Application Sequence Number	
Participant Id	
Participant Name	
Test Center Name	Nobel Technology and Solutions
Test Date	14/07/2025
Test Time	9:00 AM - 11:00 AM
Subject	Junior Executive (Air Traffic Control)

Section : **Part A General Knowledge**

Q.1

Which Article of the Indian Constitution deals with the amendment procedure of the Constitution of India?

Ans

✔ 1. Article 368

✘ 2. Article 21

✘ 3. Article 356

✘ 4. Article 370

Question ID : **44100939387**
Option 1 ID : **441009157072**
Option 2 ID : **441009157074**
Option 3 ID : **441009157071**
Option 4 ID : **441009157073**
Status : **Answered**
Chosen Option : **2**

Q.2 In whom is the executive power of the Union vested as per the Indian Constitution?

Ans
✗ 1. Prime Minister

✗ 2. Chief Justice of India

✓ 3. President of India

✗ 4. Speaker of the Lok Sabha

Question ID :	**44100939396**
Option 1 ID :	**441009157107**
Option 2 ID :	**441009157110**
Option 3 ID :	**441009157108**
Option 4 ID :	**441009157109**
Status :	**Answered**
Chosen Option :	**4**

Q.3 Which of the following rivers is a tributary of the Ganga?

Ans
✓ 1. Yamuna

✗ 2. Godavari

✗ 3. Kaveri

✗ 4. Krishna

Question ID :	**44100947424**
Option 1 ID :	**441009188793**
Option 2 ID :	**441009188792**
Option 3 ID :	**441009188791**
Option 4 ID :	**441009188790**
Status :	**Answered**
Chosen Option :	**2**

Q.4 Who was honoured with Lifetime Achievement Award for Hospitality and Education in March 2025 at the Vibrant Bharat Global Summit 2025?

Ans
✓ 1. Dr. Suborno Bose

✗ 2. Neena Gupta

✗ 3. Manasi Parekh

✗ 4. Sithara Krishnakumar

Question ID :	**44100940031**
Option 1 ID :	**441009159654**
Option 2 ID :	**441009159653**
Option 3 ID :	**441009159655**
Option 4 ID :	441009159656
Status :	**Answered**
Chosen Option :	**2**

Q.5 What is the approximate east-to-west extent of the northern plains of India?

Ans ✔ 1. 3200 km

✘ 2. 2200 km

✘ 3. 4200 km

✘ 4. 1500 km

Question ID :	**44100946467**
Option 1 ID :	**441009185026**
Option 2 ID :	**441009185025**
Option 3 ID :	**441009185024**
Option 4 ID :	**441009185023**
Status :	**Answered**
Chosen Option :	**2**

Q.6 The Khilafat Movement, (1919-1920) was a movement of Indian Muslims, led by _.

Ans ✘ 1. Maulana Abul Kalam Azad and Lala Lajpat Rai

✘ 2. Muhammad Ali and Sardar Vallabhbhai Patel

✘ 3. Jawahar Lal Nehru and Shaukat Ali

✔ 4. Maulana Mohammed Ali and Maulana Shaukat Ali

Question ID :	**44100939933**
Option 1 ID :	**441009159264**
Option 2 ID :	**441009159263**
Option 3 ID :	**441009159262**
Option 4 ID :	**441009159261**
Status :	**Answered**
Chosen Option :	**2**

Q.7 Why was Caitlin Sandra Neil, a 19-year-old Indian-American from Chennai, in the news in December 2024?

Ans ✘ 1. For getting nominated to parliament of USA

✘ 2. For winning Oscar award

✔ 3. For winning Miss India USA 2024

✘ 4. For winning Kalinga prize

Question ID :	**44100962151**
Option 1 ID :	**441009247640**
Option 2 ID :	**441009247641**
Option 3 ID :	**441009247639**
Option 4 ID :	**441009247638**
Status :	**Answered**
Chosen Option :	**3**

Q.8 Which of the following is identified as a major reason for the decline in the growth rate of agriculture post-1991?

Ans
✗ 1. Higher agricultural productivity

✓ 2. Decline in public investment in the agriculture sector

✗ 3. Increase in agricultural subsidies

✗ 4. Growth of the service sector

Question ID : **44100943764**
Option 1 ID : **441009174505**
Option 2 ID : **441009174503**
Option 3 ID : **441009174504**
Option 4 ID : **441009174506**
Status : **Answered**
Chosen Option : **2**

Q.9 Shyama Shastri is considered the greatest composers of which kind of music in India?

