

     ✗ 3. 5

     ✔ 4. 4

Q.9 A sum of money becomes 120% of itself in 3 years. In how many years will it become 150% of itself?

Question ID : **16794313965**

Ans   ✗ 1. $\frac{17}{2}$

     ✗ 2. 7

     ✔ 3. $\frac{15}{2}$

     ✗ 4. 5

Q.10 A person spends 75% of his income. If his income is increased by 20%, he increases his expenditure by 20%. What is the percentage increase in his savings?

Question ID : **16794313964**

Ans   ✔ 1. 20%

     ✗ 2. 16%

     ✗ 3. 5%

     ✗ 4. 10%

Q.11 The efficiencies of A, B and C are in the ratio 2 : 3 : 4. They together can complete a piece of work in 6 days. In how many days A alone can complete that same piece of work?

Question ID : **16794313971**

Ans   ✗ 1. 30

     ✔ 2. 27

     ✗ 3. 24

     ✗ 4. 25

Q.12 Three numbers are in the ratio 3 : 5 : 9. If their LCM is 810, what is their HCF?

Question ID : **16794313959**

Ans   ✗ 1. 6

✗ 2. 12

✗ 3. 15

✔ 4. 18

Q.13 The height and radius of the base of a cylinder are both increased by 10%. What is the percentage increase in its volume?

Ans ✗ 1. 20%

✗ 2. 21%

✔ 3. 33.1%

✗ 4. 33.3%

Q.14 If the length of a rectangle is decreased by 10%, by what percentage should its breadth be increased so that its area is increased by 10%?

Ans ✗ 1. $\dfrac{230}{11}$ %

✗ 2. 20%

✔ 3. $\dfrac{200}{9}$ %

✗ 4. $\dfrac{200}{7}$ %

Q.15 The value of $\dfrac{(1.5)^3 - (4.7)^3 + (3.2)^3 + 4.5 \times 4.7 \times 3.2}{(15)^2 + (47)^2 \ (32)^2 + 1.5 \times 4.7 + 4.7 \times 32 - 3.2 \times 1.5}$ is equal to:

Ans ✗ 1. 10

✗ 2. 0.1

✗ 3. 0.001

✔ 4. 0

Q.16 Two trains of lengths 275 m and 175 m are running on parallel tracks in the same direction. The faster train overtakes the slower train in 54 seconds. If the speed of the slower is 40 km/h, what is the speed of the faster train?

Ans ✗ 1. 9 km/h

✗ 2. 60 km/h

✔ 3. 70 km/h

✗ 4. 75 km/h

Q.17 If $(x + y) : (x - y) = 4 : 1$, then $(x^3 + y^3) : (x^3 - y^3)$ is equal to:

Ans ✔ 1. 76 : 49

✗ 2. 72 : 47

✗ 3. 63 : 8

✗ 4. 64 : 1

Comprehension:

Direction: The following table gives the number of boys and girls studying in different streams in an Engineering college. Read the table and answer the following questions.

Stream	ME	CIVIL	C.S.	E.C.	IT	Electrical
Boys	800	1300	800	900	700	400
Girls	300	750	1300	1400	850	500

SubQuestion No : 18

Q.18 What is the percentage of girls studying in the college?

Question ID : **16794313974**

Ans ✔ 1. 49%

✗ 2. 48.5%

✗ 3. 48%

✗ 4. 49.5%

Comprehension:

Direction: The following table gives the number of boys and girls studying in different streams in an Engineering college. Read the table and answer the following questions.

Stream	ME	CIVIL	C.S.	E.C.	IT	Electrical
Boys	800	1300	800	900	700	400
Girls	300	750	1300	1400	850	500

SubQuestion No : 19

Q.19 In which stream, percentage of girls is highest?

Question ID : **16794313976**

Ans ✔ 1. C.S.

✗ 2. IT

✗ 3. E.C.

✗ 4. Electrical

Comprehension:

Direction: The following table gives the number of boys and girls studying in different streams in an Engineering college. Read the table and answer the following questions.

Stream	ME	CIVIL	C.S.	E.C.	IT	Electrical
Boys	800	1300	800	900	700	400
Girls	300	750	1300	1400	850	500

SubQuestion No : 20

Q.20 What is the percentage if students studying in the stream C.S. to the total students?

Question ID : **16794313975**

Ans ✔ 1. 21%

✗ 2. 22.5%

✗ 3. 21.5%

✗ 4. 22%

Section : **General English**

Q.1 "Who has taken my book?" said Krish. The correct reported speech form of this sentence is:

Krish _____

Ans

✗ 1. said who took my book.

✗ 2. asked whether who took his book.

✔ 3. asked who had taken his book.

✗ 4. asked if someone has taken his book.

Q.2 Which sentence makes most grammatical sense?

Ans ✗ 1.

Despite the rush, Ali decided to go to the mall but purchase clothes.

✔ 2.

Despite the rush, Ali decided to go to the mall and purchase clothes.

✗ 3.

Despite the rush, Ali decided to go to the mall or purchase clothes.

✗ 4.

Despite the rush, Ali decided to go to the mall though purchase clothes.

Q.3 Provide the appropriate antonym for the underlined word in the below sentence.

Shravan talks about gloomy things.

Ans

✗ 1. Rough

✗ 2. Intricate

✔ 3. Cheerful

✗ 4. Caring

Q.4 One of the options below is a complete sentence. Identify it.

Ans ✗ 1. Now and then.

✔ 2. The artist painted a masterpiece.

✗ 3. The car in the park.

✗ 4. Once in a blue moon.

Q.5 Provide the appropriate synonym for the underlined word in the below sentence.

He was found in a deserted island.

Ans ✗ 1. Habit

✔ 2. Uninhabited

✗ 3. Reacted

✗ 4. Violet

Q.6

Choose a suitable ending for the below sentence:

The coach did his best; however, _____

Ans
- ✗ 1. the team could do well.
- ✓ 2. the team couldn't perform well.
- ✗ 3. the team performed well.
- ✗ 4. the team couldn't well.

Q.7 Provide the appropriate antonym for the underlined word in the below sentence.

The tragic ending of the movie was not appreciated by the audience.

Ans
- ✓ 1. Comic
- ✗ 2. Humid
- ✗ 3. Intense
- ✗ 4. Suspense

Q.8 Fill in the blank with the most appropriate option.

The boy did not have any friend _____ Aakash.

Ans
- ✗ 1. beside
- ✓ 2. besides
- ✗ 3. from
- ✗ 4. along

Q.9 Provide the appropriate synonym for the underlined word in the below sentence.

He is an ardent supporter of Liverpool.

Ans
- ✗ 1. Arrogant
- ✓ 2. Devoted
- ✗ 3. Impossible
- ✗ 4. Strength

Q.10 Fill in the blank with the most appropriate option.

My cat rushed _____ the road.

Ans
- ✗ 1. of
- ✗ 2. besides
- ✗ 3. into
- ✓ 4. across

Q.11 Provide the appropriate synonym for the underlined word in the below sentence.

My colleagues threw a surprise party for me.

Ans
- ✗ 1. Close-knit
- ✗ 2. Class mates

✗ 3. Boss

✓ 4. Companions

Q.12 Fill in the blank with the most appropriate option.

He likes _____ his school teachers once in a while.

Ans   ✗ 1. to meeting

✓ 2. meeting

✗ 3. meet

✗ 4. to be meeting

Q.13 Fill in the blank with the most appropriate option.

_____ he heads the team, he is accountable for their performance.

Ans   ✗ 1. Despite

✗ 2. Consequently

✓ 3. Because

✗ 4. But

Q.14 Provide the appropriate question tag for the below question:

She works at the CCI club _____

Ans   ✗ 1. should she?

✗ 2. does she?

✗ 3. mustn't she?

✓ 4. doesn't she?

Q.15 Fill in the blank with the most appropriate option.

Mark _____ at Titan since 2008.

Ans   ✗ 1. work

✗ 2. must working

✗ 3. worked

✓ 4. has been working

Comprehension:

Read the following passage and answer the questions that follow.

A recent application filed as a second appeal under the Right to Information (RTI) Act by an activist has revealed that the Central Railway's catering department purchased certain food items to stock their warehouses at several times the maximum retail price.

After railway authorities failed to share information on purchase of food items sought in his RTI application, activist Ajay Bose filed a first appeal. The response to this revealed that each kg of Amul curd was purchased at an eye-watering ₹9,720. Mr. Bose filed his query after learning that the catering department was running at a huge loss.

"I filed the application in July 2016, but didn't get a reply from Central Railway. It appeared they wanted to cover something up. I filed an appeal and the appellate authority show caused the railways asking them to provide details sought by me within 15 days. Despite this, there was no reply even after several months," Mr. Bose told The Hindu.

SubQuestion No : 16

Q.16 The Appellate Authority asked the Railways to respond within:

Ans
✔ 1. 15 days
✘ 2. 15 hours
✘ 3. 5 days
✘ 4. 15 minutes

Comprehension:

Q.17 The word 'query' as used in the passage means:

Ans ✗ 1. critic

✗ 2. answer

✗ 3. solution

✔ 4. question

Comprehension:

Read the following passage and answer the questions that follow.

A recent application filed as a second appeal under the Right to Information (RTI) Act by an activist has revealed that the Central Railway's catering department purchased certain food items to stock their warehouses at several times the maximum retail price.

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Q.18 The above article conveys a clear case of:

Ans ✗ 1. Communication

✗ 2. Unity

✔ 3. Corruption

✗ 4. Airline Companies

Comprehension:

Read the following passage and answer the questions that follow.

A recent application filed as a second appeal under the Right to Information (RTI) Act by an activist has revealed that the Central Railway's catering department purchased certain food items to stock their warehouses at several times the maximum retail price.

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SubQuestion No : 19

Q.19 The phrase, 'cover up' means:

Ans

✔ 1. To conceal

✗ 2. To discover

✗ 3. To dissolve

✗ 4. To disclose

Comprehension:

SubQuestion No : 20

Q.20 The activist filed a first appeal because:

Ans
✗ 1. He was angry with RTI

✗ 2. He was happy

✗ 3. It was a prank

✔ 4.
Railway authorities failed to share information with him

Q.1 'तत्सम' शब्द चुनिए:

Ans
✗ 1. घर

✔ 2. छात्र

✗ 3. दोस्त

✗ 4. भाई

Q.2 'प्रतीक्षा' शब्द में उपसर्ग है:

Ans
✗ 1. प्रती

✗ 2. प्र

✗ 3. प्रा

✔ 4. प्रति

Q.3 निम्नलिखित में से 'सकर्मक वाच्य' वाला वाक्य है:

Ans
✗ 1. माता जी पाठ पढ़ाती हैं।

✗ 2. लड़के हँस रहे हैं।

✗ 3. यहाँ नहीं सोया जाएगा।

✔ 4. गरीबों को वस्त्र दिए गए।

Q.4 'मुँह में राम बगल में छुरी'। कहावत का किस अर्थ में प्रयोग होता है?

Ans
✗ 1. शक्ति हीन होने पर भी घमंड न जाना

✗ 2. दूर की चीज़ें अच्छी लगना

✔ 3. देखने में सज्जन, हृदय से कपटी

✗ 4. भक्ति करना ईश्वर दर्शन हेतु

Q.5 'यह पुस्तक मोहन को दे दो।' वाक्य में रेखांकित अंश में कारक है:

Ans
✗ 1. कर्म

✔ 2. संप्रदान

✘ 3. कर्ता

✘ 4. करण

Q.6 'आपने मौलिक बात कही है।' वाक्य में विशेषण पद है:

Question ID : **16794314007**

Ans ✔ 1. मौलिक

✘ 2. कही है

✘ 3. बात

✘ 4. आपने

Q.7 'मोक्ष की इच्छा'। वाक्यांश के लिए एक शब्द है:

Question ID : **16794314010**

Ans ✘ 1. जिगीषा

✔ 2. मुमुक्षा

✘ 3. बुभुक्षा

✘ 4. मुमूर्षा

Q.8 'अल्पप्राण' वर्ण होता हैं, प्रत्येक वर्ग का:

Question ID : **16794313998**

Ans ✘ 1. पहला चौथा तीसरा

✘ 2. चौथा पाँचवां पहला

✔ 3. पहला तीसरा पाँचवां

✘ 4. पहला दूसरा पाँचवां

Q.9 'आदमी' शब्द का बहुवचन (अविभक्तिक) रूप होगा:

Question ID : **16794314013**

Ans ✔ 1. आदमी

✘ 2. आदमियों

✘ 3. आदमीयो!

✘ 4. आदमियाँ

Q.10 'वृक्ष' का पर्यायवाची नहीं है:

Question ID : **16794314012**

Ans ✘ 1. तरु

✘ 2. द्रुम

✘ 3. पेड़

✔ 4. कानन

Q.11 'लालकमल' शब्द में समास है:

Question ID : **16794314004**

Ans ✔ 1. कर्मधारय

✘ 2. द्विगु

✘ 3. तत्पुरूष

✘ 4. अव्ययीभाव

Q.12 'तल्लीन' शब्द बना है:

Question ID : **16794314003**

Ans ✘ 1. त + ल्लीन से

✔ 2. तत् + लीन से

✘ 3. तद + लीन से

✘ 4. तल + लीन से

Q.13 अशुद्ध शब्द कौन-सा है?

Question ID : **16794314000**

Ans ✘ 1. सुजनता

✔ 2. विद्वानता

✘ 3. सफलता

✘ 4. महानता

Q.14 कौन-सा वाक्य ग़लत है?

Question ID : **16794314017**

Ans ✘ 1. अब आप जा सकते हैं।

✘ 2. मैं किताब पढ़कर ही उठूँगा।

✘ 3. मुझे भी कुछ तो बता ही दो।

✔ 4. तुम तुम्हारा काम करो।

Q.15 'सरसराहट' शब्द में प्रत्यय है:

Question ID : **16794314006**

Ans ✘ 1. ट

✘ 2. हट

✘ 3. राहट

✔ 4. आहट

Q.16 'इ, च, श, य' वर्णों का उच्चारण स्थान है:

Question ID : **16794313999**

Ans ✘ 1. कंठ

✔ 2. तालु

✘ 3. ओष्ठ

✘ 4. मूर्धा

Q.17 बताइए 'तद्भव' शब्द कौन-सा है?

Question ID : **16794314009**

Ans ✗ 1. माता

✗ 2. मित्र

✓ 3. भाई

✗ 4. सखा

Q.18 'मोहन चला गया है।' यह वाक्य किस काल का है?

Question ID : **16794314001**

Ans ✗ 1. पूर्ण भूत

✓ 2. आसन्न भूत

✗ 3. अपूर्ण भूत

✗ 4. संदिग्ध भूत

Q.19 'नौ दो ग्यारह होना' मुहावरे का अर्थ है:

Question ID : **16794314015**

Ans ✓ 1. भाग जाना

✗ 2. दौड़ जाना

✗ 3. छिप जाना

✗ 4. हाथ पकड़ना

Q.20 'लौकिक' शब्द का विलोम होता है:

Question ID : **16794314011**

Ans ✗ 1. पारलौकिकता

✗ 2. लोकजन्य

✗ 3. आलौकिक

✓ 4. अलौकिक

Section : **Subject Related**

Q.1 Consider four sets of vectors A, B, C and D in 3. Out of these sets of vectors, one set is linearly dependent in 3. Identify this linearly dependent set.

Question ID : **16794314031**

Ans ✗ 1. $B = \{[1,0,0],[0,1,1],[1,0,1]\}$

✗ 2. $A = \{[1,1,1],[1,1,0],[1,0,0]\}$

✗ 3. $D = \{[1,1,1],[0,1,1],[2,0,1]\}$

✓ 4. $C = \{[1,1,3],[0,2,1],[0,0,0]\}$

Q.2 Let $n > 1$ be fixed and a, b, c, d be arbitrary integers. If $a \equiv b \pmod{n}$ and $c \equiv d \pmod{n}$, then:

Question ID : **16794314018**

Ans ✗ 1.

