Navodaya Vidyalaya Samiti

(An Autonomous Body Under MHRD) Government of India

Roll No.	
Participant Name	
Test Center Name	
Test Date	
Test Time	
Subject	PGT MATHEMATICS

Section : **General (English & Hindi)**

Q.1 Select the option that expresses the given sentence in direct speech.

Father told his children that he didn't wish to see any of them and ordered them to go away and leave him alone for some time.

Father said to his children:

Ans ✗ 1.

"I didn't wish to see any of you. Go away and leave him alone for some time."

✗ 2.

"He didn't wish to see any of them. They should go away and leave him alone for some time."

✗ 3.

"I am not wishing to see any of you. You may go away and leave me alone for some time."

✓ 4.

"I don't wish to see any of you. Go away and leave me alone for some time."

Question ID : **7193992750**
Status : **Answered**
Chosen Option : **4**

Q.2 Select the most appropriate option to fill in the blank:

The natural beauty of the Indus Valley is beyond description but the river _____ is very muddy.

Ans ✗ 1. herself

✓ 2. itself

✗ 3. himself

✗ 4. oneself

Question ID : **7193992736**
Status : **Answered**
Chosen Option : **2**

Q.3 In the following sentence four words or phrases have been underlined. One of them is incorrect. Choose the INCORRECT word or phrase from the given options:

Once I saw five townsmen getting to hold of a peasant and tearing at him like a pack of dogs.

Ans ✗ 1. Once I saw

✗ 2. pack of dogs

✓ 3. getting to hold

✗ 4. tearing at him

Q.4 Select the most appropriate option to fill in the blank:

This is one the _____ rooms in this hotel.

Ans   ✗ 1. more nice

     ✗ 2. nice

     ✔ 3. nicest

     ✗ 4. nicer

Q.5 Select the option that is NOT an antonym of another word by way of adding the prefix 'un-'.

Ans   ✔ 1. Underhand

     ✗ 2. Unmeasured

     ✗ 3. Unfamiliar

     ✗ 4. Undecided

Q.6 Select the INCORRECTLY spelt word:

Ans   ✗ 1. Cautious

     ✗ 2. Conspicuous

     ✗ 3. Conscious

     ✔ 4. Conscencious

Q.7 Select the most appropriate option to fill in the blank:

Their house is under repair. They _____ with us nowadays.

Ans   ✗ 1. have lived

     ✗ 2. lived

     ✗ 3. were living

     ✔ 4. are living

Q.8

Select the option that expresses the given sentence in reported speech.

"I don't like the pattern of the dress you have made for me," Esha said to me.

Esha told me that:

Ans ✗ 1.

she didn't like the pattern of the dress you have made for her.

✗ 2.

she didn't like the pattern of the dress you had made for me.

✗ 3. I don't like the pattern of the dress you have made for me.

✔ 4. she didn't like the pattern of the dress I had made for her.

Question ID : 7193992749
Status : **Answered**
Chosen Option : **4**

Q.9 Select the correct passive form of the given sentence:

The landowners allowed the peasants only a few weeks to simply pack and leave the land.

Ans ✔ 1.

The peasants were allowed by the landowners only a few weeks to simply pack and leave the land.

✗ 2.

The landowners were allowed by the peasants only a few weeks to simply pack and leave the land.

✗ 3.

Only a few weeks are being allowed by the landowners to the peasants to simply pack and leave the land.

✗ 4.

The peasants have been allowed by the landowners only a few weeks to simply pack and leave the land.

Question ID : 7193992740
Status : **Answered**
Chosen Option : **4**

Q.10 Select the correctly spelt word:

Ans ✗ 1. Preferrable

✗ 2. Priferable

✔ 3. Preferable

✗ 4. Prefarable

Question ID : 7193992745
Status : **Answered**
Chosen Option : **1**

Q.11 Select the most appropriate synonym of the given word:

OBLIGATORY

Ans ✔ 1. Essential

✗ 2. Exclusive

✗ 3. Flexible

✗ 4. Open

Question ID : 7193992741
Status : **Answered**
Chosen Option : **1**

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

Stones were in abundance in the valley. The Jews collected and carried _____ by ox cart to their establishment.

Ans   ✗ 1. they

     ✗ 2. their

     ✗ 3. us

     ✔ 4. them

Question ID : **7193992735**
Status : **Answered**
Chosen Option : **4**

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

The conductor of the bus swam towards the _____ child in an effort to save him.

Ans   ✗ 1. drowned

     ✗ 2. sunken

     ✔ 3. drowning

     ✗ 4. sunk

Question ID : **7193992733**
Status : **Answered**
Chosen Option : **3**

Q.14 Select the most appropriate ANTONYM of the given word:

INTEGRITY

Ans   ✗ 1. Reliability

     ✔ 2. Dishonesty

     ✗ 3. Truthfulness

     ✗ 4. Dependability

Question ID : **7193992743**
Status : **Answered**
Chosen Option : **2**

Q.15 Select the most appropriate option to fill in the blank:

No country lets you enter it _____ you have proper documents.

Ans   ✗ 1. because

     ✗ 2. so that

     ✗ 3. if

     ✔ 4. unless

Question ID : **7193992737**
Status : **Answered**
Chosen Option : **4**

Q.16 Select the most appropriate synonym of the given word:

FARCICAL

Ans
✗ 1. Serious
✔ 2. Absurd
✗ 3. Sarcastic
✗ 4. Persistent

Q.17 Select the correct passive form of the given sentence:

The new findings of the space scientists will improve existing models of solar systems.

Ans
✔ 1.
Existing models of solar systems will be improved by the new findings of the space scientists.

✗ 2.
Existing models of space scientists will be improved by the new findings of the solar systems.

✗ 3.
Existing models of solar systems will improve the new findings of the space scientists.

✗ 4.
Existing models of solar systems have been improved by the new findings of the space scientists.

Q.18 Select the most appropriate option to fill in the blank:

I gave my address to some friends in Croatia, _____ they decided to visit me when they came to Mumbai.

Ans
✔ 1. in case
✗ 2. as though
✗ 3. so that
✗ 4. whereas

Q.19 Select the most appropriate option to fill in the blank:

Tomorrow, definitely, I _____ this telephone to VSNL. It just doesn't work.

Ans
✗ 1. have surrendered
✔ 2. will surrender
✗ 3. surrender
✗ 4. surrendered

Q.20 In the following sentence four words or phrases have been underlined. One of them is incorrect. Choose the INCORRECT word or phrase from the given options:

On Monday, six special trains meant to transport stranded labourers from Kerala to three eastern states was pressed into service.