Ans
✗ 1. Raga

✓ 2. Carnatic

✗ 3. Thumri

✗ 4. Folk

Question ID : **44100946730**
Option 1 ID : **441009186063**
Option 2 ID : **441009186064**
Option 3 ID : **441009186061**
Option 4 ID : **441009186062**
Status : **Answered**
Chosen Option : **3**

Q.10 Who was honoured with the Pravasi Bharatiya Samman Award in January 2025 for contributions to Medical Science?

Ans
✗ 1. Dr. Shobit Kumar

✗ 2. Dr. Ramendra Kumar

✗ 3. Dr. Rohit Kumar

✓ 4. Dr. Prem Kumar

Question ID : **44100940114**
Option 1 ID : **441009159983**
Option 2 ID : **441009159984**
Option 3 ID : **441009159982**
Option 4 ID : **441009159981**
Status : **Answered**
Chosen Option : **2**

Section : **Part A General Intelligence**

Q.1 In the following triad, each group of letters is related to the subsequent one following a certain logic. Select from the given options, the one which follows the same logic.

FROM-ROFM-OFRM
DUST-USDT-SDUT

Ans ✗ 1. TOES-TSOE-OETS

✗ 2. JUMP-PJUM-MPJO

✓ 3. HAIR-AIHR-IHAR

✗ 4. BITE-ITEB-TEBI

Question ID : **44100939817**
Option 1 ID : **441009158797**
Option 2 ID : **441009158800**
Option 3 ID : **441009158799**
Option 4 ID : **441009158798**
Status : **Answered**
Chosen Option : **3**

Q.2 In a certain code language, 'LOUNGE' is coded as '80' and 'PARCEL' is coded as '61'. What is the code for 'ZEALOT' in the given code language?

Ans ✗ 1. 83

✗ 2. 86

✓ 3. 85

✗ 4. 79

Question ID : **44100939034**
Option 1 ID : **441009155675**
Option 2 ID : **441009155677**
Option 3 ID : **441009155676**
Option 4 ID : **441009155674**
Status : **Answered**
Chosen Option : **3**

Q.3 Based on the English alphabetical order, three of the following four letter-clusters are alike in a certain way and thus form a group. Which letter-cluster DOES NOT belong to that group? (Note: The odd one out is not based on the number of consonants/vowels or their position in the letter-cluster.)

Ans ✗ 1. FPJ

✗ 2. BLF

✓ 3. JTM

✗ 4. MWQ

Question ID : **44100939794**
Option 1 ID : **441009158710**
Option 2 ID : **441009158709**
Option 3 ID : **441009158711**
Option 4 ID : **441009158712**
Status : **Answered**
Chosen Option : **3**

Q.4 What will come in the place of the question mark (?) in the following equation, if '+' and '−' are interchanged, and '×' and '÷' are interchanged?

47 ÷ 44 × 2,068 + 221 − 223 = ?

Ans ✗ 1. −1

✓ 2. 3

✗ 3. 1

✗ 4. 2

Question ID : **44100940273**
Option 1 ID : **441009160608**
Option 2 ID : **441009160611**
Option 3 ID : **441009160609**
Option 4 ID : **441009160610**
Status : **Answered**
Chosen Option : **3**

Q.5 Refer to the following number series and answer the question that follows. Counting to be done from left to right only. All numbers are single-digit numbers. (Note: 1 is a perfect square.)

(Left) 1 4 2 3 9 4 8 1 5 7 9 7 2 5 1 3 4 6 7 8 2 9 5 6 3 6 8 (Right)

How many such perfect squares are there, each of which is immediately preceded by an even digit and immediately followed by an odd digit?

Ans ✗ 1. Three

✓ 2. Two

✗ 3. One

✗ 4. None

Question ID : **44100938978**
Option 1 ID : **441009155462**
Option 2 ID : **441009155461**
Option 3 ID : **441009155460**
Option 4 ID : **441009155459**
Status : **Answered**
Chosen Option : **2**

Q.6 Refer to the following letter and symbol series and answer the question that follows. Counting to be done from left to right only.

(LEFT) L # ? M ! / + O K @ N & A % E * $ J = P { (RIGHT)

How many such symbols are there that are immediately preceded by a letter and immediately followed by another symbol?