$a + c \not\equiv b + d \pmod{n}$ and $ac \not\equiv bd \pmod{n}$

✗ 2.

$a + c \not\equiv b + d \pmod{n}$ but $ac \equiv bd \pmod{n}$

✔ 3.

$a + c \equiv b + d \pmod{n}$ and $ac \equiv bd \pmod{n}$

✘ 4.

$a + c \equiv b + d \pmod{n}$ but $ac \not\equiv bd \pmod{n}$

Q.3 Let A be a nonsingular diagonalizable matrix of order 3 with eigenvalues $\lambda_1, \lambda_2, \lambda_3$. Then A^{-1} is diagonalizable if:

Ans

✔ 1. $\lambda_1 = 2, \lambda_2 = 1, \lambda_3 = 3$

✘ 2. $\lambda_1 = 1, \lambda_2 = 2, \lambda_3 = 0$

✘ 3. $\lambda_1 = 0, \lambda_2 = 0, \lambda_3 = 0$

✘ 4. $\lambda_1 = 2, \lambda_2 = 0, \lambda_3 = 0$

Q.4 If $27! \equiv x \pmod{29}$, then the value of x is:

Ans

✔ 1. 1

✘ 2. 0

✘ 3. 27

✘ 4. −1

Q.5 Consider a nonhomogeneous system of 5 linear equations in 4 variables, such that there is at least one variable with a non-zero coefficient in each equation. Then the possible smallest and largest ranks for the corresponding augmented matrix are:

Ans

✔ 1. Smallest = 1, Largest = 5

✘ 2. Smallest = 2, Largest = 5

✘ 3. Smallest = 1, Largest = 4

✘ 4. Smallest = 2, Largest = 4

Q.6 The units digit of 3^{100} is:

Ans

✘ 1. 0

✔ 2. 1

✘ 3. 2

✘ 4. 3

Q.7 Which of the given statements is true?

Ans

✘ 1. Every square matrix is diagonalizable.

✘ 2.

The sum of diagonalizable matrices is also diagonalizable.

✘ 3.

The product of diagonalizable matrices is also diagonalizable.

✔ 4.

If A is a diagonalizable matrix, then A^T is diagonalizable.

Q.8 Identify a subspace of 2 out of four given options:

Ans ✘ 1.

A line in 2 passing through the points (0, 1) and (−1, 0).

✗ 2.

A line in 2 passing through the points (0,−1) and (−1, 0).

✔ 3.

A line in 2 passing through the points (1, 3) and (−1, −3).

✗ 4.

A line in 2 passing through the points (0,−1) and (1, 0).

Q.9 Consider the subset:

$S = \{[3,1,-1],[2,2,-1],[-5,-2,2],[1,3,1]\}$ of 3 . If A is the matrix having columns as vectors of set S, then:

Ans ✔ 1.

the set S is linearly dependent and the matrix A has rank 3.

✗ 2.

the set S is linearly dependent and the matrix A has rank 2.

✗ 3.

the set S is linearly independent and the matrix A has rank 3.

✗ 4.

the set S is linearly independent and the matrix A has rank 2.

Q.10 The real values of x satisfying the inequality:

$$x^{(\log_{10}x)^2-3\log_{10}x+1} > 1000 \text{ are:}$$

Ans ✗ 1. $x > 100$

✔ 2. $x > 1000$

✗ 3. $x > 1$

✗ 4. $x > 10$

Q.11 The system of linear congruences:

$x \equiv 1 \pmod 5$

$x \equiv 3 \pmod 3$

$x \equiv 2 \pmod 7$

Ans ✗ 1.

has a simultaneous solution, which is not unique modulo 105.

✗ 2. has no simultaneous solution.

✔ 3.

has a simultaneous solution, which is unique modulo 105.

✗ 4.

cannot be solved by Chinese Remainder theorem.

Q.12 For any real $x \neq 0$, which of the inequality is true?

Ans

✗ 1. $\left| x + \dfrac{1}{x} \right| < 0$

✗ 2. $\left| \dfrac{1 + x^2}{2x} \right| < 1$

✗ 3. $\left| x + \dfrac{1}{x} \right| < 2$

✓ 4. $\left| x + \dfrac{1}{x} \right| \geq 2$

Q.13 The number of positive divisors of $8 \times 81 \times 125$ is:

Ans
✗ 1. 20

✓ 2. 80

✗ 3. 16

✗ 4. 100

Q.14 Consider the linear congruence $6x \equiv 3 \pmod 9$. Then the incongruent solutions modulo 9 of this congruence are:

Ans
✗ 1. $0, 3, 6$

✗ 2. no solution

✓ 3. $2, 5, 8$

✗ 4. $1, 4, 7$

Q.15 If $a_1, a_2, ..., a_n$ and $b_1, b_2, ..., b_n$ are non-negative real numbers such that $a_1 > b_1, a_2 > b_2, ..., a_n > b_n$, then:

Ans
✓ 1.

$a_1 + a_2 + \cdots + a_n > b_1 + b_2 + \cdots + b_n$ and $a_1 a_2 ... a_n > b_1 b_2 ... b_n$

✗ 2.

$a_1 + a_2 + \cdots + a_n < b_1 + b_2 + \cdots + b_n$ and $a_1 a_2 ... a_n < b_1 b_2 ... b_n$

✗ 3.

$a_1 a_2 ... a_n > b_1 b_2 ... b_n$ but $a_1 + a_2 + \cdots + a_n < b_1 + b_2 + \cdots + b_n$

✗ 4.

$a_1 + a_2 + \cdots + a_n > b_1 + b_2 + \cdots + b_n$ but $a_1 a_2 ... a_n < b_1 b_2 ... b_n$

Q.16 If $x \, (\neq 1)$ is any real number, then $x^3 + 1 > x^2 + x$ if:

Ans
✓ 1. $x > -1$

✗ 2. Inequality doesn't hold for any real x.

✗ 3. $x = -1$

✗ 4. $x < -1$

Q.17 If W is a nonempty subset of real vector space 3 using the same operations, then W is a subspace of 3 if and only if:

Ans
✗ 1.

W is not closed under scalar multiplication but closed under vector addition in 3

✓ 2.

W is closed under vector addition and scalar multiplication in 3

✗ 3.

W is not closed under vector addition but closed under scalar multiplication in 3

✗ 4.

W is neither closed under vector addition nor closed under scalar multiplication in 3

Q.18 A transformation T: 2→2 first reflects points through the vertical axis (x_2 - axis) and then reflects points through the line $x_2 = x_1$. Then the standard matrix of T is:

Ans

✗ 1. $\begin{bmatrix} 0 & -1 \\ 1 & 0 \end{bmatrix}$

✗ 2. $\begin{bmatrix} -1 & 0 \\ 0 & 1 \end{bmatrix}$

✗ 3. $\begin{bmatrix} 1 & 0 \\ 0 & -1 \end{bmatrix}$

✔ 4. $\begin{bmatrix} 0 & 1 \\ -1 & 0 \end{bmatrix}$

Q.19 If a is any integer and $a^3 \equiv x \pmod 9$, then the possible values of x are:

Ans

✗ 1. 5, 6, 7

✔ 2. 0, 1, 8

✗ 3. 3, 5, 7

✗ 4. 2, 4, 6

Q.20 If p and q are distinct primes with $a^p \equiv a \pmod q$ and $a^q \equiv a \pmod p$, then:

Ans

✗ 1. $a^{pq} \equiv -a \pmod{pq}$

✔ 2. $a^{pq} \equiv a \pmod{pq}$

✗ 3. $a^{pq} \equiv 0 \pmod{pq}$

✗ 4. $a^{pq} \equiv 1 \pmod{pq}$

Section : **Subject Related**

Q.1 The general solution of recurrence relation

$$a_r - 5a_{r-1} + 6a_{r-2} = 4^r, r \geq 2 \text{ is:}$$

Ans

✗ 1.

$A_1 . 2^r + A_2 . 3^r - \frac{1}{8} . 4^r$, where A_1 and A_2 are arbitrary constants.

✗ 2.

$A_1 . 5^r + A_2 . 6^r + 8 . 4^r$, where A_1 and A_2 are arbitrary constants.

✔ 3.

$A_1 . 2^r + A_2 . 3^r + 8 . 4^r$, where A_1 and A_2 are arbitrary constants.

✗ 4.

$A_1 . 2^r + A_2 . 4^r + \frac{1}{8} . 3^r$, where A_1 and A_2 are arbitrary constants.

Q.2 If the point P(x,y) is equidistant from the points A($a + b$, $b - a$) and B($a - b$, $a+b$), then:

Ans

✗ 1. $x = ay$

✗ 2. $y = bx$

3. ✗ $ax = by$

4. ✔ $bx = ay$

Q.3 In the expansion of $\left(5^{\frac{1}{3}} + 2^{\frac{1}{7}}\right)^{21}$, the sum of all rational terms is:

Ans ✗ 1. 78117

✔ 2. 78133

✗ 3. 78149

✗ 4. 78125

Q.4 Two candidates attempted the problem, $x^2 + px + q = 0$. One started with a wrong value of p and got the roots -1 and -9, whereas the other started with an incorrect value of q and get the roots 2 and 8. Find the correct roots.

Ans ✗ 1. 9 and -2

✗ 2. 8 and -9

✗ 3. -1 and 2

✔ 4. 1 and 9

Q.5 If there are m arithmetic progressions with the first term of each being unity and common differences as $1,2,3,\ldots,$ m respectively, then the sum of their n^{th} terms is:

Ans ✗ 1. $\frac{n}{2}[mn + m - n + 1]$

✗ 2. $\frac{m}{2}[mn + m - n + 1]$

✗ 3. $\frac{n}{2}[mn - m + n + 1]$

✔ 4. $\frac{m}{2}[mn - m + n + 1]$

Q.6 If A $(6, 3)$, B $(-3, 5)$, C $(4, -2)$ and D $(x, 3x)$ are four points with $\frac{Area(\Delta DBC)}{Area(\Delta ABC)} = \frac{3}{2}$, then the value of x is:

Ans ✗ 1. $\frac{23}{8}$

✗ 2. $\frac{177}{56}$

✗ 3. $\frac{173}{56}$

✔ 4. $\frac{25}{8}$

Q.7 Consider three quadratic equations, $x^2 + ax + bc = 0$, $x^2 + bx + ca = 0$, $x^2 + cx + ab = 0$. If each pair of these equations has a common root, then the sum and product of these common roots are:

Ans ✗ 1. $Sum = \frac{-(a+b+c)}{2}$, $Product = a^2 b^2 c^2$

✔ 2. $Sum = \frac{-(a+b+c)}{2}$, $Product = abc$

✗ 3. $Sum = \frac{a+b+c}{2}$, $Product = a^2 b^2 c^2$

✗ 4. $Sum = \frac{a+b+c}{2}$, $Product = 2abc$

Q.8 If a_1, a_2, b_1, b_2 are non-zero real numbers, then which of the inequalities is true?

Ans

✗ 1. $(a_1^2 + a_2^2)(b_1^2 + b_2^2) < (a_1 b_1 + a_2 b_2)^2$

✗ 2. $(a_1^2 + a_2^2)(b_1^2 + b_2^2) \geq (a_1 b_1 + a_2 b_2)^3$

✔ 3.

$$a_1 b_1 + a_2 b_2 \leq \left| \sqrt{a_1^2 b_1^2 + a_1^2 b_2^2 + a_2^2 b_1^2 + a_2^2 b_2^2} \right|$$

✗ 4. $a_1^2 + a_2^2 \geq (a_1 b_1 + a_2 b_2)^2 (b_1^2 + b_2^2)$

Q.9 Consider the quadratic equation $ax^2 + bx + c = 0$, where $a, b, c \in \mathbb{C}$. Which of the following statements is true for this equation?

Ans

✗ 1. Roots will not exist.

✗ 2.

Roots will be complex and exist in conjugate pair.

✔ 3.

Roots will be complex and need not be in conjugate pair.

✗ 4. Roots will be complex and equal.

Q.10 The sum of n terms of four arithmetical progressions are S_1, S_2, S_3 and S_4, with the first term of each as 2 and the common differences as 1,3,5 and 7 respectively. Then:

Ans

✗ 1. $S_4 + S_3 = S_1 + S_2$

✗ 2. $S_4 + S_2 = S_1 + S_3$

✗ 3. $S_4 + S_1 + S_2 = 2S_3$

✔ 4. $S_4 + S_1 = S_2 + S_3$

Q.11 To prove anything with the pigeon-hole principle, we must have:

Ans

✔ 1. more pigeons than holes

✗ 2. same number of pigeons and holes

✗ 3. less pigeons than holes

✗ 4. either pigeons or holes

Q.12 The ends of one diagonal of a parallelogram are the points $(-6, 2)$ and $(2, -4)$. Third vertex is the point $(5, 2)$. Then the coordinates of the fourth vertex are:

Ans

✔ 1. $(-9, -4)$

✗ 2. $(9, -4)$

✗ 3. $(9, 4)$

✗ 4. $(-9, 4)$

Q.13 If $f(x)$ is a periodic function and α is a positive real number such that $f(x + 2\alpha) + f(x) = 0$ for all $x \in \mathbb{R}$, then the period of $f(x)$ is:

Ans

✔ 1. 4α

✗ 2. 2α

✗ 3. α

✗ 4. $\dfrac{\alpha}{2}$

Q.14 The distance of the highest point on the graph of the function $y = \sqrt{3}\cos x + \sin x$ from the x-axis is:

Question ID : **16794314056**

Ans

✗ 1. $\dfrac{1}{2}$

✗ 2. $\dfrac{\sqrt{3}}{2}$

✗ 3. $\dfrac{2}{\sqrt{3}}$

✓ 4. 2

Q.15 If $(a, b), (x_1, y_1)$ and (x_2, y_2) are the vertices of a triangle such that the x-coordinates a, x_1, x_2 are in geometric progression with common ratio r and the y-coordinates b, y_1, y_2 are also in geometric progression with common ratio s, then the area of the triangle is:

Question ID : **16794314046**

Ans

✓ 1. $\dfrac{1}{2}ab(r-1)(s-1)(s-r)$

✗ 2. $ab(r-1)(s-1)(s-r)$

✗ 3. $\dfrac{1}{2}ab(r-1)(s-1)(s+r)$

✗ 4. $ab(r-1)(s-1)(s+r)$

Q.16 Roots of the quadratic equation $x^2 - 2i\,x + 3 = 0$ are:

Question ID : **16794314042**

Ans

✓ 1. $3i, -i$

✗ 2. $3i, i$

✗ 3. $\pm 3i$

✗ 4. $-3i, -i$

Q.17 How many cards must be picked from a standard pack of 52 cards to surely get 2 cards of the same suit? (Club, Diamond, Heart and Spade are the suits.)

Question ID : **16794314050**

Ans

✗ 1. 4

✓ 2. 5

✗ 3. 2

✗ 4. 3

Q.18 Among any group of 11 integers, the number of integers with the same remainder when they are divided by 10 is:

Question ID : **16794314051**

Ans

✓ 1. atleast 2

✗ 2. atleast 5

✗ 3. atmost 5

✗ 4. exactly 3

Q.19 $A_1\,(x_1, y_1),\ A_2(x_2, y_2),\ A_3(x_3, y_3)$ and $A_4\,(x_4, y_4)$ are 4 points. P_1 divides A_1A_2 in the ratio 1 : 1, P_2 divides P_1A_3 in the ratio 1 : 2, P_3 divides P_2A_4 in the ratio 1 : 3. Then the coordinates of P_3 are:

Question ID : **16794314047**

Ans

✓ 1. $\left(\dfrac{x_1 + x_2 + x_3 + x_4}{4}, \dfrac{y_1 + y_2 + y_3 + y_4}{4}\right)$

✗ 2. $\left(\dfrac{x_2 + x_4}{2}, \dfrac{y_2 + y_4}{2}\right)$

✗ 3. $\left(\dfrac{x_1 + x_2 + x_3}{3}, \dfrac{y_1 + y_2 + y_3}{3}\right)$

✗ 4. $\left(\dfrac{x_1 + x_3}{2}, \dfrac{y_1 + y_3}{2}\right)$

Q.20 If $a, b, c \in \mathbb{R}^+$ and are in arithmetic progression, then the roots of the quadratic equation $ax^2 + bx + c = 0$ are imaginary for:

Question ID : **16794314041**

Ans

✗ 1. $\left|\dfrac{c}{a} - 7\right| < 3\sqrt{2}$

✗ 2. $\left|\dfrac{c}{a} - 7\right| \geq 4\sqrt{3}$

✗ 3. $\left|\dfrac{c}{a} - 7\right| > 3\sqrt{2}$

✔ 4. $\left|\dfrac{c}{a} - 7\right| < 4\sqrt{3}$

Section : **Subject Related**

Q.1 Which of the following equations is a linear equation in two variables?