Ans
✗ 1. On Monday

Question ID : **7193992748**
Status : **Answered**
Chosen Option : **4**

Q.21 स्वेच्छा का संधि विच्छेद है:

Ans

❌ 1. स्व + ईच्छा

❌ 2. स्वा + ईच्छा

✅ 3. स्व + इच्छा

❌ 4. स + इच्छा

Question ID : **7193992763**
Status : **Answered**
Chosen Option : **3**

Q.22 शे + अन = शयन का संधि भेद है:

Ans

✅ 1. अयादि संधि

❌ 2. यण संधि

❌ 3. गुण संधि

❌ 4. विसर्ग संधि

Question ID : **7193992764**
Status : **Answered**
Chosen Option : **3**

Q.23 लोक के लिए अर्पण का समस्तपद है:

Ans

✅ 1. लोकार्पण

❌ 2. लोक है अर्पण

❌ 3. लोक को अर्पण

❌ 4. लोकमय

Question ID : **7193992766**
Status : **Answered**
Chosen Option : **1**

Q.24 नृत्य का तद्भव रूप होगा:

Ans

❌ 1. नट

❌ 2. नाटक

❌ 3. नाचना

✅ 4. नाच

Question ID : **7193992753**
Status : **Answered**

Q.25 अब मैंने चलने की आज्ञा दीजिए। वाक्य का शुद्ध रूप है:

Ans ✗ 1. चलने की अब मुझे आज्ञा दीजिए।

✗ 2. आज्ञा दीजिए अब मुझे चलने की।

✔ 3. अब मुझे चलने की आज्ञा दीजिए।

✗ 4. मुझे चलने की आज्ञा दीजिए अब।

Question ID : **7193992762**
Status : **Answered**
Chosen Option : **3**

Q.26 निम्नलिखित में से एकवचन कौन सा है?

Ans ✗ 1. गुरुजन

✗ 2. अध्यापिकाएँ

✗ 3. पुड़ियाँ

✔ 4. बिटिया

Question ID : **7193992769**
Status : **Answered**
Chosen Option : **4**

Q.27 'गुड़ गोबर करना' मुहावरे का अर्थ होगा:

Ans ✗ 1. काम बनाना

✗ 2. काम करते जाना

✗ 3. काम पर ध्यान न देना

✔ 4. बने बनाए काम को बिगाड़ना

Question ID : **7193992759**
Status : **Answered**
Chosen Option : **4**

Q.28 यात्री का पर्याय नहीं है:

Ans ✗ 1. राहगीर

✗ 2. मुसाफ़िर

✔ 3. हमसफ़र

✗ 4. राही

Question ID : **7193992755**
Status : **Answered**
Chosen Option : **3**

Q.29 स्त्रीलिंग पुल्लिंग का अशुद्ध युग्म है:

Ans ✗ 1. शिक्षक - शिक्षिका

✗ 2. लाला - ललाइन

✗ 3. संचालक - संचालिका

✔ 4. सेठ - सेठनी

Question ID : 7193992770
Status : **Answered**
Chosen Option : **4**

Q.30 कौन सा शब्द युग्म वचन कि दृष्टि से शुद्ध है:

Ans ✔ 1. शाखा - शाखाएँ

✗ 2. सज्जनता - सज्जनों

✗ 3. रात - रात्री

✗ 4. वर्षा - वर्षाओं

Question ID : 7193992768
Status : **Answered**
Chosen Option : **1**

Q.31 'वैध' का विलोम होगा:

Ans ✗ 1. भद्र

✗ 2. वैधानिक

✗ 3. सार्थक

✔ 4. अवैध

Question ID : 7193992758
Status : **Answered**
Chosen Option : **4**

Q.32 निम्नलिखित में से कौन सा तद्भव शब्द है:

Ans ✔ 1. तीरथ

✗ 2. नयन

✗ 3. पक्षी

✗ 4. पत्र

Question ID : 7193992754
Status : **Answered**
Chosen Option : **1**

Q.33 गेहूँ का तत्सम रूप है:

Ans ✗ 1. फ़सल

✗ 2. अनाज

✗ 3. आटा

✔ 4. गोधूम

Question ID : 7193992752

Q.34 आज वह _____ में भाग ले रहा है। सही शब्द से रिक्त स्थान भरिए:

Ans ✔ 1. घुड़दौड़

❌ 2. घुड़दौड़ी

❌ 3. घोड़ा दौड़

❌ 4. घोड़े दौड़

Q.35 विलोम शब्द का कौन सा युग्म सही है:

Ans ❌ 1. शोक-शौक

❌ 2. पक्ष-पक्षधर

❌ 3. ज्ञान-विज्ञान

✔ 4. खरा-खोटा

Q.36 घड़ी के लिए तत्सम शब्द होगा:

Ans ❌ 1. घड़ा

❌ 2. घटा

❌ 3. घट

✔ 4. घटिका

Q.37 'बढ़ा चढ़ाकर बात करना' वाक्यांश के लिए उचित मुहावरा होगा:

Ans ✔ 1. नमक मिर्च लगाना

❌ 2. चार चाँद लगाना

❌ 3. नानी याद आना

❌ 4. ज़हर उगलना

Q.38 सोना का पर्याय है:

Ans ❌ 1. ताम्र

✅ 2. स्वर्ण

❌ 3. रजत

❌ 4. हीरक

Q.39 यमक अलंकार का उदाहरण है:

Ans

❌ 1. लगा दी किसने आकर आग।

❌ 2. यह काया है या शेष उसी की छाया।

❌ 3. सागर सा गंभीर हृदय हो।

✅ 4. कनक कनक ते सौ गुनी, मादकता अधिकाय।

Q.40 'चमड़ी जाए पर दमड़ी न जाए' लोकोक्ति का अर्थ होगा:

Ans

❌ 1. आपस में फूट पड़ना

❌ 2. धन की हानि होना

❌ 3. चोट लगना

✅ 4. अत्यधिक कंजूस होना

Section : **General Awareness**

Q.1 Which of the following chief ministers has been conferred the Skoch Chief Minister of the Year Award for 2018?

Ans

❌ 1. Naveen Patnaik

❌ 2. Vijay Rupani

❌ 3. Nitish Kumar

✅ 4. Mamata Banerjee

Q.2 A cell is enclosed by a thin outer layer called:

Ans

✅ 1. Cell membrane

❌ 2. Nucleus

❌ 3. Celluloid

❌ 4. Cell guard

Q.3 Which of the following Indian women weightlifters won gold medal in the Commonwealth Games 2018?

Ans ✗ 1. Vandna Gupta

✗ 2. Saraswati Rout

✗ 3. Purnima Pandey

✔ 4. Punam Yadav

Question ID : **7193992779**
Status : **Answered**
Chosen Option : **4**

Q.4 Which country has ventured into the Internet of Things (IoT) with the launch of a new satellite system named 'Marathon'?

Ans ✔ 1. Russia

✗ 2. China

✗ 3. United Kingdom

✗ 4. United States of America

Question ID : **7193992777**
Status : **Answered**
Chosen Option : **1**

Q.5 Which country won the FIFA Football World Cup 2018 held in Russia?

Ans ✗ 1. Croatia

✗ 2. India

✔ 3. France

✗ 4. Germany

Question ID : **7193992781**
Status : **Answered**
Chosen Option : **3**

Q.6 Department of Industrial Policy and Promotion (DIPP), in partnership with energy companies, has launched the _____ Programme for startups in energy sector.