Ans

✗ 1. One

✗ 2. None

✔ 3. Three

✗ 4. Two

Question ID :	**44100938960**
Option 1 ID :	**441009155388**
Option 2 ID :	**441009155387**
Option 3 ID :	**441009155390**
Option 4 ID :	**441009155389**
Status :	**Answered**
Chosen Option :	**3**

Q.7 In a certain code language,

'A + B' means 'A is the brother of B',
'A – B' means 'A is the sister of B',
'A / B' means 'A is the husband of B',
'A ! B' means 'A is the mother of B',
'A × B' means 'A is the wife of B',
'A * B' means A is the father of B.

How is O related to P if 'S × T * O – P ! V' ?

Ans

✔ 1. Sister

✗ 2. Daughter

✗ 3. Mother's mother

✗ 4. Mother

Question ID :	**44100939757**
Option 1 ID :	**441009158559**
Option 2 ID :	**441009158558**
Option 3 ID :	**441009158560**
Option 4 ID :	**441009158557**
Status :	**Answered**
Chosen Option :	**1**

Q.8 Refer to the following letter series and answer the question that follows. Counting to be done from left to right only.

(Left) S I N G L E R O F I H T P Q D U B W N M J A K E V G P (Right)

How many such consonants are there, each of which is immediately preceded by a vowel and also immediately followed by a vowel?

Ans
   ✗ 1. Two

   ✔ 2. Three

   ✗ 3. Four

   ✗ 4. One

Question ID : **44100939517**
Option 1 ID : **441009157593**
Option 2 ID : **441009157592**
Option 3 ID : **441009157591**
Option 4 ID : **441009157594**
Status : **Answered**
Chosen Option : **2**

Q.9 Based on the English alphabetical order, three of the following four letter-cluster pairs are alike in a certain way and thus form a group. Which letter-cluster pair DOES NOT belong to that group? (Note: The odd one out is not based on the number of consonants/vowels or their position in the letter-cluster.)

Ans
   ✔ 1. KQ-WX

   ✗ 2. JP-TX

   ✗ 3. FK-PS

   ✗ 4. BG-LO

Question ID : **44100939776**
Option 1 ID : **441009158636**
Option 2 ID : **441009158635**
Option 3 ID : **441009158634**
Option 4 ID : **441009158633**
Status : **Answered**
Chosen Option : **1**

Q.10 Which of the following letter-number clusters will replace the question mark (?) in the given series to make it logically complete?

AFH10 DJK15 GNN20 JRQ25 ?

Ans ✔ 1. MVT30

✘ 2. LUS35

✘ 3. IQP30

✘ 4. KSR30

Q.11 Six students, Tejas, Rashmi, Pragya, Amit, Shiva and Vijay, are sitting in a straight line, facing north. Tejas sits second to the left of Vijay. Only one student is between Vijay and Amit. Only two are to the left of Pragya. Rashmi is not an immediate neighbour of Tejas.

Who sits second to the left of Pragya?

Ans ✘ 1. Vijay

✘ 2. Amit

✘ 3. Rashmi

✔ 4. Shiva

Q.12 Seven boxes A, B, C, D, E, F and G are kept one over the other but not necessarily in the same order. C is kept immediately below E and immediately above A. B is kept immediately below A and immediately above D. F is kept immediately below D and immediately above G. How many boxes are kept between A and G?

Ans ✘ 1. One

✔ 2. Three

✘ 3. Four

✘ 4. Two

Q. 13 In a certain code language, 'heaven on earth' is coded as 'mo bk fd' and 'earth is home' is coded as 'fd zo ko'. How is 'earth' coded in the given language?

Ans ✗ 1. zo

✗ 2. bk

✗ 3. mo

✓ 4. fd

Question ID : **44100938949**
Option 1 ID : **441009155344**
Option 2 ID : **441009155345**
Option 3 ID : **441009155346**
Option 4 ID : **441009155343**
Status : **Answered**
Chosen Option : **4**

Q. 14 Which of the following letter-number clusters will replace the question mark (?) in the given series to make it logically complete?

BTE9 DQI12 FNM15 HKQ18 ?