Question ID : **16794314063**

Ans

✗ 1. $(x - 1)(y + 2) = 0$

✔ 2. $2x - 3y + 7 = 0$

✗ 3. $7x - 3y + 2z = 0$

✗ 4. $(y + x)^2 - 2 = 0$

Q.2

Question ID : **16794314059**

The function $f(x) = \begin{cases} \dfrac{|x|}{3x^2 - 5x}, & x \neq 0 \\ 0, & x = 0 \end{cases}$

is not continuous at $x=0$, because

Ans

✗ 1. $\lim\limits_{x \to 0} f(x) \neq f(0)$

✗ 2. $\lim\limits_{x \to 0^-} f(x)$ does not exist

✔ 3. $\lim\limits_{x \to 0} f(x)$ does not exist

✗ 4. $\lim\limits_{x \to 0^+} f(x)$ does not exist

Q.3 A pair of linear equations in two variables x and y

Question ID : **16794314068**

$b_1 x + c_1 y = a_1, c_2 x + a_2 y = b_2$

has infinite number of possible solutions if:

Ans

✗ 1. $\dfrac{a_1}{a_2} = \dfrac{b_1}{b_2} = \dfrac{c_1}{c_2}$

✗ 2. $\dfrac{a_1}{b_2} \neq \dfrac{b_1}{c_2}$

✗ 3. $\dfrac{b_1}{c_2} = \dfrac{c_1}{a_2} \neq \dfrac{a_1}{b_2}$

✔ 4. $\dfrac{a_1}{b_2} = \dfrac{b_1}{c_2} = \dfrac{c_1}{a_2}$

Q.4 If a pair of equations in two variables x and y is represented graphically by two straight lines L_1 and L_2 intersecting each other at the point $\left(\frac{a+b}{2}, 2ab\right)$, then a solution of given equations will be:

Ans

✔ 1. $x = \dfrac{a+b}{2}, y = 2ab$

✗ 2. $x = 2ab, + y = \dfrac{a+b}{2}$

✗ 3. $x = \dfrac{2}{a+b}, y = \dfrac{1}{2ab}$

✗ 4. $x = a+b, y = ab$

Q.5 Find out the fallacy if any in the statement:

"The mean and the variance of a binomial distribution is 16.2 and 29.4 respectively."

Ans

✔ 1. $q = \dfrac{49}{27}$ is not possible.

✗ 2. The statement is true.

✗ 3. $p = \dfrac{47}{27}$ is not possible.

✗ 4. $p = \dfrac{49}{27}$ is not possible.

Q.6 If $f(x) = \sum\limits_{i=0}^{2k}\left(a_i |x|^i + b_i \sin^2 x\right)$, where a_i's and b_i's $(0 \leq i \leq k)$ are real constants, then $f(x)$ is:

Ans

✔ 1.

differentiable at $x=0$ for all $a_{2m+1} = 0, 0 \leq m \leq k-1$.

✗ 2.

differentiable at $x=0$ for all $a_{2m} = 0, 0 \leq m \leq k$.

✗ 3.

not differentiable at $x=0$ for all real a_i's and b_i's.

✗ 4.

differentiable at $x=0$ for all real a_i's and b_i's.

Q.7 If 3 hen together are worth ₹21 and 5 chicks together ₹20, then how many hen and chicks, cannot be bought for ₹100?

Ans

✗ 1. 12 hen and 4 chicks

✔ 2. 16 hen and 2 chicks

✗ 3. 4 hen and 18 chicks

✗ 4. 8 hen and 11 chicks

Q.8 If X is a random variable that takes on any of the values $x_i, i \geq 1$ with respective probabilities $p(x_i)$, and E[X] denote the expected value of X, then $E[ax^2 + bx + c]$ is:

Ans

✔ 1. $\displaystyle\sum_i (ax_i^2 + bx_i + c)p(x_i)$

✗ 2. $\displaystyle\sum_i \{a(x_i p(x_i))^2 + b(x_i p(x_i)) + c\}$

✗ 3. $\displaystyle\sum_i x_i\, p(x_i)$

✗ 4. $\displaystyle\sum_i x_i^2\, p(x_i)$

Q.9 Which of the following equations doesn't have the solution (7, –9)?

Ans

✗ 1. $6y - 3x + 75 = 0$

✔ 2. $7y - 9x + 1 = 0$

✗ 3. $\dfrac{3}{2}x + \dfrac{5}{4}y + \dfrac{3}{4} = 0$

✗ 4. $2x + 3y + 13 = 0$

Q.10 If X is a random variable with Mean μ, then the variance of X, denoted by Var (X) is given by:

Ans

✗ 1. $\text{Var (X)} = E[X] - \mu^2$

✗ 2. $\text{Var (X)} = E[X^2] - \mu$

✔ 3. $\text{Var (X)} = E[(X - \mu)^2]$

✗ 4. $\text{Var (X)} = E[X - \mu]$

Q.11 The antiderivative F(x) of the function $f(x) = \dfrac{1}{(\log x)^2} + \log(\log x)$ such that $F(e) - e$, will be:

Ans

✔ 1. $x\log(\log x) - x\left(\dfrac{1}{\log x}\right) + 2e$

✗ 2. $x\log(\log x) - x\log x - 2e$

✗ 3. $\log(\log x) - x\log x - e$

✗ 4. $\log(\log x) + x\log x + e$

Q.12 If the straight line L having y- intercept as $\frac{1}{2}$ passes through the solution of the pair of equations in two variables x and y given as, $3x + 4y = 11, 7x - 2y = 3$, then the angle made by the straight line L with the positive direction of x– axis is :

Ans

✗ 1. $45°$

✔ 2. $\tan^{-1}\left(\dfrac{3}{2}\right)$

✗ 3. $\tan^{-1}\left(\dfrac{1}{2}\right)$

✗ 4. 30 °

Q.13 What should be the value of k so that the linear equation in two variables x and y, $31x + 124y = k$ has integer-valued solutions?

Ans ✗ 1. 103

✗ 2. 134

✔ 3. 155

✗ 4. 72

Q.14 Which of the given equations in variables x and y has integer-valued solutions?

Ans ✔ 1. $12x + 16y = 8$

✗ 2. $12x + 16y = 5$

✗ 3. $12x + 16y = 6$

✗ 4. $12x + 16y = 7$

Q.15 In a game there are three rooms- I, II and III. Room I contains 2 boxes having gift items and 3 empty boxes, room II contains 3 boxes having gift items and 2 empty boxes, and room III contains 4 boxes having gift items and one empty box respectively. There is equal probability of each room being chosen by a player. Mr. John selects one box from a room chosen at random. The probability that Mr. John wins a box having gift items is:

Ans ✗ 1. $\dfrac{4}{5}$

✗ 2. $\dfrac{2}{5}$

✔ 3. $\dfrac{3}{5}$

✗ 4. $\dfrac{1}{5}$

Q.16 If a rectangle has perimeter 96 meters and its length is three times its breadth, then the area of the rectangle is:

Ans ✗ 1. 436 cubic meters

✗ 2. 436 sq. meters

✔ 3. 432 sq. meters

✗ 4. 432 cubic meters

Q.17 If $\lim\limits_{x \to \infty} \left(\dfrac{x^2 + 5}{2x + 3} - ax - b \right) = \infty$, then the values of a and b are:

Ans ✗ 1. $a = \dfrac{1}{2}, b \notin \mathbb{R}$

✔ 2. $a \neq \dfrac{1}{2}, b \in \mathbb{R}$

✗ 3. $a = \dfrac{1}{2}, b \in \mathbb{R}$

✗ 4. $a \neq \dfrac{1}{2}, b \notin \mathbb{R}$

Q.18 If $\int \dfrac{\sin x}{\cos(x - a)} dx = Ax + B \log|\sec(x - a)| + c$, where A, B and c are real constants, then:

Ans ✗ 1. $A = \sin a, B \epsilon \mathbb{R}, c = \cos a$

✗ 2. $A = \cos a, B = \sin a, c \epsilon \mathbb{R}$

✗ 3. $A \epsilon \mathbb{R}, B = \cos a, c = \sin a$

✔ 4. $A = \sin a, B = \cos a, c \epsilon \mathbb{R}$

Q.19 A student solved 30 questions of Algebra and Analysis for 2 hours 40 minutes. If each question of Algebra and Analysis takes 5 minutes and 6 minutes respectively, then the student has solved:

Question ID : **16794314073**

Ans ✗ 1.

Algebra : 15 questions, Analysis: 15 questions

✗ 2.

Algebra : 10 questions, Analysis: 20 questions

✗ 3.

Algebra : 16 questions, Analysis: 14 questions

✔ 4.

Algebra : 20 questions, Analysis: 10 questions

Q.20 If two straight lines in xy-plane representing a pair of linear equations in two variables x and y overlap each other, then the pair of equations representing these lines will:

Question ID : **16794314069**

Ans ✔ 1. have infinite many solutions

✗ 2. have no possible solution

✗ 3. be inconsistent

✗ 4. have a unique solution

Section : **Subject Related**

Q.1 Any positive integer is of the form:

Question ID : **16794314097**

Ans ✗ 1.

6q or 6q+2 or 6q+4, where q is some non-negative integer.

✔ 2.

3q or 3q+1or 3q+2, where q is some non-negative integer.

✗ 3.

6q+1 or 6q+3 or 6q+5, where q is some non-negative integer.

✗ 4.

6q or 6q+1or 6q+2, where q is some non-negative integer.

Q.2 The general values of x for which $\sin x + \cos x = \min_{ae}\{1, a^2 - 4a + 7\}$ are given as:

Question ID : **16794314082**

Ans ✔ 1. $n\pi + \{(-1)^n - 1\}\dfrac{\pi}{4}$

✗ 2. $n\pi + (-1)^n \dfrac{\pi}{2}$

✗ 3. $2n\pi + \dfrac{\pi}{4}$

4. $2n\pi + (-1)^n \dfrac{\pi}{2}$ ✗

Q.3 The number 19.999... in the form $\frac{p}{q}$, where p and q are integers and $q \neq 0$, can be written as:

Question ID : **16794314094**

Ans

✗ 1. $\dfrac{199}{10}$

✗ 2. $\dfrac{1999}{100}$

✔ 3. 20

✗ 4. $\dfrac{81}{100}$

Q.4 Two hotels stand 25 m apart. One of them is 70 m high and the angle of depression of the top of other as observed from the top of this hotel is 45°. Height of the other hotel is:

Question ID : **16794314085**

Ans ✗ 1. 46 m

✗ 2. 44 m

✗ 3. 43 m

✔ 4. 45 m

Q.5 In a $\triangle ABC$, let D, E, F be the points on lines BC, CA and AB respectively such that lines AD, BE and CF are concurrent.

If $\dfrac{CE}{EA} = \dfrac{3}{5}, \dfrac{BD}{DC} = \dfrac{5}{7}$, and side AB has length 14cm, then the lengths of AF and FB will be:

Question ID : **16794314091**

Ans

✗ 1. AF = 3 cm, FB = 7 cm

✗ 2. AF = 7 cm, FB = 7 cm

✔ 3. AF = 9.8 cm, FB = 4.2 cm

✗ 4. AF = 9 cm, FB = 5 cm

Q.6 Consider a population which is finite, and sampling is with replacement. If the variance of the population is 2176.8 with sample size of 16, then the variance of the sampling distribution of means is:

Question ID : **16794314078**

Ans ✗ 1. 137.04

✗ 2. 135.21

✔ 3. 136.05

✗ 4. 134.12

Q.7 The median for a moderately asymmetrical series having mode and mean as 125 km and 130.7 km respectively is:

Question ID : **16794314088**

Ans ✗ 1. 129.7 m

✗ 2. 128.8 m

✗ 3. 124.8 m

✔ 4. 128.8 km

Q.8 Which of the following is a rational number:

Question ID : **16794314095**

Ans

✗ 1. $\left(4+\sqrt{5}\right)\left(4+\sqrt{5}\right)$

✗ 2. $\left(4-\sqrt{5}\right)\left(4-\sqrt{5}\right)$

✔ 3. $\left(4+\sqrt{5}\right)\left(4-\sqrt{5}\right)$

✗ 4. $\left(4+\sqrt{5}\right)-\left(4-\sqrt{5}\right)$

Q.9 For 4 data points of two correlated variables x and y, it is given that

$\Sigma x = 24$, $\Sigma y = 11$, $\Sigma x^2 = 202$, $\Sigma xy = 84$, $\Sigma y^2 = 39$.

Fit a least squares line to this data using x as independent variable.

Ans

✗ 1. $y = \dfrac{1}{116}(36 + 103x)$

✗ 2. $x = \dfrac{1}{116}(36 + 103y)$

✗ 3. $x = \dfrac{1}{116}(103 + 36y)$

✔ 4. $y = \dfrac{1}{116}(103 + 36x)$

Q.10 Which of the given relation is true?

Ans

✗ 1. $\cos 1° < \cos 1$

✗ 2. $\cos 1° = \cos 1$

✔ 3. $\cos 1° > \cos 1$

✗ 4. $\cos 1° = \dfrac{\pi}{180}\sin 1$

Q.11 What should be filled at the places of 1, 2, and 3 to make the statement correct? Histogram is a set of adjacent _____ whose _____ are proportional to the _____.