Ans ✗ 1. Collaborate to Innovate

✔ 2. Integrate to Innovate

✗ 3. Integrate to Excel

✗ 4. Collaborate to Excel

Question ID : **7193992792**
Status : **Answered**
Chosen Option : **1**

Q.7 Which one of the following is the most populous city or urban agglomeration by population in India?

Ans ✗ 1. Chennai

✗ 2. Kolkata

✗ 3. New Delhi

✔ 4. Mumbai

Q.8 Which Indian city is declared the first World Heritage City by UNESCO?

Ans
- ✗ 1. Hyderabad
- ✔ 2. Ahmedabad
- ✗ 3. Banaras
- ✗ 4. Delhi

Q.9 What is the amount of dividend paid by RBI to Indian Government for FY 2018?

Ans
- ✔ 1. ₹ 50,000 Crore
- ✗ 2. ₹ 20,000 Crore
- ✗ 3. ₹ 10,000 Crore
- ✗ 4. ₹ 80,000 Crore

Q.10 Who has been appointed as interim director of the Central Bureau of Investigation (CBI) in October 2018?

Ans
- ✗ 1. Manish Sinha
- ✗ 2. Rakesh Asthana
- ✗ 3. Dineswar Prasad
- ✔ 4. M. Nageswara Rao

Q.11 Which country has unveiled the world's first floating nuclear power station?

Ans
- ✗ 1. United Kingdom
- ✗ 2. Germany
- ✔ 3. Russia
- ✗ 4. United States of America

Q.12 Name the novel that features India's national song 'Vande Mataram'?

Ans
- ✔ 1. Anand Math
- ✗ 2. Kapalkundala
- ✗ 3. Rajsimha
- ✗ 4. Durgeshnandini

Q.13 Which among the following is a base?

Ans ✔ 1. NaOH

✘ 2. HCl

✘ 3. H_2SO_4

✘ 4. HNO_3

Q.14 Where there is only one House of the Legislature of a state, it is known as:

Ans ✔ 1. The Legislative Assembly

✘ 2. The Council of States

✘ 3. The Legislative Council

✘ 4. The House of the People

Q.15 How many security and intelligence agencies have been authorised by the government to intercept, monitor and decrypt any information generated, transmitted, received or stored in any computer, as per government notification dated 20th December 2018?

Ans ✘ 1. 6

✔ 2. 10

✘ 3. 8

✘ 4. 12

Q.16 What is the name of the app launched by Union Ministry of Commerce and Industry for exporters and importers of the country?

Ans ✘ 1. Vyapar Vikas

✘ 2. Vyapar Mitra

✘ 3. Aayat Mitra

✔ 4. Niryat Mitra

Q.17 Which of the following sportspersons was given Khel Ratna Award 2018?

Ans ✔ 1. Mirabai Chanu

✘ 2. P. V. Sindhu

✗ 3. Tejaswini Savant

✗ 4. M. C. Mary Kom

Q.18 Which of the following articles of the Constitution of India deals with the creation of Legislative Councils in States?

Ans
✗ 1. Article 233

✗ 2. Article 121

✔ 3. Article 169

✗ 4. Article 223

Q.19 Which Nawab of Bengal was defeated by the British forces in the Battle of Plassey in 1757?

Ans
✗ 1. Mir Jafar

✗ 2. Sarfaraz Khan

✔ 3. Siraj-ud-daula

✗ 4. Mir Qasim

Q.20 Which military communication satellite was launched by the Indian Space Research Organization (ISRO) in December 2018?

Ans
✔ 1. GSAT-7A

✗ 2. GSAT-11

✗ 3. GSAT-17

✗ 4. GSAT-6A

Q.21 Which of the following countries has introduced a contribution-based social security scheme for formal sector workers in November 2018?

Ans
✗ 1. Maldives

✗ 2. Myanmar

✔ 3. Nepal

✗ 4. Sri Lanka

Q.22 Who penned the novel 'A Suitable Boy'?

Ans
✗ 1. Amitav Ghosh

✔ 2. Vikram Seth

✗ 3. Shashi Tharoor

✗ 4. Vikram Chandra

Q.23 The total number of ministers, including the Chief Minister, in the Council of Ministers in a state cannot exceed _____ of the total number of members of _____ .

Ans ✗ 1. 10 %; the Lok Sabha

✗ 2. 10 %; the Legislative Assembly of that state

✗ 3. 20 %; the Lok Sabha

✔ 4. 15 %; the Legislative Assembly of that state

Q.24 Which of the following Articles of the Constitution of India deals with ancillary powers of the Supreme Court?

Ans ✗ 1. Article 85

✗ 2. Article 186

✔ 3. Article 140

✗ 4. Article 63

Q.25 An Ordinance promulgated under Article 213 of the Constitution of India can be withdrawn by the:

Ans ✗ 1. Home Minister

✗ 2. Vice-President

✔ 3. Governor

✗ 4. Finance Minister

Q.26 Name the Sultan of Delhi who shifted his capital from Delhi to Deogiri?

Ans ✔ 1. Muhammad Bin Tughlak

✗ 2. Qutbuddin Aibak

✗ 3. Alauddin Khilji

✗ 4. Ibrahim Lodhi

Q.27 The distance-time graph is steeper for _____ objects.

Ans ✗ 1. oscillating

✗ 2. non-moving

✔ 3. faster

✗ 4. slower

Question ID : **7193992795**
Status : **Answered**
Chosen Option : **3**

Q.28 Which country's player has P. V. Sindhu defeated to win her maiden World Tour Finals title in December 2018?

Ans ✗ 1. China

✔ 2. Japan

✗ 3. South Korea

✗ 4. Indonesia

Question ID : **7193992780**
Status : **Answered**
Chosen Option : **2**

Q.29 Which former Indian diplomat has been elected to an Asia Pacific seat on the UN's Committee on Economic, Social and Cultural Rights (CESCR)?

Ans ✗ 1. Shivshankar Menon

✗ 2. Vikas Swarup

✗ 3. Lakshmi Puri

✔ 4. Preeti Saran

Question ID : **7193992771**
Status : **Answered**
Chosen Option : **1**

Q.30 Where is the Gahirmatha Marine Wildlife Sanctuary located?

Ans ✗ 1. Kerala

✗ 2. Goa

✗ 3. Maharashtra

✔ 4. Odisha

Question ID : **7193992798**
Status : **Answered**
Chosen Option : **4**

Section : **General Aptitude**

Q.1 The total number of factors of $8 \times 18^4 \times (35)^8$ is:

Ans ✔ 1. 5832

✗ 2. 1792

✗ 3. 3584

✗ 4. 90

Question ID : **7193992821**
Status : **Answered**
Chosen Option : **1**

Q.2

A person marks his goods 25% above the cost price. He sells 40% of the goods at the marked price, 35% at 12% discount and remaining at 16% discount. What is his overall gain percent?