Ans ✓ 1. JHU21

✗ 2. KIV21

✗ 3. IGW19

✗ 4. LFZ21

Question ID : **44100938989**
Option 1 ID : **441009155506**
Option 2 ID : **441009155503**
Option 3 ID : **441009155504**
Option 4 ID : **441009155505**
Status : **Answered**
Chosen Option : **1**

Q. 15 PARENTS is related to TEVIRXW in a certain way based on the English alphabetical order. In the same way, ACHIEVE is related to EGLMIZI. To which of the given options is PROUDLY related, following the same logic?

Ans ✗ 1. TSVYHRC

✓ 2. TVSYHPC

✗ 3. TWSZIQC

✗ 4. TVTZIPC

Question ID : **44100939578**
Option 1 ID : **441009157837**
Option 2 ID : **441009157838**
Option 3 ID : **441009157836**
Option 4 ID : **441009157835**
Status : **Answered**
Chosen Option : **2**

Q.1 In a circular race of 3700 m, Raju and Shiv start from the same point at the same time, running at speeds of 72 km/hr and 108 km/hr, respectively. When will they meet again for the first time on the track if they are running in the same direction?

Ans
✗ 1. 380 seconds

✗ 2. 360 seconds

✗ 3. 350 seconds

✔ 4. 370 seconds

Question ID : **44100955044**
Option 1 ID : **441009219143**
Option 2 ID : **441009219141**
Option 3 ID : **441009219140**
Option 4 ID : **441009219142**
Status : **Answered**
Chosen Option : **4**

Q.2 The ratio of the costs of orange juice and apple juice is 5 : 6 and the ratio of their quantities consumed by a family is 6 : 7. Find the ratio of the expenditures on orange juice and apple juice.

Ans
✗ 1. 3 : 5

✗ 2. 5 : 6

✔ 3. 5 : 7

✗ 4. 6 : 7

Question ID : **44100956835**
Option 1 ID : **441009226169**
Option 2 ID : **441009226170**
Option 3 ID : **441009226171**
Option 4 ID : **441009226172**
Status : **Answered**
Chosen Option : **3**

Q.3 What is the value of $3^3 \times 125 \div (11 - 6) - 1 - 20\%$ of $25 + 4 + 17 - 1 \times 33$?

Ans
✗ 1. 402

✗ 2. 311

✗ 3. 578

✔ 4. 657

Question ID : **44100951607**
Option 1 ID : **441009205581**
Option 2 ID : **441009205580**
Option 3 ID : 441009205582
Option 4 ID : **441009205583**
Status : **Answered**
Chosen Option : **4**

Q.4 What is the total area (in m²) of the four walls of a room if the length, width, and height of the room are 50 m, 30 m, and 60 m, respectively?

Ans ✗ 1. 9200

✗ 2. 9800

✗ 3. 9400

✔ 4. 9600

Question ID : **44100953265**
Option 1 ID : **441009212120**
Option 2 ID : **441009212123**
Option 3 ID : **441009212121**
Option 4 ID : **441009212122**
Status : **Answered**
Chosen Option : **4**

Q.5 An athlete crosses 4500 m distance in 15 minutes. What is his speed in km/hr?

Ans ✗ 1. 22

✔ 2. 18

✗ 3. 20

✗ 4. 16

Question ID : **44100955030**
Option 1 ID : **441009219087**
Option 2 ID : **441009219085**
Option 3 ID : **441009219086**
Option 4 ID : **441009219084**
Status : **Answered**
Chosen Option : **2**

Q.6 Aman needs to save ₹5,00,000 for a down payment on a house, which he plans to purchase 4 years from now. If his investment grows at an annual compound interest rate of 5%, what is the present value of the amount he needs to invest? (Ignore the decimal part in your answer.)

Ans ✗ 1. ₹4,45,102

✔ 2. ₹4,11,351

✗ 3. ₹4,31,105

✗ 4. ₹4,22,305

Question ID : **44100951510**
Option 1 ID : **441009205188**
Option 2 ID : **441009205191**
Option 3 ID : **441009205189**
Option 4 ID : **441009205190**
Status : **Answered**
Chosen Option : **2**

Q.7 Rashmi deposited ₹8,000 in a bank that promised 12% simple interest per annum. If Rashmi kept the money with the bank for 9 years, how much simple interest will she earn?

Ans
✖ 1. ₹8,740

✖ 2. ₹8,940

✖ 3. ₹8,840

✔ 4. ₹8,640

Question ID :	**44100953441**
Option 1 ID :	**441009212755**
Option 2 ID :	**441009212757**
Option 3 ID :	**441009212756**
Option 4 ID :	**441009212754**
Status :	**Answered**
Chosen Option :	**4**

Q.8 A number is increased by 25% and then it is decreased by 25%. What is the percentage change in the final value of the number?