Ans

✔ 1. rectangles; areas; frequencies

✗ 2. triangles; parameters; frequencies

✗ 3. triangles; areas; item size

✗ 4. rectangles; parameters; item size

Q.12 A vertical pole AB has two marks at C and D such that AC, AD and AB subtend angles α, β, Y from a point on the ground which is at a distance of x from the pole. If AC = a, AD = b, AB = c and $\alpha + \beta + Y = 180°$, then x is equal to:

Ans

✗ 1. $\dfrac{abc}{\sqrt{a+b+c}}$

✔ 2. $\sqrt{\dfrac{abc}{a+b+c}}$

✗ 3. $\dfrac{\sqrt{abc}}{a+b+c}$

✗ 4. $\sqrt{\dfrac{1}{a} + \dfrac{1}{b} + \dfrac{1}{c}}$

Q.13 Consider a straight line L. The number of straight lines passing through a point P which are parallel to L is:

Ans

✗ 1. Infinite

✔ 2. 1

✗ 3. 2

✗ 4. 0

Q.14

Simplify: $7^{\frac{5}{2}+\frac{7}{9}}$

Ans

✗ 1. $\dfrac{7^{\frac{5}{2}}}{7^{\frac{7}{9}}}$

✗ 2. $7^{\frac{5}{2}} - 7^{\frac{9}{2}}$

✓ 3. $7^{\frac{5}{2}} \cdot 7^{\frac{7}{9}}$

✗ 4. $7^{\frac{5}{2}} + 7^{\frac{9}{2}}$

Q.15 In the given figure, BC ∥ RS, ∠RAQ = ∠BAC, ∠SAD = 52°, then the value of x is:

Ans

✓ 1. 64°

✗ 2. 26°

✗ 3. 38°

✗ 4. 52°

Q.16 For a given series of items, if we subtract 'a' from every item and divide every item by 'b', then arithmetic mean of the series:

Ans

✗ 1. increases by 'a' and divided by 'b'

✗ 2. diminishes by 'a' and multiplied by 'b'

✗ 3. increases by 'a' and multiplied by 'b'

✓ 4. diminishes by 'a' and divided by 'b'

Q.17 A circle has:

Ans

✗ 1. no two chords of equal length

✓ 2. infinite number of equal chords

✗ 3. exactly two chords of equal length

✗ 4. finite number of equal chords

Q.18 The curves that occur for a distribution in which class-frequencies go on decreasing symmetrically on either side of central value, are called:

Ans

✗ 1. moderately asymmetrical curves

✗ 2. U-shaped curves

✗ 3. extremely asymmetrical curves

✓ 4. symmetrical curves

Q.19 For two correlated variables x and y, if coefficient of correlation between x and y is 0.8014, variance of x and y are 16 and 25 respectively. Then the covariance between x and y is:

Ans

✗ 1. 162.08

✔ 2. 16.028

✘ 3. 160.28

✘ 4. 16.208

Q.20 If $\sin^{-1}\left(\frac{2a}{1+a^2}\right) - \cos^{-1}\left(\frac{1-b^2}{1+b^2}\right) = \tan^{-1}\left(\frac{2x}{1-x^2}\right)$, then the value of x is:

Question ID : **16794314083**

Ans

✔ 1. $\frac{a-b}{1+ab}$

✘ 2. $\frac{a+b}{1-ab}$

✘ 3. $\frac{1+ab}{a+b}$

✘ 4. $\frac{1-ab}{a-b}$

Section : **Subject Related**

Q.1 An equilateral triangle of side 10 m is to be painted on a wall. If the cost of painting is ₹ 15 per m², then the cost to paint the triangle is:

Question ID : **16794314104**

Ans ✘ 1. ₹ 549.5

✘ 2. ₹ 559.5

✘ 3. ₹ 659.5

✔ 4. ₹ 649.5

Q.2 Find the two numbers whose sum is 30 and product of whose HCF and LCM is 224.

Question ID : **16794314098**

Ans ✘ 1. 13, 17

✔ 2. 14, 16

✘ 3. 11, 19

✘ 4. 12, 18

Q.3 The volume of an open cubical box having surface area 125 m² is:

Question ID : **16794314106**

Ans ✘ 1. 625 m³

✔ 2. 125 m³

✘ 3. 125 m²

✘ 4. 625 m²

Q.4 The area of quadrilateral ABCD with AB = 12 cm, BC = 17 cm, AC = 25 cm, AD = 24 cm, ∠CAD = 90° will be:

Question ID : **16794314105**

Ans ✘ 1. 300 cm²

✘ 2. 410 cm²

✔ 3. 390 cm²

✘ 4. 180 cm²

Q.5 If $x + 5$ is a factor of the polynomial $x^3 + ax^2 + ax - 15$, then the value of a is:

Question ID : **16794314100**

Ans ✘ 1. −9

✔ 2. 7

✗ 3. 9

✗ 4. 8

Q.6 Which of the following is not a polynomial in one variable?

Ans

✗ 1. $\left(x^{\frac{-1}{2}} + x^{\frac{1}{2}}\right)\left(x^{\frac{1}{2}} - x^{\frac{3}{2}}\right)$

✗ 2. $\left(x^{\frac{3}{2}} - \sqrt{2}\right)\left(x^{\frac{3}{2}} + \sqrt{2}\right)$

✔ 3. $\left(x^{\frac{-3}{2}} - x^{\frac{-1}{2}}\right)\left(x^{\frac{1}{2}} + x^{\frac{5}{2}}\right)$

✗ 4. $\left(x^{\frac{3}{2}} + 2\sqrt{x}\right)x^{\frac{5}{2}}$

Q.7 At how many points does the polynomial $x^3 - x^2 + x - 1$ intersects the x-axis?

Ans
✗ 1. 3

✗ 2. 2

✔ 3. 1

✗ 4. 0

Q.8 If $(x + a)$ is the greatest common divisor of $x^2 - qx + p$ and $x^2 + mx - n$, then the value of 'a' is given as:

Ans

✗ 1. $\dfrac{p + n}{m - q}$

✔ 2. $\dfrac{-n - p}{q + m}$

✗ 3. $\dfrac{q - m}{n + p}$

✗ 4. $\dfrac{p - n}{q + m}$

Q.9 Which of the following is a binomial in one variable of degree 5?

Ans
✗ 1. $(x^5 - 1)^2 - (x^5 + 1)^2 + 5x^5$

✗ 2. $(x^5 + 1)^2 + (x^5 - 1)^2$

✔ 3. $(x^5 + 1)^2 + (x^5 - 1)^2 - 2(x^{10} - x^5)$

✗ 4. $(x^5 - 1)(x^5 + 1)$

Q.10 Consider a frustum of a right circular cone such that its lateral surface area is 337 cm² and sum of squared radii of lower and upper base is 154 cm. The total surface area of the frustum is:

Ans
✗ 1. 491 cm^2

✔ 2. 821 cm^2

✗ 3. 941 cm^2

✗ 4. 812 cm^2
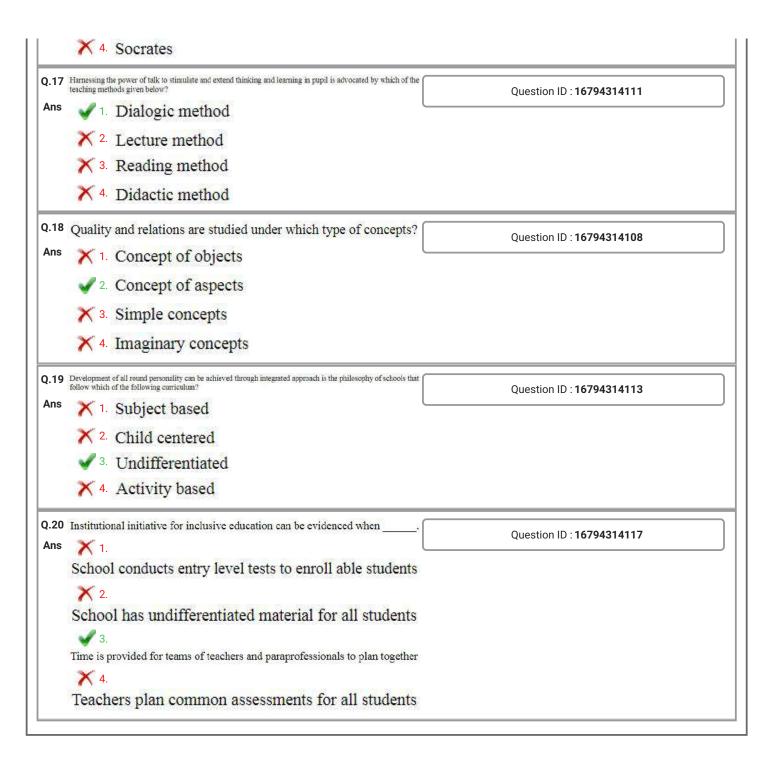
Q.11 Phonics approach facilitates reading because it _____

Choose the best option to complete the sentence.

Ans ✗ 1. Allows reader to focus

✗ 2. Improves attention span

✓ 3. Build sound-letter relationships

✗ 4. Makes reading interesting

Q.12 Pre-Natal Diagnostic Techniques(Regulation and Prevention of Misuse) Act,1994, is a constitutional guarantee that checks on:

Ans ✗ 1. Female child mortality

✓ 2. Female foeticide

✗ 3. Infant mortality

✗ 4. Mother mortality

Q.13 "Repetitions in learning can strengthen the connections and disuse can weaken the connections" is a classroom implication of which of the following theories?

Ans ✓ 1. Trial and error method

✗ 2. Discovery method of learning

✗ 3. Operant conditioning

✗ 4. Classic conditioning

Q.14 Integrated Education for Disabled Children (IEDC) was established with an objective to _____.

Complete the statement with the right option from the following.

Ans ✗ 1.
Providing educational opportunities only to children to physical disabilities

✓ 2.
Providing educational opportunities to all children with disabilities under the general school system

✗ 3.
Providing guidance to all children with special education needs

✗ 4.
Providing educational opportunities for children with mental disabilities

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Q.15 Methods and theories of learning are dealt with under which of the following disciplines?

Ans ✗ 1. Educational sociology

✓ 2. Educational psychology

✗ 3. Educational technology

✗ 4. Educational philosophy

Q.16 "Art is the response of man's creative soul to the call of the real" Which philosopher said the above statement?

Ans ✗ 1. Swamy Vivekananda

✓ 2. Rabindranath Tagore

✗ 3. Mathatma Gandhi

✗ 4. Socrates

Q.17 Harnessing the power of talk to stimulate and extend thinking and learning in pupil is advocated by which of the teaching methods given below?

Question ID : **16794314111**

Ans ✔ 1. Dialogic method

✗ 2. Lecture method

✗ 3. Reading method

✗ 4. Didactic method

Q.18 Quality and relations are studied under which type of concepts?

Question ID : **16794314108**

Ans ✗ 1. Concept of objects

✔ 2. Concept of aspects

✗ 3. Simple concepts

✗ 4. Imaginary concepts

Q.19 Development of all round personality can be achieved through integrated approach is the philosophy of schools that follow which of the following curriculum?

Question ID : **16794314113**

Ans ✗ 1. Subject based

✗ 2. Child centered

✔ 3. Undifferentiated

✗ 4. Activity based

Q.20 Institutional initiative for inclusive education can be evidenced when _____.

Question ID : **16794314117**

Ans ✗ 1.
School conducts entry level tests to enroll able students

✗ 2.
School has undifferentiated material for all students

✔ 3.
Time is provided for teams of teachers and paraprofessionals to plan together

✗ 4.
Teachers plan common assessments for all students

DSSSB SEP 2018

Participant ID:	**HaryanaJobs.in**
Participant Name:	
Test Center Name:	
Test Date:	23/09/2018
Test Time:	2:00 PM - 4:00 PM
Subject:	TGT MATHS MALE

Section : **Mental Ability**

Q.1 If + means –, × means ÷, ÷ means +, and – means ×, then what is the value of $320 \times 4 - 7 + 20 \div 38$?

Question ID : **16794315341**

Ans
- ✗ 1. 600
- ✗ 2. 585
- ✗ 3. 582
- ✔ 4. 578

Q.2 Find the odd pair of words.

Question ID : **16794315344**

Ans
- ✗ 1. Moon : Earth
- ✗ 2. Wheel : Axle
- ✔ 3. Star : Galaxy
- ✗ 4. Mercury : Sun

Q.3 Choose the odd figure in the series.

Question ID : **16794315330**

Ans
- ✔ 1. D
- ✗ 2. B
- ✗ 3. C
- ✗ 4. A

Q.4 What will be next term in the series?

Question ID : **16794315346**

4, 16, 36, 64, 100, ?

Ans
- ✗ 1. 149
- ✗ 2. 153
- ✔ 3. 144
- ✗ 4. 162

Q.5 What will be the next term in the following series?

Question ID : **16794315347**

M, S, X, B, E, ?

Ans
- ✔ 1. G
- ✗ 2. T
- ✗ 3. F
- ✗ 4. K
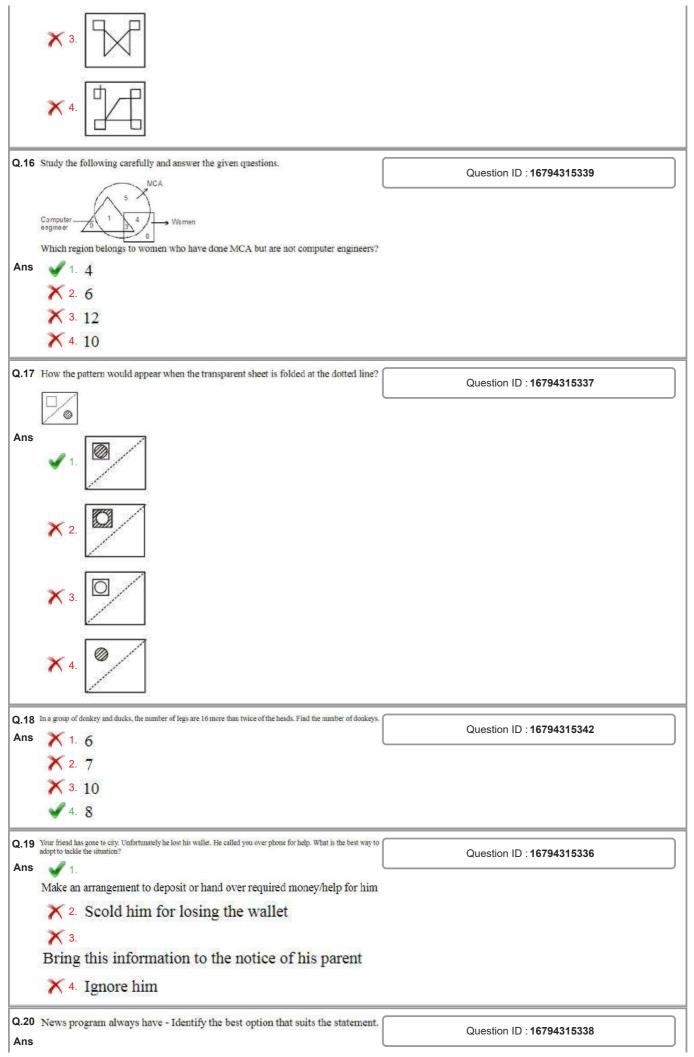
Q.6 Nandu fitness club gives 30% concession in the monthly fee to those belong to any of the following categories
(i) college students of age group 19 to 26 years
(ii) unemployed youth of age group 25 years to 40 years
(iii) senior citizens of age 50 years and above
(iv) Service men/ex-servicemen of police/Defence forces.
(v) Sons and daughters of donors/founders of the fitness club.
Vasavi was a police officer. He retired last year as S.I. He wants to join the Nandu's fitness club. For monthly package of ₹ 5000/- how much he needs to pay after concession?

Question ID : **16794315335**

Ans ✘ 1. ₹ 1500/-

✘ 2. ₹ 2500/-

✔ 3. ₹ 3500/-

✘ 4. ₹ 500/-

Q.7 शेफ, फूड से उसी प्रकार से संबंधित है जैसे दर्जी निम्नलिखित से संबंधित है?

Question ID : **16794315328**

Ans ✘ 1. खेल

✔ 2. वस्त्र

✘ 3. नृत्य नाटक

✘ 4. मांस

Q.8 Archana is sister of Radha. How is Radhas mother's sister related to Archana?

Question ID : **16794315340**

Ans ✘ 1. Grand mother

✔ 2. Aunt

✘ 3. Sister

✘ 4. Mother

Q.9 Find the odd pair of numerals.

Question ID : **16794315345**

Ans ✘ 1. 8 - 128

✘ 2. 12 - 288

✘ 3. 6 - 72

✔ 4. 7 - 100

Q.10 Choose the odd figure in the series.

Question ID : **16794315331**

Ans ✘ 1. C

✘ 2. B

✘ 3. A

✔ 4. D

Q.11 The ratio between the present ages of A and B is 5 : 4. If A is 3 years older than B, what will be the ratio of the ages of A and B after 3 years?

Question ID : **16794315343**

Ans ✘ 1. 4 : 7

✘ 2. 2 : 1

✘ 3. 8 : 3

✔ 4. 6 : 5

Q.12

Question ID : **16794315333**

The following pie diagram shows information about the crop cultivation for the pulses & grains in "XYZ" state for the year of 2015-2016. Read the information and answer the questions
The total crop produced in "XYZ" state is 23,428 tonnes.

How much crop of wheat is cultivated in "XYZ" state during 2015-16?

Ans
✗ 1. 4685.6 tonnes
✗ 2. 7028.4 tonnes
✔ 3. 8199.8 tonnes
✗ 4. 8118.99 tonnes

Q.13 Choose the odd figure in the series.