Ans ✗ 1. 16.25%

✗ 2. 15.75%

✗ 3. 15.25%

✔ 4. 14.75%

Q.3 The average of 19 numbers is 72. The average of the first 10 numbers is 65 and the average of the last 10 numbers is 74.

If the 10th number is excluded, what is the average of the remaining numbers, correct to one decimal place?

Ans ✗ 1. 75.1

✗ 2. 74.6

✗ 3. 75.3

✔ 4. 74.8

Q.4 The HCF of two numbers is 18 and their product is 13608. If both are three-digit numbers, what is the sum of their reciprocals?

Ans ✗ 1. $\dfrac{13}{378}$

✔ 2. $\dfrac{13}{756}$

✗ 3. $\dfrac{15}{756}$

✗ 4. $\dfrac{15}{378}$

Q.5 Study the following sequence carefully and select the number that will correctly replace the question mark (?) in it.

628 : 16 , 593 : 17 , 495 : 18 , 315 : ?

Ans ✗ 1. 15

✗ 2. 29

✗ 3. 10

✔ 4. 09

Q.6 Two vessels A and B contain spirit and water in the ratio 3 : 4 and 5 : 8 respectively. Their contents are mixed in the ratio 7 : 13. In 200 ml of this solution, how much water should be mixed to get a solution containing spirit and water in the ratio 4 : 9?

Ans ✗ 1. 42 ml

✗ 2. 49 ml

✗ 3. 56 ml

✔ 4. 60 ml

Q.7 If $\sqrt{52 - 30\sqrt{3}} = a + b\sqrt{3}$, then $(a + b)$ is equal to:

Ans ✘ 1. 4

✘ 2. -4

✔ 3. -2

✘ 4. 2

Q.8 Select the option that is related to the third term in the same way as the second term is related to the first term.

Reading : Knowledge :: Work : ?

Ans ✘ 1. Employment

✘ 2. Engagement

✔ 3. Experience

✘ 4. Experiment

Q.9 Sakshi is the wife of Nilesh. Ravi is the only grandson of Saroj, who is the wife of Dinesh and Mother-in-law of Sakshi. How is Nilesh related to Dinesh?

Ans ✘ 1. Nephew

✔ 2. Son

✘ 3. Son-in-law

✘ 4. Grandson

Q.10 Arrange the following words to form a meaningful sentence.

Taj Mahal	at	A	quick	look
5	1	3	2	4

Ans ✘ 1. 1, 2, 3, 4, 5

✘ 2. 4, 3, 2, 1, 5

✘ 3. 5, 1, 2, 3, 4

✔ 4. 3, 2, 4, 1, 5

Q.11 What is the sum of digits of the least number that should be subtracted from 839648 to make it a perfect square?

Ans   ✗ 1. 14

     ✗ 2. 12

     ✗ 3. 15

     ✔ 4. 16

> Question ID : **7193992816**
> Status : **Answered**
> Chosen Option : **1**

Q.12 In a code language, SUNSET is written as RTMRDS. How will CHALK be written as in that language?

Ans   ✗ 1. JKZJB

     ✗ 2. BJZKJ

     ✔ 3. BGZKJ

     ✗ 4. JKZGB

> Question ID : **7193992808**
> Status : **Answered**
> Chosen Option : **3**

Q.13 Ram's mother is also my sister's mother. How is Ram related to me?

Ans   ✗ 1. Sister

     ✗ 2. Uncle

     ✗ 3. Cousin

     ✔ 4. Brother

> Question ID : **7193992812**
> Status : **Answered**
> Chosen Option : **4**

Q.14 Select the option that is related to the third term in the same way as the second term is related to the first term.

Horse : Jockey :: Car : ?

Ans   ✗ 1. Brake

     ✔ 2. Chauffeur

     ✗ 3. Steering

     ✗ 4. Mechanic

> Question ID : **7193992802**
> Status : **Answered**
> Chosen Option : **2**

Q.15 Arrange the following words in the order in which they appear in an English dictionary.

Funny	Fantastic	Fictitious	Frivolous	Fickle
5	1	3	2	4

Ans   ✗ 1. 1, 2, 4, 3, 5

     ✗ 2. 1, 3, 4, 2, 5

     ✗ 3. 1, 5, 2, 4, 3

     ✔ 4. 1, 4, 3, 2, 5

> Question ID : **7193992804**
> Status : **Answered**

Q.16 Select the option that is related to the third term in the same way as the second term is related to the first term.

Man : Nose :: Fish : ?

Ans ✔ 1. Gills

✘ 2. Lungs

✘ 3. Fins

✘ 4. Scales

Question ID : **7193992801**
Status : **Answered**
Chosen Option : **1**

Q.17 A person covers first 100 km with a speed of 60 km/h and next 150 km with a speed of 45 km/h. What is his average speed for the whole journey (in km/h)?

Ans ✔ 1. 50

✘ 2. 52.5

✘ 3. 52.8

✘ 4. 53.5

Question ID : **7193992829**
Status : **Answered**
Chosen Option : **1**

Q.18 Five friends, Avanti, Vishakha, Kiran, Deena and Hansika, are sitting around a circular table facing the centre. Vishakha is sitting second to the right of Deena. Avanti is sitting third to the left of Kiran, who is not sitting immediately next to Hansika. Who is sitting to the immediate right of Deena?

Ans ✘ 1. Hansika

✘ 2. Vishakha

✔ 3. Kiran

✘ 4. Avanti

Question ID : **7193992814**
Status : **Answered**
Chosen Option : **1**

Q.19 If '+' means 'multiplication', '−' means 'division', '*' means 'addition' and '/' means 'subtraction', then what will be the value of the following expression?

190 − 19 + 6 * 8 / 3

Ans ✘ 1. 155

✘ 2. 380

✔ 3. 65

✘ 4. 472

Question ID : **7193992809**
Status : **Answered**
Chosen Option : **3**

Q.20 Select the option that will replace the question mark (?) in the following series.

21, 32, 43, ? , 65 ,76

Ans ✘ 1. 50

✘ 2. 62

✘ 3. 66

✔ 4. 54

Q.21 Arjun is facing towards the south. From there, he walks 15 m towards the east, then 20 m towards the north, then 15 m towards the east and then 20 m towards the north to reach point B. What is the shortest distance between his starting point and point B?

Ans ✘ 1. 70 m

✘ 2. 25 m

✔ 3. 50 m

✘ 4. 60 m

Q.22 The value of $0.\bar{6} + 0.4\bar{9} + 0.4\overline{32}$ is equal to:

Ans ✘ 1. $1.5\overline{89}$

✔ 2. $1.5\overline{98}$

✘ 3. $1.4\overline{89}$

✘ 4. $1.6\overline{03}$

Q.23 The unit's digit in the result of $(41)^{20} + (23)^{41} - 27^{18}$ is:

Ans ✘ 1. 4

✘ 2. 3

✘ 3. 9

✔ 4. 5

Q.24 If a : b = 4 : 5 and c : b = 2 : 3, then what is the value of a : b : c?