Ans
✔ 1. 6.25% decrease

✖ 2. 7.52% increase

✖ 3. 8.45% decrease

✖ 4. No change

Question ID :	**44100951673**
Option 1 ID :	**441009205847**
Option 2 ID :	**441009205846**
Option 3 ID :	**441009205845**
Option 4 ID :	**441009205844**
Status :	**Answered**
Chosen Option :	**1**

Q.9 A shopkeeper sells an article for ₹1,269 at a 10% loss. What should have been his selling price to earn a 10% profit?

Ans
✖ 1. ₹1,413

✖ 2. ₹1,501

✔ 3. ₹1,551

✖ 4. ₹1,487

Question ID :	**44100951694**
Option 1 ID :	**441009205931**
Option 2 ID :	**441009205929**
Option 3 ID :	**441009205928**
Option 4 ID :	**441009205930**
Status :	**Answered**
Chosen Option :	**3**

Q.10 Anil and Shawan together have ₹5,250. On taking ₹750 from Anil, Anil will have same amount as what Shawan had earlier. Find the ratio of amounts with Anil and Shawan initially.

Ans
✗ 1. 5 : 3

✗ 2. 3 : 5

✗ 3. 5 : 7

✓ 4. 4 : 3

Question ID : **44100956842**
Option 1 ID : **441009226198**
Option 2 ID : **441009226199**
Option 3 ID : **441009226200**
Option 4 ID : **441009226197**
Status : **Answered**
Chosen Option : **4**

Q.11 A paint manufacturer combines three types of paints priced at ₹50/litre, ₹70/litre and ₹100/litre and sells the mixture at ₹100/litre, earning a profit of 25%. If the mixture contains 7 litres of the third variant, which of the following CANNOT be the amount of the first variant included in the mixture?

Ans
✗ 1. 4 litres

✓ 2. 5 litres

✗ 3. 2 litres

✗ 4. 3 litres

Question ID : **44100949452**
Option 1 ID : **441009197086**
Option 2 ID : **441009197087**
Option 3 ID : **441009197084**
Option 4 ID : **441009197085**
Status : **Answered**
Chosen Option : **1**

Q.12 A cistern is normally filled in 40 minutes by an inlet pipe. Due to a leak, it takes 10 minutes longer to fill the cistern completely. How long would the leak alone take to empty the full cistern?

Ans
✗ 1. 150 min

✓ 2. 200 min

✗ 3. 100 min

✗ 4. 250 min

Question ID : **44100952110**
Option 1 ID : **441009207561**
Option 2 ID : **441009207562**
Option 3 ID : **441009207560**
Option 4 ID : **441009207563**
Status : **Answered**
Chosen Option : **2**

Q.13 What is the value of $0.\overline{36} + 0.11 - 0.121$? (Give your answer correct to 2 decimal places.)

Ans
✗ 1. 0.23

✗ 2. 0.18

✓ 3. 0.35

✗ 4. 0.51

Question ID : **44100951586**
Option 1 ID : **441009205494**
Option 2 ID : **441009205495**
Option 3 ID : **441009205493**
Option 4 ID : **441009205492**
Status : **Answered**
Chosen Option : **3**

Q.14 Find the maximum length of a rod that can be placed in a room of dimensions 40 m $\times$ 40 m $\times$ 20 m?

Ans
✗ 1. 45 m

✓ 2. 60 m

✗ 3. 55 m

✗ 4. 50 m

Question ID : **44100953276**
Option 1 ID : **441009212160**
Option 2 ID : **441009212163**
Option 3 ID : **441009212162**
Option 4 ID : **441009212161**
Status : **Answered**
Chosen Option : **2**

Q.15 A retailer sells a microwave oven at a 10% discount on the marked price and still makes a 25% profit on the cost price. What is the ratio of the marked price to the cost price of the microwave?

Ans
✗ 1. 32 : 23

✓ 2. 25 : 18

✗ 3. 46 : 27

✗ 4. 38 : 15

Question ID : **44100951743**
Option 1 ID : **441009206125**
Option 2 ID : **441009206126**
Option 3 ID : **441009206124**
Option 4 ID : **441009206127**
Status : **Answered**
Chosen Option : **2**

Section : **Part A General English**

Q.1 Select the most appropriate meaning of the given idiom.