Question ID : **16794315332**

A   B   C   D

Ans
✗ 1. D
✗ 2. A
✔ 3. C
✗ 4. B

Q.14 Choose the similar figure in the options.

Question ID : **16794315329**

Ans

✗ 1.

✗ 2.

✔ 3.

✗ 4.

Q.15 Find the embedded figure given below from the options.

Question ID : **16794315334**

Ans

✗ 1.

✔ 2.

Q.16 Study the following carefully and answer the given questions.

Which region belongs to women who have done MCA but are not computer engineers?

Question ID : **16794315339**

Ans ✔ 1. 4

✘ 2. 6

✘ 3. 12

✘ 4. 10

Q.17 How the pattern would appear when the transparent sheet is folded at the dotted line?

Question ID : **16794315337**

Ans

✔ 1.

✘ 2.

✘ 3.

✘ 4.

Q.18 In a group of donkey and ducks, the number of legs are 16 more than twice of the heads. Find the number of donkeys.

Question ID : **16794315342**

Ans ✘ 1. 6

✘ 2. 7

✘ 3. 10

✔ 4. 8

Q.19 Your friend has gone to city. Unfortunately he lost his wallet. He called you over phone for help. What is the best way to adopt to tackle the situation?

Question ID : **16794315336**

Ans ✔ 1.

Make an arrangement to deposit or hand over required money/help for him

✘ 2. Scold him for losing the wallet

✘ 3.

Bring this information to the notice of his parent

✘ 4. Ignore him

Q.20 News program always have - Identify the best option that suits the statement.

Question ID : **16794315338**

Ans

1. Advertisement
2. Cartoon
3. Jokes
4. News ✓

Section : **General Awareness**

Q.1 Indrani Rahman did not specialize in which one of the following dance forms?

Ans
1. Kuchipudi ✗
2. Kathakali ✗
3. Kathak ✓
4. Bharata Natyam ✗

Question ID : **16794315359**

Q.2 _____ was considered to be most valuable possession in the Early Vedic Period.

Ans
1. Land ✗
2. Gold ✗
3. Cattle ✓
4. Silver ✗

Question ID : **16794315350**

Q.3 2018 विश्वकप में फीफा यंग प्लेयर पुरस्कार किस खिलाड़ी को दिया गया था?

Ans
1. लुका मोड्रिक ✗
2. पॉल पोगबा ✗
3. किलियान एमबापे ✓
4. एंटोनी ग्रिज़मान ✗

Question ID : **16794315361**

Q.4 Which of the following article provides that the State shall endeavour to secure for living wage etc. for workers?

Ans
1. Article 41 ✗
2. Article 39 ✗
3. Article 43 ✓
4. Article 38 ✗

Question ID : **16794315353**

Q.5 वैज्ञानिकों ने दुनिया का सबसे तेज़ रोटर (घूर्णक) विकसित किया है, जो प्रति मिनट _____ चक्कर से अधिक समय तक घूम सकता है, जिससे यह दुनिया की सबसे तेज़ मानव निर्मित वस्तु बन गई है।

Ans
1. 30 बिलियन ✗
2. 10 बिलियन ✗
3. 60 बिलियन ✓
4. 50 बिलियन ✗

Question ID : **16794315367**

Q.6 Where is the headquarter of European Space Agency (ESA) situated?

Ans
1. Brussels ✗
2. Paris ✓
3. London ✗
4. Vienna ✗

Question ID : **16794315364**

Q.7 मंगोलिया की राजधानी का नाम क्या है?

Ans

Question ID : **16794315351**

✔ 1. उलानबाटार

✘ 2. मापुटो

✘ 3. डकार

✘ 4. अलमाटी

Q.8 By which constitutional amendment Sindhi language was included as 15th regional language in the Eighth Schedule?

Ans

Question ID : 16794315355

✘ 1. 26th Constitutional Amendment Act, 1971

✔ 2. 21st Constitutional Amendment Act, 1967

✘ 3. 19th Constitutional Amendment Act, 1966

✘ 4. 24th Constitutional Amendment Act, 1971

Q.9 Indian Air Force (IAF) for first time will participate in multinational air exercise Pitch Black – 18 (PB-18) in: _____.

Ans

Question ID : 16794315365

✘ 1. France

✘ 2. United States

✔ 3. Australia

✘ 4. Germany

Q.10 How many total Grand Slam titles have been won by Serbia's Novak Djokovic?

Ans

Question ID : 16794315362

✘ 1. 12th

✘ 2. 15th

✘ 3. 10th

✔ 4. 13th

Q.11 'ककरपारा परियोजना' किस राज्य की सिंचाई परियोजना है?

Ans

Question ID : 16794315352

✘ 1. तमिलनाडु

✘ 2. कर्नाटक

✔ 3. गुजरात

✘ 4. आंध्र प्रदेश

Q.12 लाम्बी एक लोक नृत्य है, यह भारत के किस राज्य से संबंधित है?

Ans

Question ID : 16794315358

✘ 1. अरुणाचल प्रदेश

✘ 2. आंध्र प्रदेश

✔ 3. कर्नाटक

✘ 4. मध्य प्रदेश

Q.13 केंद्रीय वित्त मंत्रालय निम्नलिखित में से कौन सी सार्वजनिक/निजी क्षेत्र की बैंक में सितंबर 2018 के अंत तक करीब ₹11,336 करोड़ रुपये की अतिरिक्त पूंजी नहीं डालने की योजना बना रहा है?

Ans

Question ID : 16794315357

✘ 1. आंध्र बैंक

✔ 2. एक्सिस बैंक

✘ 3. इलाहाबाद बैंक

✘ 4. पंजाब नेशनल बैंक

Q.14 ऊंची जाति की दुल्हन और निचली जाति के दूल्हे की शादी को किस रूप में जाना जाता है?

Question ID : 16794315349

Ans ✗ 1. असुर विवाह

     ✗ 2. अनुलोम विवाह

     ✓ 3. प्रतिलोम विवाह

     ✗ 4. गंधर्व विवाह

Q.15 Buddhadev Dasgupta is a famous _____ player of India.

Question ID : **16794315360**

Ans ✗ 1. Shehnai

     ✓ 2. Sarod

     ✗ 3. Sitar

     ✗ 4. Veena

Q.16 The International Monetary Fund (IMF) has cut India's growth forecast for 2018 from 7.4% to _____.

Question ID : **16794315356**

Ans ✓ 1. 7.3%

     ✗ 2. 7.1%

     ✗ 3. 6.7%

     ✗ 4. 7.0%

Q.17 Which Part of the Indian Constitution specifies the list of Fundamental Duties?

Question ID : **16794315354**

Ans ✗ 1. Part VI

     ✓ 2. Part IV A

     ✗ 3. Part IX A

     ✗ 4. Part IV

Q.18 सल्फा औषधियों का आविष्कार किसने किया?

Question ID : **16794315363**

Ans ✗ 1. रोलैंड रॉस

     ✗ 2. एफ.जी. हॉपकिंस

     ✓ 3. गेरहार्ड डोमक

     ✗ 4. रॉबर्ट कोच

Q.19 Vardhamana Mahavira was the _____ Tirthankara according to Jain tradition.

Question ID : **16794315348**

Ans ✗ 1. 25th

     ✓ 2. 24th

     ✗ 3. 23rd

     ✗ 4. 26th

Q.20 Odisha Government has recently launched 'Green Mahanadi Mission', a plantation drive under which _____ saplings will be planted.

Question ID : **16794315366**

Ans ✗ 1. 1.5 crore

     ✓ 2. 2 crore

     ✗ 3. 1 crore

     ✗ 4. 3 crore

Section : **Arithmetic Ability**

Q.1

The speed of a boat in still water is 7 km/h. it can go 4.5 km upstream and return downstream to original point in $\frac{7}{5}$ hours. What is the speed of the stream in km/h?

Question ID : **16794315382**

Ans ✔ 1. 2

✗ 2. 3

✗ 3. 1.5

✗ 4. 2.5

Q.2 The value of $\dfrac{(78)^3-(56)^3-(12)^3-78\times36\times56}{(7.8)^2-(5.6)^2-(1.2)^2+7.8\times5.6-5.6\times1.2+1.2\times7.8}$ is:

Question ID : **16794315368**

Ans ✗ 1. 10

✗ 2. 10000

✗ 3. 100

✔ 4. 1000

Q.3 A train without stoppage travels at an average speed of 80 km/h and with stoppage it travels at 68 km/h. how many minutes does the train stop on an average per hour?

Question ID : **16794315381**

Ans ✗ 1. 10

✗ 2. 12

✗ 3. 15

✔ 4. 9

Q.4 The sums of dimensions of a cuboid are 23 cm and its diagonal is $3\sqrt{21}$ cm. what is the total surface area of the cuboid?

Question ID : **16794315380**

Ans ✗ 1. 350 cm^2

✗ 2. 375 cm^2

✔ 3. 340 cm^2

✗ 4. 360 cm^2

Q.5 By selling 40 articles a person gains cost price of 4 articles. What is his gain percent?

Question ID : **16794315375**

Ans ✔ 1. 10%

✗ 2. $\dfrac{96}{11}$%

✗ 3. $\dfrac{100}{11}$%

✗ 4. $\dfrac{100}{9}$%

Q.6 The sum of digits of the greatest four digit number which when divided by 12, 28 and 33 leaves remainder 8 in each case is:

Question ID : **16794315371**

Ans ✔ 1. 23

✗ 2. 20

✗ 3. 21

✗ 4. 22

Q.7 A person takes a loan at simple interest of 8% per annum for first year with an increase of 0.4 in each subsequent year. If he paid ₹ 8428 as interest after 4 years, how much loan did he take?

Question ID : **16794315377**

Ans ✗ 1. ₹ 23800

✗ 2. ₹ 24200

✔ 3. ₹ 24500

✗ 4. ₹ 24000

Q.8 A trader marks his goods 40% above cost price. He sells 50% of his stock at marked price, 20% stock at 20% discount and remaining at 25% discount on marked price. What is his overall gain percent?

Ans ✗ 1. 23.4%
     ✗ 2. 23.6%
     ✔ 3. 23.9%
     ✗ 4. 23.8%

Question ID : **16794315376**

Q.9 In an examination out of 400 students, 75% passed in physics and 65% passed in mathematics. If 18% failed in both subjects, how many students passed in both subjects?

Question ID : **16794315374**

Ans ✔ 1. 232
     ✗ 2. 204
     ✗ 3. 168
     ✗ 4. 196

Q.10 The difference between compound interest and simple interest on ₹ 4800 for 2 years is ₹ 30.72. What is the rate of interest per annum?

Question ID : **16794315378**

Ans ✔ 1. 8%
     ✗ 2. 7.5%
     ✗ 3. 10%
     ✗ 4. 7%

Q.11 The HCF and LCM of two numbers is 15 and 480 respectively. What is sum of their reciprocals?

Question ID : **16794315370**

Ans ✔ 1. $\dfrac{11}{160}$

     ✗ 2. $\dfrac{1}{32}$

     ✗ 3. $\dfrac{1}{15}$

     ✗ 4. $\dfrac{31}{480}$

Q.12 If a : b = 4 : 5 and b : c = 3 : 8, then 3a : 4b : 6c is equal to:

Question ID : **16794315372**

Ans ✗ 1. 5 : 3 : 10
     ✗ 2. 5 : 3 : 20
     ✗ 3. 3 : 5 : 10
     ✔ 4. 3 : 5 : 20

Q.13 The sides of a triangle are 12 cm, 35 cm and 37 cm. What is the shortest altitude of the triangle? (Correct to one decimal place)?

Question ID : **16794315379**

Ans ✗ 1. 12 cm
     ✔ 2. 11.4 cm
     ✗ 3. 11.6 cm
     ✗ 4. 11.5 cm

Q.14 A and B can do a piece of work in 12 days and 20 days respectively. They started the work together but A left after some days and B completed the remaining work in 12 days. After how many days did A leave?

Question ID : **16794315384**

Ans ✔ 1. 3
     ✗ 2. 2
     ✗ 3. 5
     ✗ 4. 4

Q.15 An alloy of gold and silver contains 80% gold by weight. In 50 g of this alloy, how much silver should be added to make it an alloy with 75% gold?

Question ID : **16794315373**

Ans ✗ 1. 2.5 g

✓ 2. $\frac{10}{3}$ g

✗ 3. 5 g

✗ 4. $\frac{16}{3}$ g

Q.16 The value of $1 + \cfrac{1}{1 + \cfrac{1}{2 + \cfrac{3}{1 + \frac{4}{5}}}}$ is equal to:

Question ID : **16794315369**

Ans

✗ 1. $\frac{14}{6}$

✓ 2. $\frac{25}{14}$

✗ 3. $\frac{14}{5}$

✗ 4. $\frac{24}{11}$

Q.17 If 2 men or 3 boys can complete a work in 48 hours, then 4 men and 2 boys will complete same work in how many hours?

Question ID : **16794315383**

Ans

✗ 1. 16

✗ 2. 14

✓ 3. 18

✗ 4. 20

Comprehension:

The following tables gives the sale of number of apples in 5 shops A, B, C, D and E. Read the table and answer the following questions.

Shops	A	B	C	D	E
No. of Apples sold	860	760	1380	820	X

SubQuestion No : 18

Q.18 If average sale was 840, including E, what was the total sale in shop E?

Question ID : **16794315386**

Ans

✗ 1. 390

✓ 2. 380

✗ 3. 410

✗ 4. 420

Comprehension:

The following tables gives the sale of number of apples in 5 shops A, B, C, D and E. Read the table and answer the following questions.

Shops	A	B	C	D	E
No. of Apples sold	860	760	1380	820	X

SubQuestion No : 19

Q.19 The total sale in shops A and B is what percent of total sale in shops A, B, C and D (correct to one decimal place)?

Question ID : **16794315387**

Ans ✗ 1. 38%

✗ 2. 41.8%

✔ 3. 42.4%

✗ 4. 42.6%

Comprehension:

निम्नलिखित सारणी 5 दुकानों A, B, C, D और E में सेब की संख्या की बिक्री बताती है। सारणी पढ़ें और निम्नलिखित प्रश्नों का उत्तर दें।

दुकानें	A	B	C	D	E
बेचे गए सेब	860	760	1380	820	X

SubQuestion No : 20

Q.20 यदि उपर्युक्त जानकारी पाई-चार्ट के रूप में दी गई थी, मान लें कि दुकान E द्वारा बेचे गए सेबों की कुल संख्या 380 है तो शॉप B में बिक्री दर्शाने वाले क्षेत्र का केंद्रीय कोण निकटतम पूर्णांक में क्या होगा?

Question ID : **16794315388**

Ans ✗ 1. 62°

✗ 2. 68°

✔ 3. 65°

✗ 4. 66°

Section : **General English**

Q.1 Choose a suitable beginning for this sentence. _____, the attendance in schools didn't drop.

Question ID : **16794315390**

Ans ✔ 1. Despite heavy rains

✗ 2. In spite heavy rains

✗ 3. Although heavy rains

✗ 4. And heavy rains

Q.2 When we meet him next Monday at 4 PM he _____

Question ID : **16794315392**

Ans ✔ 1. will be preparing to leave Hyderabad.

✗ 2. will be prepare to leave Hyderabad.

✗ 3. will preparing to leave Hyderabad.

✗ 4. will be preparing to leaving Hyderabad.

Q.3 One of the options is a complete sentence? Identify it.

Question ID : **16794315389**

Ans ✗ 1. Rice and Curry.

✗ 2. The bird on the tree.

✓ 3.

There's always light at the end of the tunnel.

✗ 4. Folk tales.

Q.4 _____ he reforms himself, no one is going to trust him. (Provide the appropriate conjunction)

Question ID : **16794315403**

Ans ✗ 1. Either

✗ 2. Despite

✓ 3. Unless

✗ 4. Nor

Q.5 He has _____ his goals.