Ans ✘ 1. 15 : 10 : 8

✘ 2. 12 : 5 : 10

✔ 3. 12 : 15 : 10

✘ 4. 8 : 10 : 15

Q.25 A sum of ₹ 16,600 is invested at the rate of 10 % per annum, interest being compounded half yearly, for 15 months. What is the percentage increase in the sum at the end of 15 months, correct to one decimal place?

Ans ✘ 1. 12.8 %

✘ 2. 13.2 %

✗ 3. 12.6 %

✓ 4. 13 %

Q.26 The efficience of A is 30 % less than that of B. If working together, they can complete a certain piece of work in 20 days, in how many days A alone will complete 70 % of that same work?

Ans ✗ 1. 36

✓ 2. 34

✗ 3. 35

✗ 4. 32

Q.27 With which smallest digit should letter 'x' in the number 538x25 be substituted so that the number becomes divisible by 15?

Ans ✓ 1. 1

✗ 2. 7

✗ 3. 4

✗ 4. 5

Q.28 If 1 January 2018 was a Monday, then what day was it on 1 January 2019?

Ans ✓ 1. Tuesday

✗ 2. Monday

✗ 3. Wednesday

✗ 4. Sunday

Q.29 In a code language, SUN is written as NUS. How will MAT be written as in that language?

Ans ✗ 1. MUT

✓ 2. TAM

✗ 3. MAT

✗ 4. TUM

Q.30 The sum of the first 40 terms of $\frac{1}{4\times8} + \frac{1}{8\times12} + \frac{1}{12\times16} + $ _____ is:

Ans ✓ 1. $\frac{5}{82}$

✗ 2. $\frac{39}{320}$

✗ 3. $\frac{5}{164}$

✗ 4. $\frac{39}{41}$

Section : **Teaching Aptitude**

Q.1 Teaching about the currency used by the Cholas by showing a coin of that time kept in a museum in the real time is an example of _____ teaching.

Ans ✗ 1. working model

✗ 2. sectional model

✔ 3. Realia

✗ 4. Diorama

Q.2 Which of the following should be an objective of teaching social science at secondary level?

Ans ✔ 1.

To enable children to critically examine social and economic issues and challenges like poverty, child labour, destitution, illiteracy and various other dimensions of inequality

✗ 2.

To develop in the children an understanding about the earth as the habitat of humankind and other forms of life

✗ 3.

To sensitise the children to social issues and develop in them a respect for difference and diversity

✗ 4.

To develop in the children skills of observation, identification and classification

Q.3 The subsystem of a language that deals with the rules of word order and word combinations to form phrases and sentences is known as:

Ans ✗ 1. morphology

✗ 2. phonology

✔ 3. syntax

✗ 4. semantics

Q.4 While teaching science to students, knowledge about cognitive tasks, including appropriate contextual and conditional knowledge, falls under _____.

Ans ✔ 1. metacognitive knowledge

✗ 2. procedural knowledge

✗ 3. factual knowledge

✗ 4. conceptual knowledge

Q.5 Mary is a seventh grade teacher. She has a unique ability to sense the feelings and experiences of her students and fully appreciates them as if they are her feelings. What is the correct term that can be used to describe Mary's personality?

Ans

✔ 1. Empathetic

✗ 2. Reflective

✗ 3. High acceptance

✗ 4. Genuine

Q.6 Which of the following attributes of educational objectives of teaching science falls under the psychomotor domain?

Ans

✗ 1. Responding

✗ 2. Valuing

✗ 3. Receiving

✔ 4. Articulation

Q.7 Identify the model of inclusive education in which a student is included during regular education classroom instruction to provide the student appropriate interaction with non-disabled peers. The student is given shortened assignments.

Ans

✗ 1. Non-academic model

✔ 2. Social mainstreaming model

✗ 3. Self-contained model

✗ 4. Pull-out (resource) model

Q.8 Who quoted the following on education?

"Education which will offer the tools whereby one can live for the divine, for the country, for oneself and for others and this must be the ideal of every school which calls itself national."

Ans

✗ 1. Rabindranath Tagore

✔ 2. Sri Aurobindo

✗ 3. Mahatma Gandhi

✗ 4. Swami Vivekananda

Q.9 Which of the following is the first law or primary law of learning as per Thorndike?

Ans

✗ 1. Law of Multiple Response

✔ 2. Law of Readiness
✘ 3. Law of Exercise
✘ 4. Law of Effect

Question ID : **7193992837**
Status : **Answered**
Chosen Option : **2**

Q.10 Which of the following is NOT a factor affecting social development?

Ans
✘ 1. Socio-economic status
✘ 2. Imitation and identification
✘ 3. School experiences
✔ 4. Evolutionary impact

Question ID : **7193992833**
Status : **Answered**
Chosen Option : **4**

Q.11 The processing of cognition influenced by stored knowledge brought through senses is called:

Ans
✘ 1. lateral processing
✘ 2. sideways processing
✔ 3. top-down processing
✘ 4. bottom-down processing

Question ID : **7193992834**
Status : **Answered**
Chosen Option : **4**

Q.12 Anil, a 4-year-old, looks at two jars meant to be filled with candies. One is a tall, thin jar and the other one is a short, wide jar. Equal number of candies are filled in each of these jars. Anil infers that the tall, thin jar has more candies than the short, wide one. Which of the following aspects has Anil NOT acquired as per Piaget?

Ans
✘ 1. Memory
✘ 2. Imagination
✔ 3. Concept of conservation
✘ 4. Social concept

Question ID : **7193992832**
Status : **Answered**
Chosen Option : **3**

Q.13 Which of the following is a NOT a characteristic of a usable hypothesis?

Ans
✔ 1. It has to be lengthy with high vocabulary usage.
✘ 2. It should be capable of being tested.
✘ 3. It should have conceptual clearness.
✘ 4. It should be closest to things observable.

Question ID : **7193992849**
Status : **Answered**
Chosen Option : **2**

Q.14 Which of the following schemes of the Government of India seeks to bring about qualitative improvement in Madrasas to enable Muslim children attain standards of the national education system in formal education subjects?

Ans
  ✗ 1. NIOS
  ✗ 2. NAS
  ✗ 3. IDMI
  ✓ 4. SPQEM

Question ID : **7193992836**
Status : **Answered**
Chosen Option : **3**

Q.15 Anoopa uttered the first word at the age of 11 months and began to play alone with her doll at the age of 2 years. These schedules of development are called:

Ans
  ✗ 1. learning phases
  ✗ 2. stepwise development
  ✗ 3. growth phases
  ✓ 4. milestones of development

Question ID : **7193992831**
Status : **Answered**
Chosen Option : **3**

Q.16 When the function of a language is to cause or prevent actions, it is called the _____ function of a language.

Ans
  ✗ 1. expressive
  ✓ 2. directive
  ✗ 3. explorative
  ✗ 4. informative

Question ID : **7193992840**
Status : **Answered**
Chosen Option : **2**

Q.17 A student trying to solve a mathematical problem to get 'A' grade in his assignment is an example of _____. Identify the type of attention as described by psychologist Ross.