Bite off more than you can chew

Ans ✗ 1. To eat too quickly

✗ 2. To take things slowly

✗ 3. To refuse to help others

✓ 4. To take on more responsibility than you can handle

Question ID : **44100934391**
Option 1 ID : **441009136983**
Option 2 ID : **441009136985**
Option 3 ID : **441009136984**
Option 4 ID : **441009136982**
Status : **Answered**
Chosen Option : **4**

Q.2 Select the most appropriate meaning of the given word.

Implacable

Ans ✓ 1. Unable to be appeased

✗ 2. Easily calmed

✗ 3. Peaceful

✗ 4. Optimistic

Question ID : **44100965382**
Option 1 ID : **441009260531**
Option 2 ID : **441009260530**
Option 3 ID : **441009260529**
Option 4 ID : **441009260532**
Status : **Answered**
Chosen Option : **1**

Q.3 Sentences of a paragraph are given below in jumbled order. Arrange the sentences in the correct order to form a meaningful and coherent paragraph.

A. The rapid advancement of artificial intelligence (AI) has sparked intense debates about its potential to disrupt job markets globally.
B. Despite these concerns, many experts argue that AI could enhance productivity and create new opportunities in various sectors.
C. AI, if properly regulated, could play a pivotal role in shaping industries like healthcare, and manufacturing.
D. As the technology continues to evolve, it is crucial to consider its ethical implications and how it may impact society in both positive and negative ways.

Ans ✔ 1. ADBC

✘ 2. ABCD

✘ 3. BCAD

✘ 4. CABD

Question ID :	**44100957353**
Option 1 ID :	**441009228242**
Option 2 ID :	441009228239
Option 3 ID :	**441009228240**
Option 4 ID :	**441009228241**
Status :	**Answered**
Chosen Option :	**2**

Q.4 The following sentence has been split into four segments. Identify the segment that contains a grammatical error.

A. She do not understand
B. the concept,
C. so the teacher explained
D. it again.

Ans ✔ 1. A

✘ 2. D

✘ 3. C

✘ 4. B

Question ID :	**44100934513**
Option 1 ID :	**441009137466**
Option 2 ID :	**441009137469**
Option 3 ID :	**441009137468**
Option 4 ID :	**441009137467**
Status :	**Answered**
Chosen Option :	**1**

Q.5 Select the most appropriate preposition to fill in the blank.

I am going to science fair that is being held _____ our town.

Ans
✖ 1. at

✖ 2. on

✔ 3. in

✖ 4. by

Question ID :	**44100951858**
Option 1 ID :	**441009206572**
Option 2 ID :	**441009206574**
Option 3 ID :	**441009206573**
Option 4 ID :	**441009206575**
Status :	**Answered**
Chosen Option :	**3**

Q.6 Select the most appropriate ANTONYM of the given word.

Obsequious

Ans
✖ 1. Evasive

✖ 2. Proud

✔ 3. Assertive

✖ 4. Submissive

Question ID :	**44100965329**
Option 1 ID :	**441009260336**
Option 2 ID :	**441009260333**
Option 3 ID :	**441009260335**
Option 4 ID :	**441009260334**
Status :	**Answered**
Chosen Option :	**1**

Q.7 Select the correct future tense form of the word in brackets in the given sentence.

By the time you arrive, I _____ (finish) my homework.

Ans
✔ 1. will have finished

✖ 2. will finish

✖ 3. am finishing

✖ 4. will be finishing

Question ID :	**44100964714**
Option 1 ID :	**441009257805**
Option 2 ID :	**441009257803**
Option 3 ID :	**441009257806**
Option 4 ID :	**441009257804**
Status :	**Answered**
Chosen Option :	**1**

Q.8 Select the most appropriate article to fill in the blank. If no article is needed, select 'No article required'.

It was _____ one-in-a-million opportunity, and I couldn't pass it up.