Question ID : **16794315393**

Ans ✗ 1. to accomplishing

✓ 2. to accomplish

✗ 3. accomplishing

✗ 4. to be accomplish

Q.6 He was _____ me in the queue.
(Choose the correct preposition)

Question ID : **16794315401**

Ans ✓ 1. behind

✗ 2. inside

✗ 3. About

✗ 4. from

Q.7 Which sentence makes most sense?

Question ID : **16794315391**

Ans ✓ 1.

Since he's lost his money, he couldn't go to the restaurant.

✗ 2.

Since he's lost his money, he go to the restaurant.

✗ 3.

Since he's lost he money, he couldn't got to the restaurant.

✗ 4.

Since he's loss his money, he couldn't go to the restaurant.

Q.8 The engineer <u>designed</u> a new software for retailers.
(Provide the appropriate synonym for the underlined word)

Question ID : **16794315397**

Ans ✓ 1. Developed

✗ 2. Reasoned

✗ 3. Renovated

✗ 4. Prevented

Q.9 He plays soccer so well, _____

(Provide the appropriate question tag)

Question ID : **16794315395**

Ans ✗ 1. Can't he?

✗ 2. Isn't he?

✗ 3. Aren't he?

✓ 4. Doesn't he?

Q.10 Arrange parts of the sentence in meaningful and grammatically correct order.
A. Home food is certainly the best option to eat hygienic food.
B. Therefore, occasionally eating out is advisable, not regularly.
C. However, hygienic food is not served at every eatery.
D. Eating out has become a common practice nowadays.
E. To conclude, those who eat out on a regular basis are at risk of various ailments.

Question ID : **16794315398**

Ans ✓ 1. DCABE

✗ 2. CDABC

✗ 3. BACDE

✗ 4. EDCAB

Q.11 " Will it rain today", the tourist said.
The tourist _____ (Reported Speech would be)

Question ID : **16794315394**

Ans ✗ 1. enquired whether it rains that day.

✗ 2. enquired whether it could rain that day.

✓ 3. enquired whether it would rain that day.

✗ 4. enquired whether it would rain today.

Q.12 The new teacher was welcomed by a boisterous crowd.
(Provide the appropriate antonym for the underlined word)

Question ID : **16794315399**

Ans ✗ 1. Huge

✗ 2. Posthaste

✗ 3. Brisk

✓ 4. Silent

Q.13 _____ Raj, no one was present in the room.
(Choose the correct preposition)

Question ID : **16794315402**

Ans ✗ 1. Beside

✗ 2. Within

✗ 3. Below

✓ 4. Besides

Q.14 People praise him for his honesty.
(Provide the appropriate antonym for the underlined word)

Question ID : **16794315400**

Ans ✗ 1. Intricate

✗ 2. Rough

✗ 3. Stingy

✓ 4. deceit

Q.15

The Police <u>displayed</u> the items retrieved from the robber.
(Provide the appropriate synonym for the underlined word)

Question ID : **16794315396**

Ans   ✗ 1. Heightened

     ✗ 2. concealed

     ✔ 3. exhibited

     ✗ 4. Paused

Comprehension:

Read the following passage and answer the questions that follow.

A climate sceptic has said that it is now time to end the debate over whether global warming is real after the most definitive study into temperature data gathered by weather stations over the past half-century.

Professor Richard Muller, a physicist at the University of California, Berkeley, who has been an outspoken critic of the science underpinning global warming, said that there is little doubt in his mind the phenomenon of rising land temperatures is real. Over the past two years, he has chaired a group of scientists who have carried out an exhaustive analysis of more than 1.6 billion temperature recordings collected from more than 39,000 weather stations at land sites around the world.

The Berkeley Earth Surface Temperature (Best) study was set up to test the findings of other studies and was part-funded by US billionaire brothers Charles and David Koch.

"When we began our study, we felt that sceptics had raised legitimate issues, and we didn't know what we'd find. Our results turned out to be close to those published by prior groups. We think that means that those groups had truly been very careful in their work, despite their inability to convince some sceptics of that," Professor Muller said.

SubQuestion No : 16

Q.1
6   At the beginning of the last paragraph, the author mentions that his team was _____ about the findings.

Question ID : **16794315408**

An
s   ✗ 1. Unfriendly

     ✗ 2. Unreal

     ✗ 3. Uncharacteristic

     ✔ 4. Unsure

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SubQuestion No : 17

Q.17   'Exhaustive' in the context f the passage means:

| Question ID : **16794315406** |

Ans

  ✗ 1. competitive

  ✔ 2. complete

  ✗ 3. concept

  ✗ 4. Compact

Comprehension:

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SubQuestion No : 18

Q.1 8 The conclusion of Richard Muller's analysis is:

Ans

Question ID : **16794315409**

✗ 1.
Prior analysts had truly been very cared for in their work

✗ 2.
Prior analysts had truly been very careless in their work

✔ 3.
Prior analysts had truly been very careful in their work

✗ 4.
Prior analysts had truly been very independent in their work

Comprehension:

Read the following passage and answer the questions that follow.

A climate sceptic has said that it is now time to end the debate over whether global warming is real after the most definitive study into temperature data gathered by weather stations over the past half-century.

Professor Richard Muller, a physicist at the University of California, Berkeley, who has been an outspoken critic of the science underpinning global warming, said that there is little doubt in his mind the phenomenon of rising land temperatures is real. Over the past two years, he has chaired a group of scientists who have carried out an exhaustive analysis of more than 1.6 billion temperature recordings collected from more than 39,000 weather stations at land sites around the world.

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SubQuestion No : 19

Q.1 9   The author says that the debate should end. The debate he is referring to is:

<div style="float:right; border:1px solid #000; padding:8px;">Question ID : **16794315405**</div>

An s   ✗ 1.

the debate over whether global warming is surrealism or not.

✗ 2.

the debate over whether global warming is temporary.

✔ 3.

the debate over whether global warming is real.

✗ 4.

the debate over whether global warming is fickle.

Comprehension:

Read the following passage and answer the questions that follow.

A climate sceptic has said that it is now time to end the debate over whether global warming is real after the most definitive study into temperature data gathered by weather stations over the past half-century.

Professor Richard Muller, a physicist at the University of California, Berkeley, who has been an outspoken critic of the science underpinning global warming, said that there is little doubt in his mind the phenomenon of rising land temperatures is real. Over the past two years, he has chaired a group of scientists who have carried out an exhaustive analysis of more than 1.6 billion temperature recordings collected from more than 39,000 weather stations at land sites around the world.

The Berkeley Earth Surface Temperature (Best) study was set up to test the findings of other studies and was part-funded by US billionaire brothers Charles and David Koch.

"When we began our study, we felt that sceptics had raised legitimate issues, and we didn't know what we'd find. Our results turned out to be close to those published by prior groups. We think that means that those groups had truly been very careful in their work, despite their inability to convince some sceptics of that," Professor Muller said.

SubQuestion No : 20

Q.20 'BEST' was set up for this purpose:

Ans ✔ 1.

test the findings of other studies related to global warming.

✘ 2.

test the findings of other factors related to global warming.

✘ 3.

test the findings of other students related to global warming.

✘ 4.

test the findings of other opinions related to global warming.

Question ID : 16794315407

Section : **General Hindi**

Q.1 'जो बिना वेतन के काम करता हो।' इसके लिए एक शब्द होता है:

Ans ✘ 1. वैतनिक

✘ 2. वेतन भोगी

✘ 3. अनुचर

Question ID : 16794315422

✔ 4. अवैतनिक

Q.2 'मैं <u>यथासंभव</u> कार्य करूँगा।' वाक्य के रेखांकित शब्द में समास है:

Question ID : 16794315416

Ans

✘ 1. द्विगु

✘ 2. कर्मधारय

✘ 3. तत्पुरूष

✔ 4. अट्ययीभाव

Q.3 कौन-सा शब्द अशुद्ध है?

Question ID : 16794315412

Ans

✘ 1. बुद्धिमती

✔ 2. श्रीमती

✘ 3. अनावश्यक

✘ 4. विदुषी

Q.4 'रात्रि' का पर्यायवाची नहीं है:

Question ID : 16794315424

Ans

✘ 1. विभावरी

✔ 2. तमस

✘ 3. निशा

✘ 4. रजनी

Q.5 'वह सोमवार को आएगी।' वाक्य का कारक है:

Question ID : 16794315414

Ans

✘ 1. अपादान

✔ 2. अधिकारक

✘ 3. संबंध

✘ 4. कर्म

Q.6 'प्रत्याहार' शब्द में उपसर्ग है:

Question ID : 16794315417

Ans

✘ 1. प्रत्या

✘ 2. अ

✘ 3. प्र

✔ 4. प्रा

Q.7 'कवि' शब्द के उपयुक्त बहुवचन से रिक्त स्थान भरिए।

Question ID : 16794315425

काव्य मंच पर _____ कविता पाठ करते हैं।

Ans

✘ 1. कवियें

✘ 2. कवियों

✔ 3. कवि

✘ 4. कवियो

Q.8

Question ID : 16794315419

'वाह! क्या <u>जवानी</u> है।' वाक्य में रेखांकित पद है:

Ans ✗ 1. गुणवाचक विशेषण

✗ 2. पुरुषवाचक सर्वनाम

✓ 3. भाववाचक संज्ञा

✗ 4. संबंधबोधक अव्यय

Q.9 अनुस्वार के स्थान पर 'ण' का प्रयोग कौन-से शब्द में हो सकता है?

Question ID : 16794315410

Ans ✗ 1. कंथा

✗ 2. कंधा

✓ 3. कुंठा

✗ 4. कंचा

Q.10 'मौलिकता' में मूल शब्द है:

Question ID : 16794315418

Ans ✗ 1. मौलि

✗ 2. मौलिक

✗ 3. मौल

✓ 4. मूल

Q.11 'दाँत खट्टे करना' मुहावरा का अर्थ है:

Question ID : 16794315427

Ans ✗ 1. मुश्किल पैदा कर देना

✓ 2. हरा देना

✗ 3. आश्चर्य चकित होना

✗ 4. खुशियाँ मनाना

Q.12 भाववाच्य वाला वाक्य छाँटिए।

Question ID : 16794315426

Ans ✓ 1. अब, चला जाय।

✗ 2. पाठ्य-पढ़ाना अच्छी बात है।

✗ 3. तुम जाकर काम कर लो।

✗ 4. भोजन बड़ा ही स्वादिष्ट है।

Q.13 'मूर्ख लेकिन धनवान' के लिए लोकोक्ति है:

Question ID : 16794315428

Ans ✗ 1. कहाँ राजा भोज कहाँ गँगू तेली

✓ 2. आँख के अंधे गाँठ के पूरे

✗ 3. आम के आम गुठलियों के दाम

✗ 4. अधजल गगरी छलकत जाए

Q.14

तद्भव शब्द कौन-सा है?

Question ID : 16794315421

Ans　✗ 1. श्वेत

　　　✓ 2. हरा

　　　✗ 3. कृष्ण

　　　✗ 4. रक्त

Q.15 'अत्यंत' शब्द में कौन-सी संधि है?

Question ID : 16794315415

Ans　✓ 1. यण्

　　　✗ 2. वृद्धि

　　　✗ 3. गुण

　　　✗ 4. अयादी

Q.16 'इच्छा' शब्द का विलोम होगा:

Question ID : 16794315423

Ans　✓ 1. अनिच्छा

　　　✗ 2. अनचाह

　　　✗ 3. ऐषणा

　　　✗ 4. चाहत

Q.17 अशुद्ध वाक्य छाँटिए।

Question ID : 16794315429

Ans　✗ 1. सौंदर्य मोहक होता है।

　　　✓ 2. उन सर्बों को बुला लीजिए।

　　　✗ 3. तुम दिल्ली कब जाओगे?

　　　✗ 4. मैं अकेला ही कर लूँगा।

Q.18 'मैं और मेरा भाई, दोनों ही जा रहे हैं।' वाक्य में कौन-सा काल है?

Question ID : 16794315413

Ans　✗ 1. आसन्न भूत

　　　✓ 2. अपूर्ण वर्तमान

　　　✗ 3. पूर्ण भूत

　　　✗ 4. भविष्य

Q.19 तत्सम शब्द कौन-सा है?

Question ID : 16794315420

Ans　✗ 1. सफ़ेद

　　　✗ 2. नाक

　　　✓ 3. आज्ञा

　　　✗ 4. रुख

Q.20 'ङ' वर्ण के बाद कौन-सा वर्ण आता है?

Question ID : 16794315411

Ans　✓ 1. च

　　　✗ 2. ध

Section : **Subject Related**

Q.1 A chord of a circle subtends an angle $60°$ at the centre of the circle. If the length of the chord is 10 cm. Then the area of the major segment is (Given $\pi = 3.14$ and $\sqrt{3} = 1.732$)

Question ID : **16794315448**

Ans
✗ 1. 335 cm^2

✗ 2. 310 cm^2

✗ 3. 295 cm^2

✔ 4. 305 cm^2

Q.2 Apply Chinese Remainder theorem to solve $x - 3 \ (mod \ 9)$, $x - 7 \ (mod \ 13)$. The common solution is:

Question ID : **16794315437**

Ans
✗ 1. $x = 107 \ (mod \ 117)$

✗ 2. $x = 103 \ (mod \ 117)$

✔ 3. $x = 111 \ (mod \ 117)$

✗ 4. $x = 105 \ (mod \ 117)$

Q.3 A non-terminating but recurring decimal is:

Question ID : **16794315430**

Ans
✗ 1. A natural number

✗ 2. An integer

✗ 3. A whole number

✔ 4. A rational number

Q.4 Number of positive integers, which are less than 108 and prime to 108 are?

Question ID : **16794315438**

Ans
✗ 1. 15

✗ 2. 18

✔ 3. 17

✗ 4. 36

Q.5 $2\sqrt[3]{32} - 3\sqrt[3]{4} + \sqrt[3]{500}$ is equal to:

Question ID : **16794315434**

Ans
✗ 1. $4\sqrt[3]{6}$

✗ 2. $\sqrt[3]{24}$

✔ 3. $6\sqrt[3]{4}$

✗ 4. $3\sqrt[3]{12}$

Q.6 In the following figure (not to scale) AB is the common tangent to the circles C_1 and C_2, where C_1 and C_2 are touching externally at C. AD and DC are two chords of the circle C_1 and BE and EC are the two chords of the circle C_2. Find the measure of $\angle ADC + \angle BEC$?

Question ID : **16794315445**

Ans
✗ 1. $120°$

✗ 2. $100°$

✗ 3. $60°$

✔ 4. $90°$

Q.7 PQ is the direct common tangent of two circles (S, 9 cm) and (R, 4 cm) which touch each other externally. Find the area of the quadrilateral PQRS (in cm²)?

Question ID : **16794315447**

Ans   ✔ 1. 72

    ✗ 2. 69

    ✗ 3. 78

    ✗ 4. 65

Q.8 When 31513 and 14369 are divided by a certain three digit number, the remainders are equal. Find the remainder?

Question ID : **16794315441**

Ans   ✗ 1. 98

    ✔ 2. 97

    ✗ 3. 95

    ✗ 4. 96

Q.9 $(0.\overline{11} + 0.\overline{22}) \times 3$ is equal to:

Question ID : **16794315431**

Ans   ✗ 1. 0.3

    ✔ 2. 1

    ✗ 3. 1.9

    ✗ 4. 3

Q.10 A fraction whose denominator is 30 and placed between $\frac{5}{8}$ and $\frac{7}{11}$ is:

Question ID : **16794315432**

Ans   ✗ 1. $\dfrac{20}{30}$

    ✗ 2. $\dfrac{18}{30}$

    ✗ 3. $\dfrac{21}{30}$

    ✔ 4. $\dfrac{19}{30}$

Q.11 Find the remainder when 3^{215} is divided by 43?