Ans
  ✓ 1. volitional attention
  ✗ 2. focused attention
  ✗ 3. non-volitional attention
  ✗ 4. involuntary attention

Question ID : **7193992838**
Status : **Answered**
Chosen Option : **2**

Q.18 The first step in the acquisition of a language is through:

Ans
  ✓ 1. listening
  ✗ 2. reading
  ✗ 3. speaking
  ✗ 4. writing

Question ID : **7193992842**
Status : **Answered**

Q.19 Which of the following instruments is used to measure attention span?

Ans

✗ 1. Stroboscope

✗ 2. Kinetoscope

✔ 3. Tachistoscope

✗ 4. Stereoscope

Q.20 The ability to perceive existing gender differences and issues and incorporate them into strategies and actions is called:

Ans

✗ 1. gender equity

✔ 2. gender sensitivity

✗ 3. gender parity

✗ 4. gender awareness

Section : **Concerned Subject Knowledge**

Q.1 The principal value of $\sin^{-1}\left(-\frac{\sqrt{3}}{2}\right) + \cos^{-1}\left(\cos\left(\frac{7\pi}{6}\right)\right)$ is:

Ans

✔ 1. $\frac{\pi}{2}$

✗ 2. $\frac{3\pi}{2}$

✗ 3. $\frac{5\pi}{6}$

✗ 4. $\frac{\pi}{3}$

Q.2 If y is a solution of the equation $(1+x)\frac{dy}{dx} - xy = 1, y(0) = -1$, then $y(1)$ is equal to:

Ans

✗ 1. $1/2$

✗ 2. $e + 1/2$

✔ 3. $-1/2$

✗ 4. $e - 1/2$

Q.3 The value of x for $\sin[\cot^{-1}(x+1)] = \cos[\tan^{-1}(x)]$ is:

Ans

✗ 1. 0

✗ 2. 1

✗ 3. 1/2

✔ 4. −1/2

Q.4 The value of the expression $\frac{1}{(\sqrt{3})\sin 250°} + \frac{1}{\cos 290°}$ equals:

Ans

✗ 1. $\frac{2}{\sqrt{3}}$

✗ 2. $\frac{\sqrt{3}}{2}$

✔ 3. $\frac{4}{\sqrt{3}}$

✗ 4. $\frac{\sqrt{3}}{4}$

Q.5 Which of the following functions is differentiable at $x = 0$?

Ans

✗ 1. $\cos(|x|) + |x|$

✔ 2. $\sin(|x|) - |x|$

✗ 3. $\sin(|x|) + |x|$

✗ 4. $\cos(|x|) - |x|$

Q.6 Let a and b be two positive integers. Then gcd(a,b). lcm(a,b) equals:

Ans

✗ 1. $a - b$

✗ 2. $a + b$

✔ 3. ab

✗ 4. a / b

Q.7 If A is the area formed by the positive x-axis, and the normal and tangent to the circle $x^2 + y^2 = 4$ at $(1, \sqrt{3})$, then $\frac{A}{\sqrt{3}}$ equals:

Ans

✗ 1. 1

✗ 2. $\frac{2}{\sqrt{3}}$

✔ 3. 2

✗ 4. 4

Q.8 If the mean of a set of 10 observations $x_1, x_2, \ldots, x_{10}$ is 30, then the mean of $x_1 + 5, x_2 + 10, \ldots, x_{10} + 50$ is:

Ans ✗ 1. 27.5

✔ 2. 57.5

✗ 3. 53.5

✗ 4. 59.5

Question ID : **7193992899**

Status : **Answered**

Chosen Option : **2**

Q.9 If $3x + 2y + z = 0, x + 4y + z = 0, 2x + y + 4z = 0$ is a system of equations, then:

Ans ✗ 1.

it can be reduced to a single equation and therefore a solution does not exist.

✔ 2. it has only the trivial solution $x = 0, y = 0, z = 0$.

✗ 3. the determinant of the matrix coefficient is zero.

✗ 4. it is inconsistent.

Question ID : **7193992873**

Status : **Answered**

Chosen Option : **2**

Q.10

A basis for the range of the transformation $T : R^3 \to R^3, T\left(\begin{bmatrix} x \\ y \\ z \end{bmatrix}\right) = \begin{bmatrix} x \\ y \\ 0 \end{bmatrix}$ is given by:

Ans

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

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

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

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

Question ID : **7193992908**

Status : **Answered**

Chosen Option : **3**

Q.11 In a class of 25 students, 12 have taken mathematics, 8 have taken mathematics and computer science. The number of students who have taken computer science but NOT mathematics is:

Ans ✔ 1. 13

✗ 2. 8

✗ 3. 4

✗ 4. 17

Question ID : **7193992852**

Status : **Answered**

Q.12 Two girls and four boys are to be seated in a row in such a way that the girls do NOT sit together. In how many different ways can it be done?

Ans
  ✗ 1. 360
  ✔ 2. 480
  ✗ 3. 240
  ✗ 4. 720

Question ID : **7193992855**
Status : **Answered**
Chosen Option : **2**

Q.13 If $\vec{a} + \vec{b} + \vec{c} = 0, |\vec{a}| = 3, |\vec{b}| = 5$ and $|\vec{c}| = 7$, then the angle between $\vec{a}$ and $\vec{b}$ is:

Ans
  ✗ 1. $\frac{\pi}{6}$

  ✗ 2. $\frac{2\pi}{3}$

  ✗ 3. $\frac{3\pi}{2}$

  ✔ 4. $\frac{\pi}{3}$

Question ID : **7193992892**
Status : **Answered**
Chosen Option : **4**

Q.14 If $\tan(A - B) = \frac{1}{\sqrt{3}}$ and $\tan(A + B) = \sqrt{3}$, then the values of A and B are respectively:

Ans
  ✔ 1. 45°, 15°
  ✗ 2. 30°, 60°
  ✗ 3. 30°, 30°
  ✗ 4. 40°, 20°

Question ID : **7193992878**
Status : **Answered**
Chosen Option : **1**

Q.15 The radius of a sphere whose centre is $(4, 4, -2)$ and which passes through the origin is:

Ans
  ✔ 1. 6
  ✗ 2. 4
  ✗ 3. 1
  ✗ 4. 5

Question ID : **7193992897**
Status : **Answered**
Chosen Option : **1**

Q.16 The points with the position vectors $60\vec{i} + 3\vec{j}$, $40\vec{i} - 8\vec{j}$, $a\vec{i} - 52\vec{j}$ are collinear if the value of 'a' equals:

Ans
  ✗ 1. 40
  ✔ 2. −40
  ✗ 3. − 20
  ✗ 4. 20

Q.17 AB is a straight line and O is a point on the line AB. If one draws a line OC NOT coinciding with OA or OB, then the ∠AOC and ∠BOC are:

Ans

✗ 1. complementary

✗ 2. together equal to 130°

✔ 3. supplementary

✗ 4. equal

Q.18 If $A = f_{xx}(a, b), B = f_{xy}(a, b)$ and $C = f_{yy}(a, b)$, then the function f(x, y) will have a maximum at the point (a, b) if:

Ans

✗ 1. $f_x = 0, f_y = 0, AC < B^2$ and $A > 0$

✗ 2. $f_x = 0, f_y = 0, AC > B^2$ and $A > 0$

✗ 3. $f_x = 0, f_y = 0, AC < B^2$ and $A < 0$

✔ 4. $f_x = 0, f_y = 0, AC > B^2$ and $A < 0$

Q.19 The lines $\frac{x-1}{k} = \frac{y-4}{2} = \frac{z-5}{1}$ and $\frac{x-2}{1} = \frac{y-3}{1} = \frac{z-4}{-k}$ are coplanar if the value of k is:

Ans

✗ 1. 1

✗ 2. 2

✗ 3. −2

✔ 4. −3

Q.20 $\frac{\sin 7x + 6\sin 5x + 17\sin 3x + 12\sin x}{\sin 6x + 5\sin 4x + 12\sin 2x}$ equals:

Ans

✗ 1. $\sin x$

✗ 2. $2\sin x$

✗ 3. $\cos x$

✔ 4. $2\cos x$

Q.21 Let $A = \begin{pmatrix} 2 & 0 & 0 \\ 0 & 2 & 0 \\ 0 & 0 & 2 \end{pmatrix}$ and $B = \begin{pmatrix} 1 & 2 & 3 \\ 0 & 1 & 3 \\ 0 & 0 & 2 \end{pmatrix}$ be matrices. Then the determinant of AB equals:

Ans

✗ 1. 8

✗ 2. 32

✗ 3. 4

✔ 4. 16

Q.22 The nature of singularity of the function tan (1/z):

Ans ✗ 1. z = 0 is an isolated singularity

✗ 2. z = 0 is an isolated essential singularity

✔ 3. z = 0 is a non-isolated essential singularity

✗ 4. z = 0 is a removable singularity

Q.23 Let f(x) be a continuous function defined for all $x > 0$ that satisfy f(x/y) = f(x) – f(y) for all x, y and f(e) =1. Then:

Ans ✗ 1. f(x) is bounded

✔ 2. f(x) = logx

✗ 3. $x\mathrm{f}(x) \to 1$ as $x \to 0$

✗ 4. $\mathrm{f}\left(\dfrac{1}{x}\right) \to 0$ as $x \to 0$

Q.24 If from each of the three boxes containing 3 red and 1 green;
2 red and 2 green; 1 red and 3 green balls, one ball is drawn at random, then the probability that 2 red and 1 green ball
will be drawn, is given by:

Ans ✗ 1. 1/32

✗ 2. 1/4

✗ 3. 3/16

✔ 4. 13/32

Q.25 The coefficient of x^{2009} in the expansion of $(1 - x)^{2008} (1 + x + x^2)^{2007}$ is given by:

Ans ✗ 1. 3

✔ 2. 0

✗ 3. −1

✗ 4. 1

Q.26 If $\sin\alpha + \sin\beta + \sin\gamma = 0$ and $\cos\alpha + \cos\beta + \cos\gamma = 0$, then the value of $\cos(\alpha - \beta) + \cos(\beta - \gamma) + \cos(\gamma - \alpha)$ is:

Ans
- ✗ 1. $-1/2$
- ✔ 2. $-3/2$
- ✗ 3. 0
- ✗ 4. -1

Q.27 The angle between the planes $2x + y + z = 7$ and $x - y + 2z = 9$ is:

Ans
- ✔ 1. 60°
- ✗ 2. 120°
- ✗ 3. 90°
- ✗ 4. 30°

Q.28 The number of solutions of $z^3 + \bar{z} = 0$ is:

Ans
- ✗ 1. 3
- ✗ 2. 4
- ✗ 3. 2
- ✔ 4. 5

Q.29 If $I = \int \ln(x^2 + x)\, dx = x \ln x + (x + 1) = K$, then the value of K is equal to:

Ans
- ✔ 1. $C - 2x$
- ✗ 2. $2x - \ln(x+1) + C$
- ✗ 3. $2x + \ln(x+1) + C$
- ✗ 4. constant

Q.30 The standard deviation of 8 observations 4.8, 4.2, 5.1, 3.8, 4.4, 4.7, 4.1 and 4.5 is:

Ans
- ✔ 1. 0.39
- ✗ 2. 0.41
- ✗ 3. 0.37
- ✗ 4. 0.32

Q.31 A person walking along a straight road observes that at two points 1 km apart, the angle of elevation of a pole in front of the person is 30° and 75°. The height of the pole is:

Ans

✗ 1. $250(\sqrt{2}+1)$ m

✔ 2. $250(\sqrt{3}+1)$ m

✗ 3. $250(\sqrt{3}-1)$ m

✗ 4. $250(\sqrt{2}-1)$ m

Q.32 The sum of the 24 terms of the series $\sqrt{2}+\sqrt{8}+\sqrt{18}+\sqrt{32}+\cdots$ is:

Ans

✗ 1. $100\sqrt{2}$

✔ 2. $300\sqrt{2}$

✗ 3. $200\sqrt{2}$

✗ 4. $500\sqrt{2}$

Q.33 The diagonal of a rectangular field is 60 m more than the shorter side. If the longer side 30 m more than the shorter side, then the length of longer and shorter sides are:

Ans

✔ 1. 120 m, 90 m

✗ 2. 90 m, 60 m

✗ 3. 150 m, 120 m

✗ 4. 105 m, 75 m

Q.34 If $A = \begin{pmatrix} 0 & -i \\ i & 0 \end{pmatrix}$ and $B = \begin{pmatrix} 1 & 0 \\ 0 & -1 \end{pmatrix}$ are matrices, then $AB + BA$ is:

Ans

✗ 1. a diagonal matrix

✗ 2. an invertible matrix

✗ 3. a unit matrix

✔ 4. a null matrix

Q.35 Two consecutive positive integers, the sum of whose square is 365, are:

Ans

✗ 1. 14, 15

✔ 2. 13, 14

✗ 3. 12, 13

✗ 4. 11, 12

Q.36 Suppose a random variable X follows a Binomial distribution with parameters n = 6 and p. If 9P(X = 4) = P(x = 2),
then the value of p is:

Ans   ✗ 1. $1/3$

     ✗ 2. $1/2$

     ✗ 3. 1

     ✔ 4. $1/4$

Q.37 The least common multiple of 119 and 272 is:

Ans   ✗ 1. 102

     ✗ 2. 119

     ✗ 3. 272

     ✔ 4. 1904

Q.38 For what values of k, the equations $x + y + z = 1$, $2x + y + z = k$, $4x + y + 10z = k^2$ have a solution?