Question ID : **16794315439**

Ans   ✗ 1. 35

    ✗ 2. 30

    ✔ 3. 28

    ✗ 4. 33

Q.12 The sum of the length, breadth and depth of a cuboid is 19cm and its diagonal is $5\sqrt{5}$ cm. Its surface area is:

Question ID : **16794315449**

Ans   ✗ 1. 361 cm²

    ✗ 2. 250 cm²

    ✔ 3. 236 cm²

    ✗ 4. 275 cm²

Q.13 Euclid's Postulate III is:

Question ID : **16794315442**

Ans   ✗ 1. All right angles are equal to one another

    ✗ 2.

A terminal line can be produced indefinitely

    ✗ 3.

A straight line may be drawn from any point to any other point

✔ 4.

A circle can be drawn with any centre any radius

Q.14 Find the number of ways in which 8064 can be resolved as the product of two factors?

Question ID : **16794315436**

Ans ✘ 1. 26

✔ 2. 24

✘ 3. 22

✘ 4. 20

Q.15 In the following figure ABCD is a quadrilateral. BE ∥ AC . BE meats DC (produced) at E. AE and BC intersects at O. Which one is the correct answer from the following?

Question ID : **16794315443**

Ans ✘ 1. ar (ΔAOC) = ar(ΔBOE)

✔ 2. ar (ΔOAB) = ar(ΔOCE)

✘ 3. ABEC is parallelogram

✘ 4. ar (ΔABE) = ar(ΔACE)

Q.16 In the following figure PQ is parallel to BC and PQ : BC = 1 : 3. If the area of the triangle ABC is 144 cm^2 , then what is the area of the ΔAPQ

Question ID : **16794315444**

Ans ✔ 1. 16 cm^2

✘ 2. 9 cm^2

✘ 3. 36 cm^2

✘ 4. 48 cm^2

Q.17 The following sentences are steps involved in finding the H.C.F. of 29 and 24 by using Euclid's division algorithm. Arrange them in sequential order from first to last.

(a) $5 = 1 \times 5 + 0$
(b) $29 = 24 \times 1 + 5$
(c) $24 = 5 \times 4 + 1$

Question ID : **16794315435**

Ans ✔ 1. b c a

✘ 2. b a c

✘ 3. a b c

✘ 4. c a b

Q.18 A number of three digits in scale of 7 when expressed in scale of 9 has its digits reversed in order. Find the number expressed in scale of 10?

Question ID : **16794315440**

Ans ✘ 1. 247

✘ 2. 246

✘ 3. 245

✔ 4. 248

Q.19 $\left(\dfrac{2}{\sqrt{5}+\sqrt{3}} + \dfrac{1}{\sqrt{6}-\sqrt{3}} + \dfrac{1}{\sqrt{6}+\sqrt{5}} \right)$ is equal to:

Question ID : **16794315433**

Ans ✘ 1. $3\sqrt{3}$

✘ 2. $2\sqrt{5}$

✔️ 3. $\dfrac{4\sqrt{6} - 2\sqrt{3}}{3}$

❌ 4. $2\sqrt{6}$

Q.20 If three concurrent straight lines AD, BE and CF are drawn from the angular points of a triangle Δ ABC to meet the opposite sides such that $\dfrac{AF}{FB} = \dfrac{1}{2}$; $\dfrac{BD}{DC} = \dfrac{2}{3}$; then by applying Ceva's theorem, $\dfrac{EA}{EC}$ is equal to:

Question ID : **16794315446**

Ans

✔️ 1. $\dfrac{1}{3}$

❌ 2. $\dfrac{3}{2}$

❌ 3. $\dfrac{2}{3}$

❌ 4. 1

Section : **Subject Related**

Q.1 If α, β are the roots of the equation $(x - a)(x - b) + c = 0$ $(c \neq 0)$, then the roots of the equation $(x - c - a)(x - c - \beta) = c$ are:

Question ID : **16794315455**

Ans

✔️ 1. $(a + c)\ and\ (b + c)$

❌ 2. $a\ and\ b$

❌ 3. $a\ and\ (b + c)$

❌ 4. $(a + b)\ and\ c$

Q.2 A 6 feet tall man finds that the angle of elevation of the top of a 24 feet height pillar and the angle of depression of its base are complementary angles. The distance of the man from the pillar is:

Question ID : **16794315465**

Ans

❌ 1. $2\sqrt{3}$ feet

✔️ 2. $6\sqrt{3}$ feet

❌ 3. $8\sqrt{3}$ feet

❌ 4. None of these

Q.3 Two hemispherical vessels can hold 10.8 liters and 50 liters of liquid respectively. The ratio of their minor curved surface area is:

Question ID : **16794315453**

Ans

❌ 1. $4 : 3$

✔️ 2. $9 : 25$

❌ 3. $25 : 9$

❌ 4. $16 : 25$

Q.4 The number of real solutions of equation $x^2 - 3\,|x| + 2 = 0$ is:

Question ID : **16794315457**

Ans

❌ 1. 2

✔️ 2. 4

❌ 3. 1

❌ 4. 3

Q.5 The value of m for which one of the root of $x^2 - 3x + 2m = 0$ is double of the root of $x^2 - x + m = 0$ is:

Question ID : **16794315454**

Ans

✔️ 1. $0, -2$

❌ 2. $0, 1$

❌ 3. None of these

❌ 4. $2, 0$

Q.6 $\tan\dfrac{5\pi}{12} - \tan\dfrac{\pi}{12} - \sqrt{3}\tan\dfrac{5\pi}{12}.\ \tan\dfrac{\pi}{12}$ is equal to:

Question ID : **16794315463**

Ans   ✔ 1. $\sqrt{3}$

   ✘ 2. $-\sqrt{3}$

   ✘ 3. $\dfrac{1}{\sqrt{3}}$

   ✘ 4. 1

Q.7 If $3\sin\theta + 5\cos\theta = 5$, then the value of $5\sin\theta - 3\cos\theta$ is equal to:

Question ID : **16794315459**

Ans   ✔ 1. 3

   ✘ 2. 4

   ✘ 3. None of these

   ✘ 4. 5

Q.8 The diameters of the top and the bottom portions of a bucket are 42 cm and 28 cm. If the height of the bucket is 24 cm, find the area of outer curved surface?

Question ID : **16794315451**

Ans   ✘ 1. $2625\ cm^2$

   ✔ 2. $2750\ cm^2$

   ✘ 3. $2675\ cm^2$

   ✘ 4. $2725\ cm^2$

Q.9 If the roots of the quadratic equation $x^2 - x\ln(a^2 - 3a + 2) + a^2 - 4 = 0$ are of opposite signs, then

Question ID : **16794315456**

Ans   ✘ 1. $a \in (-2, 2)$

   ✔ 2. $a \in (-\infty, -2) \cup (2, \infty)$

   ✘ 3. $a \in (-\infty, 1) \cup (2, \infty)$

   ✘ 4. $a \in (-2, 1)$

Q.10 The ratio of the radius of two cylinders is 2 : 3 and the ratio of their heights is 5 : 3. The ratio of their volumes will be:

Question ID : **16794315450**

Ans   ✘ 1. $9 : 4$

   ✘ 2. $27 : 20$

   ✘ 3. $4 : 9$

   ✔ 4. $20 : 27$

Q.11 An equilateral triangle has each side equal to a. If the co-ordinates of its vertices are $(x_1,\ y_1)$; $(x_2,\ y_2)$; $(x_3,\ y_3)$ then the square of the determinant $\begin{vmatrix} x_1 & y_1 & 1 \\ x_2 & y_2 & 1 \\ x_3 & y_3 & 1 \end{vmatrix}$ equals:

Question ID : **16794315469**

Ans   ✘ 1. None of these

   ✘ 2. $4a^4$

   ✘ 3. $3a^4$

   ✔ 4. $\dfrac{3a^4}{4}$

Q.12 If A and B are two points having co-ordinates (3, 4) and (5, −2) respectively and P is a point such that PA = PB and area of triangle $\triangle PAB = 10$ sq units, then the co-ordinates of P are:

Question ID : **16794315467**

Ans   ✘ 1. (2, 7) or (4, 13)

   ✘ 2. (7, 4) or (13, 2)

   ✘ 3. None of these

✔ 4. $(7, 2)$ or $(1, 0)$

Q.13 If $\cos 25° + \sin 25° = k$, then $\cos 20°$ is equal to:

Question ID : **16794315460**

Ans

✔ 1. $\dfrac{k}{\sqrt{2}}$

✘ 2. $\pm \dfrac{k}{\sqrt{2}}$

✘ 3. $-\dfrac{k}{\sqrt{2}}$

✘ 4. None of these

Q.14 If $\tan A + \sin A = m$ and $\tan A - \sin A = n$ then:

Question ID : **16794315462**

Ans

✘ 1. $m^2 + n^2 = 2mn$

✘ 2. $m^2 + n^2 = mn$

✔ 3. $m^2 - n^2 = 4\sqrt{mn}$

✘ 4. $m^2 - n^2 = \sqrt{mn}$

Q.15 If $\sin x = \cos^2 x$, then $\cos^2 x \,(1 + \cos^2 x)$ is equal to:

Question ID : **16794315461**

Ans

✘ 1. 1

✔ 2. 2

✘ 3. None of these

✘ 4. 0

Q.16 If the roots of quadratic equation $x^2 + px + q = 0$ are $\tan 30°$ and $\tan 15°$ respectively, then the value of $2 + q - p$ is:

Question ID : **16794315458**

Ans

✘ 1. 0

✘ 2. 2

✔ 3. 3

✘ 4. 1

Q.17 The area of the triangle with vertices at the points $(a, b + c)$, $(b, c + a)$, $(c, a + b)$ is:

Question ID : **16794315466**

Ans

✘ 1. $ab + bc + ca$

✘ 2. None of these

✘ 3. $a + b + c$

✔ 4. 0

Q.18 If $(-4, 0)$ and $(1, -1)$ are two vertices of a triangle of area 4 units, then its third vertex lie on:

Question ID : **16794315468**

Ans

✘ 1. None of these

✔ 2. $x + 5y - 4 = 0$

✘ 3. $5x + y + 12 = 0$

✘ 4. $y = x$

Q.19 Let x and y be real numbers such that $\dfrac{\sin x}{\sin y} = 3$ and $\dfrac{\cos x}{\cos y} = \dfrac{1}{2}$. The value of $\dfrac{\sin 2x}{\sin 2y} + \dfrac{\cos 2x}{\cos 2y}$ is:

Question ID : **16794315464**

Ans

✘ 1. None of these

✘ 2. $\dfrac{51}{58}$

3. $\dfrac{49}{58}$ ✓

4. $\dfrac{41}{58}$ ✗

Q.20 A metallic cone of diameter 32 cm and height 9 cm is melted and made into identical spheres each of radius 2 cm. How many such spheres can be made?

Question ID : **16794315452**

Ans ✓ 1. 72

✗ 2. 52

✗ 3. 64

✗ 4. 48

Section : **Subject Related**

Q.1 X is a non-negative integer valued random variable with

$$P(X = x) = \begin{cases} \dfrac{x+1}{2^{(x+2)}}, & x = 0,1,2..... \\ 0, & otherwise \end{cases}$$

Then, mean and variance of X are respectively

Question ID : **16794315487**

Ans ✗ 1. 2 & 2

✗ 2. 2 & 3

✗ 3. 4 & 2

✓ 4. 2 & 4

Q.2 For what values of m the equations $2x + 3y = 2$ and $(m + 2)x + (2m + 1)y = 2(m - 1)$ have infinitely many solutions:

Question ID : **16794315477**

Ans ✓ 1. 4

✗ 2. 2

✗ 3. 5

✗ 4. 3

Q.3 Let S_n denote the sum of the first n terms of an AP. If $S_{2n} = 3S_n$, then $S_{3n} : S_n$ is equal to:

Question ID : **16794315474**

Ans ✓ 1. 6

✗ 2. 8

✗ 3. 4

✗ 4. 10

Q.4 P (3, 1), Q (6, 5) and R(x, y) are three points such that the angle $\angle$ PRQ is a right angle and the area $\triangle$RQP = 7, then the number of such points R is:

Question ID : **16794315470**

Ans ✓ 1. 0

✗ 2. 2

✗ 3. 4

✗ 4. 1

Q.5 If X is a Poisson random variate with mean 3, then $P(|X- 3| < 1)$ will be:

Question ID : **16794315486**

Ans ✓ 1. $\dfrac{9}{2}e^{-3}$

✗ 2. $3e^{-3}$

✗ 3. $\dfrac{e^{-3}}{2}$

$\times$ 4. $\left(\dfrac{99}{8}\right)e^{-3}$

Q.6 Given that $(x+2)$ and $(x+3)$ are factors of $x^3 + ax + b$, the values of a and b and the remaining factor is:

Question ID : **16794315482**

Ans

$\times$ 1. $a = -7,\ b = -6, (x+1)$

$\times$ 2. $a = -5,\ b = 4, (x+1)$

$\times$ 3. $a = 5,\ b = 2, (x+2)$

$\checkmark$ 4. $a = -19,\ b = -30, (x-5)$

Q.7 If S_r denotes the sum of the first r terms of an AP then, $\dfrac{S_{3r}-S_{r-1}}{S_{2r}-S_{2r-1}}$ is equal to:

Question ID : **16794315473**

Ans

$\checkmark$ 1. $2r + 1$

$\times$ 2. $2r + 3$

$\times$ 3. $2r - 1$

$\times$ 4. $4r + 1$

Q.8 The graph of the in-equation $2x - 5y \le 5$ in Cartesian plane is:

Question ID : **16794315480**

Ans

$\times$ 1. On and below the line $2x - 5y = 5$

$\checkmark$ 2. On and above the line $2x - 5y = 5$

$\times$ 3. Below the line $2x - 5y = 5$

$\times$ 4. Above the line $2x - 5y = 5$

Q.9 If $4x + \dfrac{6}{y} = 15$ and $6x - \dfrac{8}{y} = 14$, then the value of p in $y = px - 2$ is:

Question ID : **16794315478**

Ans

$\times$ 1. 4

$\times$ 2. $\dfrac{3}{4}$

$\checkmark$ 3. $\dfrac{4}{3}$

$\times$ 4. 3

Q.10 Let X be a normal random variable with mean zero and variance 9. If $a = P(X \ge 3)$ then $= (|X| \le 3)$ equals:

Question ID : **16794315485**

Ans

$\checkmark$ 1. $1 - 2a$

$\times$ 2. $1 - a$

$\times$ 3. $2a$

$\times$ 4. a

Q.11 Let A and B be two events such that $P(\overline{A \cup B}) = \dfrac{1}{6}$, $P(A \cap B) = \dfrac{1}{4}$ and $P(\overline{A}) = \dfrac{1}{4}$, where $\overline{A}$ stands for complement of event A. Then, events A and B are:

Question ID : **16794315489**

Ans

$\times$ 1. Equally likely but not independent

$\times$ 2. Mutually exclusive and independent

$\checkmark$ 3. Independent but not equally likely

$\times$ 4. Equally likely and mutually exclusive

Q.12 Let t_r denote the rth term of an arithmetic progression. If $t_m = \dfrac{1}{n}$ and $t_n = \dfrac{1}{m}$, then t_{mn} equals:

Question ID : **16794315471**

Ans

$\times$ 1. $\dfrac{1}{mn}$

$\times$ 2. 4

✗ 3. $\dfrac{1}{m} + \dfrac{1}{n}$

✓ 4. 1

Q.13 The system of equations $2x + 4y = 6$ and $4x + 8y = 6$ has:

Question ID : **16794315476**

Ans ✗ 1. exactly two solutions

✓ 2. no solution

✗ 3. a unique solution

✗ 4. infinitely many solutions

Q.14 The nth terms of the two series $3 + 10 + 17 + ...$ and $63 + 65 + 67 + ...$ are equal, then the value of n is:

Question ID : **16794315475**

Ans ✗ 1. None of these

✗ 2. 9

✓ 3. 13

✗ 4. 19

Q.15 If in an AP, $S_n - p.n^2$ and $S_m - p.m^2$, where S_r denotes the sum of r terms of the AP, then S_p is equal to:

Question ID : **16794315472**

Ans ✓ 1. p^3

✗ 2. $(m+n)p^2$

✗ 3. mnp

✗ 4. $\dfrac{p^3}{2}$

Q.16 Find the value of a if the polynomials $2x^3 + ax^2 + 3x - 5$ and $x^3 + x^2 - 4x - a$ leave the same remainder when divided by $(x-1)$

Question ID : **16794315483**

Ans ✓ 1. $a = -1$

✗ 2. $a = 1$

✗ 3. $a = 2$

✗ 4. $a = -2$

Q.17 The base of a triangle is smaller than its altitude. If its area is $\frac{1}{2}x^2 + 2x + \frac{3}{2}$, its base is,

Question ID : **16794315484**

Ans ✗ 1. $(x+2)$

✗ 2. $(x-1)$

✗ 3. $(x+3)$

✓ 4. $(x+1)$

Q.18 The number of values of k for which the system of equations $x + y = 2$, $kx + y = 4$, $x + ky = 5$ has atleast one solution is:

Question ID : **16794315479**

Ans ✓ 1. 1

✗ 2. 0

✗ 3. 3

✗ 4. 2

Q.19 Events A, B and C are mutually exclusive events such that $P(A) = \frac{3x+1}{3}$, $P(B) = \frac{1-x}{4}$ and $P(C) = \frac{1-2x}{4}$. The set of possible values of x are in the interval

Question ID : **16794315488**

Ans ✗ 1. $\left[\dfrac{1}{3}, \dfrac{1}{2}\right]$

✓ 2. $\left[\dfrac{1}{3}, \dfrac{2}{3}\right]$

✗ 3. $[0, 1]$

✗ 4. $\left[\dfrac{1}{3}, \dfrac{13}{3}\right]$

Q.20 If $(2x - 3)$ is a factor of $f(x) = 2x^3 - x^2 + px + 6$, then the value of p is:

Question ID : 16794315481

Ans ✗ 1. 4

✗ 2. –3

✗ 3. 3

✓ 4. –7

Section : **Subject Related**

Q.1 If $\sin y + e^{-x\cos y} = c$, then $\dfrac{dy}{dx}$ at $(1, \pi)$ is:

Question ID : 16794315503

Ans ✗ 1. $-x \cos y$

✗ 2. $\sin y - x \cos y$

✓ 3. e

✗ 4. $\sin y$

Q.2 If $f(4) = 4$, $f'(4) = 1$, then $\lim_{x \to 4} \dfrac{2 - \sqrt{f(x)}}{2 - \sqrt{x}}$ is equal to:

Question ID : 16794315504

Ans ✗ 1. -2

✗ 2. 2

✓ 3. 1

✗ 4. -1

Q.3 Let f be a differentiable function defined for all $x \in R$ such that $f(x^3) = x^5$ for all $x \in R$, $x \ne 0$. Then the value of $\dfrac{df}{dx}(8)$ is:

Question ID : 16794315502

Ans ✗ 1. $\dfrac{5}{3}$

✗ 2. None of these

✗ 3. 20

✓ 4. $\dfrac{20}{3}$

Q.4 If $m > 1$ and $n \in N$, such that $1^m + 2^m + 3^m + \cdots + n^m \ge n\left(\dfrac{n+1}{k}\right)^m$, then $k = ?$

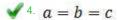**Question ID : 16794315499**

Ans ✗ 1. 1

✗ 2. m

✓ 3. 2

✗ 4. n

Q.5 If a, b, c are positive real numbers such that $a + b + c = 16$, then abc will be greatest when:

Question ID : 16794315497

Ans ✗ 1. $a \ne b \ne c$

✗ 2. $a \ne b = c$

✗ 3. $a = b \ne c$

✅ 4. $a = b = c$

Q.6 A welfare organization introduced an education scholarship scheme for the school going children of a backward village. The rates of scholarships were fixed as given:

Age Group	Amount of scholarship per month
5-7	30
8-10	40
11-13	50
14-16	60
17-19	70

The ages (years) of 30 school going children are noted as
11,8,10,5,7,12,7,17,5,13,9,8,10,15,7,12,6,7,8,11,14,18,6,13,9,10,6,15,13,5 years respectively. Find out the total monthly scholarship amount being paid to the students

Question ID : **16794315496**

Ans ❌ 1. 1200

❌ 2. 1300

❌ 3. 1390

✅ 4. 1290

Q.7

If $a, b > 0$, then the maximum value of $\dfrac{a^3 b}{(a + b)^4}$ is:

Question ID : **16794315501**

Ans ❌ 1. $\dfrac{27}{512}$

❌ 2. $\dfrac{81}{256}$

❌ 3. $\dfrac{81}{512}$

✅ 4. $\dfrac{27}{256}$

Q.8 Let $S = \{(-1, 0, 1),\ (2, 1, 4)\}$. The value of k for which the vector $(3k + 2,\ 3, 10)$ belongs to the linear span of S is:

Question ID : **16794315509**

Ans ❌ 1. 3

❌ 2. -2

✅ 3. 2

❌ 4. 8

Q.9 A, B, C are three sets of values of x :

A: 2,3,7,1,3,2,3
B: 7,5,9,12,5,3,8
C: 4,4,11,7,2,3,4

Select the correct statement from among the following

Question ID : **16794315491**

Ans ✅ 1. Mean, Median and Mode of A are same

❌ 2. Mean of C is equal to Median of B

❌ 3. Median of B is equal to Mode of A

❌ 4. Mean of A is equal to Mode of C

Q.10 The minimum value of the sum of real numbers $a^{-5},\ a^{-4},\ 3a^{-3},\ 1,\ a^8$ and a^{10} with $a > 0$ is:

Question ID : **16794315498**

Ans ❌ 1. 9

❌ 2. 7

✅ 3. 8

❌ 4. 6

Q.11

Question ID : **16794315492**

A cumulative frequency distribution is given below

Class	60-62	63-65	66-68	69-71	72-74
Cumulative frequency	3	20	36	48	50

Which one of the following class has maximum frequency?

Ans
✗ 1. 63-65
✗ 2. 66-68
✗ 3. 72-74
✔ 4. 69-71

Q.12 The following table gives the frequency distribution of the marks of 400 candidates in an examination

Question ID : **16794315494**

Marks	No of candidates	Marks	No of candidates
0-10	5	50-60	65
10-20	20	60-70	50
20-30	40	70-80	35
30-40	70	80-90	20
40-50	85	90-100	10

If the minimum marks required for passing are 35, what percentage of candidates passes the examination?

Ans
✗ 1. 80%
✗ 2. 70%
✗ 3. 65%
✔ 4. 75%

Q.13 If $I_1 = \int_e^{e^2} \frac{dx}{log x}$ and $I_2 = \int_1^2 \frac{e^x}{x} dx$, then

Question ID : **16794315507**

Ans
✔ 1. $I_1 - I_2 = 0$
✗ 2. $I_2 = 2I_1$
✗ 3. $I_1 = 2I_2$
✗ 4. $I_1 + I_2 = 0$

Q.14 If $\int \frac{(x-1)^2}{(x^2+1)^2} dx = \tan^{-1} x + g(x) + k$, then $g(x) =$

Question ID : **16794315505**

Ans
✗ 1. None of these

✗ 2. $\frac{1}{2(x^2+1)}$

✔ 3. $\frac{1}{x^2+1}$

✗ 4. $\tan^{-1} \frac{x}{2}$

Q.15 The characteristic polynomial of 3×3 matrix A is $|A - \lambda I| = \lambda^3 + 3\lambda^2 + 4\lambda + 3$. Let $x = trace(A)$ and $y = |A|$, the determinant of A. Then

Question ID : **16794315508**

Ans
✗ 1. $x = 3, y = -3$

✔ 2. $x = y = -3$

✗ 3. $\frac{x}{y} = \frac{4}{3}$

✗ 4. $\frac{x}{y} = \frac{3}{4}$

Q.16 Calculate the mode from the following data

Question ID : **16794315493**

Class	50-60	60-70	70-80	80-90	90-100	100-110	110-120
Frequency	8	10	16	14	10	5	2

Ans
✗ 1. 67.5

   ✅ 2. 77.5

   ❌ 3. 87.5

   ❌ 4. 76

Q.17 Calculate median for the following data

Class	0-4	4-6	6-8	8-12	12-18	18-20
Frequency	4	6	8	12	7	2

Question ID : **16794315495**

Ans ❌ 1. 7.5

   ❌ 2. 9

   ❌ 3. 8

   ✅ 4. 8.5

Q.18 For Binomial distribution, $n = 10$ and $p = 0.6, E(X^2)$ (second moment about origin) is:

Question ID : **16794315490**

Ans ❌ 1. 30

   ✅ 2. 38.4

   ❌ 3. 8

   ❌ 4. 38

Q.19 If the anti derivative of $\frac{e^{3x}+e^x}{e^{4x}-e^{2x}+1}$ is $f(e^x - e^{-x}) + C$, then $f(x)$ is equal to:

Question ID : **16794315506**

Ans ✅ 1. $\tan^{-1} x$

   ❌ 2. $\tan x$

   ❌ 3. $\cos^{-1} x$

   ❌ 4. $\sin x$

Q.20 If $ai > 0$ for $i = 1,2,3,\dots,n$ and $a_1 a_2 a_3 \dots a_n = 1$ then the greatest value of $(1 + a_1)(1 + a_2)\dots (1 + a_n)$ is:

Question ID : **16794315500**

Ans ❌ 1. 2^{2n}

   ✅ 2. 2^n

   ❌ 3. 1

   ❌ 4. $2^{\frac{n}{2}}$

Section : **Subject Related**

Q.1 The set of all $x \in R$ for which the vectors $(1, x, 0), (0, x^2, 1)$ and $(0, 1, x)$ are linearly independent in R^3 is:

Question ID : **16794315510**

Ans ❌ 1. $\{x \in R : x \neq 0\}$

   ❌ 2. $\{x \in R : x \neq -1\}$

   ❌ 3. $\{x \in R : x = 0\}$

   ✅ 4. $\{x \in R : x \neq 1\}$

Q.2 What is the dimension of the vector space formed by the solution of the system of following equations? $x_1 + x_2 + x_3 = 0; \ x_1 + 2x_2 = 0; \ x_2 - x_3 = 0.$

Question ID : **16794315511**

Ans ❌ 1. 0

   ❌ 2. 2

   ❌ 3. 3

   ✅ 4. 1

Q.3 If V is the real vector space of all mapping from R to R, $V_1 = \{f \in V : f(-x) = f(x)\}$ and $V_2 = \{f \in V : f(-x) = -f(x)\}$, then which one of the following is correct.

Question ID : **16794315512**

Ans ❌ 1. Neither V_1 nor V_2 are subspaces of V

✗ 2.

V_1 is a subspace of V, but V_2 is not a subspace of V

✔ 3. both V_1 and V_2 are subspaces of V

✗ 4.

V_1 is not a subspace of V, but V_2 is a subspace of V

Q.4 If n pigeons are assigned to m pigeonholes then one of the pigeonholes must contain at least _____ pigeons.

Question ID : **16794315513**

Ans

✔ 1. $\left(\dfrac{n-1}{m}\right)+1$

✗ 2. $\left(\dfrac{n-1}{m}\right)$

✗ 3. $\left(\dfrac{n}{m}-1\right)$

✗ 4. $\left(\dfrac{n+1}{m}\right)-1$

Q.5 The lines representing the linear equations $2x - y = 3$ and $4x - y = 5$.

Question ID : **16794315519**

Ans

✔ 1. intersect at a point

✗ 2. are coincident

✗ 3. intersect at exactly two points

✗ 4. are parallel

Q.6 Find the number of integers between 1 and 250, that are divisible by any of the integer 2, 3 and 7.

Question ID : **16794315515**

Ans

✔ 1. 179

✗ 2. 182

✗ 3. 170

✗ 4. 185

Q.7 The value of $47_{C_4} + \sum_{r=1}^{5} 52-r_{C_3}$ is equal to:

Question ID : **16794315516**

Ans

✔ 1. 52_{C_4}

✗ 2. 51_{C_4}

✗ 3. 51_{C_3}

✗ 4. None of these

Q.8 If the rth term in the expansion of $\left(\dfrac{x}{3} - \dfrac{2}{x^2}\right)^{10}$ contains x^4, then r is equal to:

Question ID : **16794315514**

Ans ✗ 1. 3

✔ 2. None of these

✗ 3. 2

✗ 4. 4

Q.9 The value of k for which the pair of linear equations $4x + 6y - 1 = 0$ and $2x + ky - 7 = 0$ represents parallel lines is:

Question ID : **16794315518**

Ans ✗ 1. $k = -2$

✗ 2. $k = 4$

✗ 3. $k = 2$

✔ 4. $k = 3$

Q.10 The recurrence $T(n) = 2T(n-1) + n$, for $n \geq 2$ and $T(1) = 1$ evaluates to:

Question ID : **16794315517**

Ans ✗ 1. $2^n - n$

✓ 2. $2^{n+1} - n - 2$

✗ 3. $2^n + n$

✗ 4. $2^{n+1} - 2n - 2$

Q.11 Devadasi system was prevalent in which part of India?

Question ID : **16794315524**

Ans ✗ 1. Eastern India

✗ 2. Western India

✗ 3. Northern India

✓ 4. Southern India

Q.12 Choose the odd one in the options given below:

Question ID : **16794315527**

Ans ✗ 1. Rangoli

✗ 2. Photography

✓ 3. Theatre

✗ 4. Sculpture

Q.13 If we define subjects from the socio-cultural context; they help students to

Choose the best option to complete the statement:

Question ID : **16794315523**

Ans ✗ 1. Seek better opportunities abroad

✗ 2. Prepare for the common exams

✗ 3. Be successful as an individual

✓ 4. Understand the society in which they live

Q.14 The philosophy of inclusion is built on the premise that _____.

Question ID : **16794315529**

Ans ✗ 1. All teachers are competent

✗ 2. All students should be provided support

✗ 3. All teachers can be trained

✓ 4.
All students should be valued for their unique abilities

Q.15 The changing trends in education reflect which of the following perspectives?

Question ID : **16794315528**

Ans ✗ 1.
Education has strong philosophical foundations

✓ 2.
Education to be meaningful should align with the society

✗ 3. Society is dynamic

✗ 4.
Community has significant say in education system

Q.16 Enabling teachers to learn and assimilate new teaching skills under controlled conditions is done in which of the following?

Question ID : **16794315525**

Ans ✗ 1. Remedial teaching

✓ 2. Micro teaching

$\times$ 3. Peer teaching

$\times$ 4. Team teaching

Q.17 A concept can be defined as _____.

Question ID : **16794315520**

Chose the most appropriate answer from the options below:

Ans $\times$ 1. A unique property of individuals

$\times$ 2. A different perception of individuals

$\times$ 3. A specific object with defined features

$\checkmark$ 4.
A group of objects with common characteristics

Q.18 Which of the following made literacy a community endeavour?

Question ID : **16794315521**

Ans $\times$ 1. Rajiv Gandhi Vidya Mission

$\times$ 2. Sarva Siksha Abhyan

$\times$ 3. National Adult Education Programme

$\checkmark$ 4. National Literacy Mission

Q.19 Phonics does not necessarily teach _____.

Question ID : **16794315526**

Choose the best option to complete the sentence:

Ans $\times$ 1. Pronunciation of the word

$\times$ 2. Blends of letters

$\times$ 3. Intonation of sounds

$\checkmark$ 4. Meaning of the word that is sounded

Q.20 Recognition, praise and reward as methods to reinforce appropriate behavior is proposed in which of the following theories?

Question ID : **16794315522**

Ans $\times$ 1. Classic conditioning

$\times$ 2. Discovery method of learning

$\times$ 3. Trial and error method

$\checkmark$ 4. Operant conditioning