Ans   ✗ 1. $3, 4$

     ✔ 2. $1, 2$

     ✗ 3. $0, 3$

     ✗ 4. $-1, 3$

Q.39 The logarithm of $\frac{1}{256}$ to the base $2\sqrt{2}$ is:

Ans   ✗ 1. $\frac{8}{3}$

     ✔ 2. $\frac{-16}{3}$

     ✗ 3. $\frac{-14}{3}$

     ✗ 4. $\frac{-8}{3}$

Q.40 If $A = \begin{pmatrix} 1 & 0 & 2 \\ 5 & 1 & x \\ 1 & 1 & 1 \end{pmatrix}$ is a singular matrix, then the value of x is equal to:

Ans   ✗ 1. -11

✗ 2. 11

✔ 3. 9

✗ 4. −9

Q.41 Let A = {a, b, c, d} and B = {1, 2, 3, 4, 5, 6}. Then the number of one-to-one functions from A to B is:

Ans ✔ 1. 360

✗ 2. 120

✗ 3. 24

✗ 4. 180

Q.42

The singular values of a matrix $A = \begin{bmatrix} 1 & 1 \\ 0 & 1 \\ 1 & 0 \end{bmatrix}$ are :

Ans ✔ 1. $1, \sqrt{3}$

✗ 2. $\sqrt{2}, 3$

✗ 3. $\sqrt{2}, 3\sqrt{2}$

✗ 4. $1, \sqrt{2}$

Q.43 The equation of a plane passing through the point $(1, -1, 2)$ and parallel to the plane $3x + 4y - 5z = 0$ is:

Ans ✗ 1. $3x + 4y - 5z + 1 = 0$

✔ 2. $3x + 4y - 5z + 11 = 0$

✗ 3. $3x + 4y - 5z - 1 = 0$

✗ 4. $3x + 4y - 5z - 11 = 0$

Q.44 The mean deviation from the mean of the 2n observations $a, a + d, a + 2d, ..., a + 2nd$ is:

Ans ✔ 1. $\dfrac{n(n+1)|d|}{2n+1}$

✗ 2. $\dfrac{n(n+1)d^2}{2}$

✗ 3. $a + \dfrac{n(n+1)d^2}{2}$

✗ 4. $\dfrac{n(n+1)d^2}{3}$

Q.45 The distance between two parallel lines $5x - 12y + 2 = 0$ and $5x - 12y - 3 = 0$ is given by:

Ans ✗ 1. $1/17$

✔ 2. $5/13$

✗ 3. $1/13$

✗ 4. $5/14$

Q.46 If a, b, c are in A.P. as well as in G.P., then:

Ans ✗ 1. $a = b \neq c$

✗ 2. $a \neq b \neq c$

✗ 3. $a \neq b = c$

✔ 4. $a = b = c$

Q.47 If gcd(a, b) =1, then for any c,:

Ans ✗ 1. gcd(ac, b) = c gcd(a, b)

✗ 2. gcd(ac, b) = gcd(a, b/c)

✗ 3. gcd(ac, b) = gcd(a, c)

✔ 4. gcd(ac, b) = gcd(c, b)

Q.48 $\lim\limits_{x \to 0} \dfrac{\sin(\pi \cos^2 x)}{x^2}$ equals :

Ans ✗ 1. 1

✔ 2. π

✗ 3. $\dfrac{\pi}{2}$

✗ 4. $-\pi$

Q.49 A letter is taken at random from the letters of the word "STATISTICS" and another letter is taken from the letters of the word "ASSISTANT". The probability that they are the same letter is:

Ans ✔ 1. 19/90

✗ 2. 1/15

✗ 3. 1/45

✗ 4. 1/10

Q.50 The discriminant of the equation $x^2 + \frac{x}{\sqrt{2}} + 1 = 0$ is:

Ans ✖ 1. 7

✖ 2. -5

✔ 3. -7

✖ 4. 4

Q.51 If a, b, c are nonnegative real numbers, then the minimum value of $\frac{a}{b+c} + \frac{b}{c+a} + \frac{c}{a+b}$ is:

Ans ✖ 1. 2

✖ 2. 5 / 2

✔ 3. 3 / 2

✖ 4. 1

Q.52 Let a, b, c > 0 and abc = 1. Then the least value of $\frac{1}{a^3(b+c)} + \frac{1}{b^3(c+a)} + \frac{1}{c^3(a+b)}$ is given by:

Ans ✔ 1. 1.5

✖ 2. 1

✖ 3. 0.5

✖ 4. 2

Q.53 The largest integer n for which 35! is divisible by 3^n, is given by:

Ans ✖ 1. 11

✔ 2. 15

✖ 3. 3

✖ 4. 1

Q.54 In a group of 70 persons, 37 like coffee, 52 like tea and each person likes at least one of the two drinks. How many like coffee but NOT tea?

Ans ✔ 1. 18

✖ 2. 17

✖ 3. 13

✖ 4. 16

Q.55 The variance of the first 20 natural numbers is:

Ans   ✔ 1. 133/4

     ✘ 2. 131/4

     ✘ 3. 369/4

     ✘ 4. 133/2

Q.56 If $z \neq 0$ and $2 + \cos\theta + i\sin\theta = 3/z$, then the value of $2(z + \bar{z}) - |z|^2$ equals:

Ans   ✔ 1. 3

     ✘ 2. 2

     ✘ 3. 1

     ✘ 4. 4

Q.57 The incentre of a triangle with vertices $(0, 0)$, $(1, \sqrt{3})$ and $(2, 0)$ is:

Ans   ✘ 1. $\left(\frac{2}{3}, \frac{1}{\sqrt{3}}\right)$

     ✔ 2. $\left(1, \frac{1}{\sqrt{3}}\right)$

     ✘ 3. $\left(1, \frac{\sqrt{3}}{2}\right)$

     ✘ 4. $\left(\frac{2}{3}, \frac{\sqrt{3}}{2}\right)$

Q.58 The equation of a sphere on the line joining the points $(1, 5, 6)$ and $(-2, 1, 1)$ as diameter is:

Ans   ✘ 1. $x^2 + y^2 + z^2 + 2x - 4y - 7z - 9 = 0$

     ✘ 2. $x^2 + y^2 + z^2 - x + 6y + 7z - 9 = 0$

     ✔ 3. $x^2 + y^2 + z^2 + x - 6y - 7z + 9 = 0$

     ✘ 4. $x^2 + y^2 + z^2 + 6x - y - 4z + 5 = 0$

Q.59

$$\lim_{x \to 0} \left(\sqrt{x + \sqrt{x + \sqrt{x}}} - \sqrt{x} \right) \text{ is equal to :}$$

Ans
  ✔ 1. 0.5

  ✘ 2. 2

  ✘ 3. $\log_e(2)$

  ✘ 4. 0

Question ID : **7193992889**
Status : **Answered**
Chosen Option : **3**

Q.60 The mean of 5 items of an observation is 4 and the variance is 5.2. If three of the items are 1, 2 and 6, then the other two items are:

Ans
  ✘ 1. $3, 8$

  ✔ 2. $4, 7$

  ✘ 3. $5, 6$

  ✘ 4. $9, 2$

Question ID : **7193992902**
Status : **Answered**
Chosen Option : **3**

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