Ans

✗ 1. No article required

✗ 2. the

✗ 3. an

✔ 4. a

Question ID :	**44100964695**
Option 1 ID :	**441009257727**
Option 2 ID :	**441009257726**
Option 3 ID :	**441009257725**
Option 4 ID :	**441009257724**
Status :	**Answered**
Chosen Option :	**4**

Q.9 Select the option that can be used as a one-word substitute for the given group of words.
One who walks on ropes

Ans

✗ 1. Iconclast

✗ 2. Somniloquist

✗ 3. Noctambulist

✔ 4. Funambulist

Question ID :	**44100946593**
Option 1 ID :	**441009185525**
Option 2 ID :	**441009185523**
Option 3 ID :	**441009185524**
Option 4 ID :	**441009185526**
Status :	**Answered**
Chosen Option :	**4**

Q.10 Select the option that rectifies the incorrectly spelt word in the given sentence.

Her advise really helped me in making the right decision.

Ans

✗ 1. advije

✗ 2. adbise

✗ 3. adwise

✔ 4. advice

Question ID :	**44100965317**
Option 1 ID :	**441009260287**
Option 2 ID :	**441009260285**
Option 3 ID :	**441009260288**
Option 4 ID :	**441009260286**
Status :	**Answered**
Chosen Option :	**4**

Q.11 Select the most appropriate idiom that means the same as the given phrase.

To be in a difficult or troublesome situation

Ans ✗ 1. Bite the bullet

✗ 2. The ball is in your court

✓ 3. Between a rock and a hard place

✗ 4. A blessing in disguise

Question ID : **44100965252**
Option 1 ID : **441009260036**
Option 2 ID : **441009260035**
Option 3 ID : **441009260034**
Option 4 ID : **441009260033**
Status : **Answered**
Chosen Option : **3**

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

The weather has been _____ unpredictable this season, making it difficult to plan outdoor activities.

Ans ✓ 1. extremely

✗ 2. rarely

✗ 3. infrequently

✗ 4. occasionally

Question ID : **44100965087**
Option 1 ID : **441009259377**
Option 2 ID : **441009259380**
Option 3 ID : **441009259379**
Option 4 ID : **441009259378**
Status : **Answered**
Chosen Option : **1**

Q.13 Select the option that can be used as a one-word substitute for the given group of words.
Study of the law of the flow of the water and other liquids

Ans ✓ 1. Hydraulics

✗ 2. Consummate

✗ 3. Teetotaller

✗ 4. Quixotic

Question ID : **44100946603**
Option 1 ID : **441009185563**
Option 2 ID : **441009185565**
Option 3 ID : **441009185564**
Option 4 ID : **441009185566**
Status : **Answered**
Chosen Option : **1**

Q.
14
Sentences of a paragraph are given below in jumbled order. Arrange the sentences in the correct order to form a meaningful and coherent paragraph.

A. In modern times, environmental sustainability has become a critical issue.
B. Many industries have adopted eco-friendly practices to reduce their carbon footprint.
C. Governments and organisations are also working towards creating policies that encourage green technologies.
D. This movement aims to preserve the earth's resources for future generations.

Ans
✗ 1. ABCD

✔ 2. ACBD

✗ 3. BACD

✗ 4. DCAB

Question ID : **44100957321**
Option 1 ID : **441009228135**
Option 2 ID : **441009228137**
Option 3 ID : **441009228138**
Option 4 ID : **441009228136**
Status : **Answered**
Chosen Option : **1**

Q.
15
Select the option that rectifies the incorrectly spelt word in the given sentence.

He gave an embaressing presentation during the meeting.

Ans
✗ 1. embarassing

✗ 2. embarasing

✗ 3. embarrasment

✔ 4. embarrassing

Question ID : **44100965304**
Option 1 ID : **441009260237**
Option 2 ID : **441009260238**
Option 3 ID : 441009260239
Option 4 ID : **441009260240**
Status : **Answered**
Chosen Option : **1**

Comprehension:

Read the given passage and answer the questions that follow.

Attending school then was sheer joy. I loved being a student. I loved learning. School was the place of ecstasy — pleasure and danger. To be changed by ideas was pure pleasure. But to learn ideas that ran counter to values and beliefs learnt at home was to place oneself at risk, to enter the danger zone. Home was the place where I was forced to conform to someone else's image of who and what I should be. School was the place where I could forget that self and, through ideas, reinvent myself.

School changed utterly with racial integration. Gone was the messianic zeal to transform our minds and beings that had characterised teachers and their pedagogical practices in our all-black schools. Knowledge was suddenly about information only. It had no relation to how one lived, behaved. It was no longer connected to antiracist struggle. Bussed to white schools, we soon learnt that obedience, and not a zealous will to learn, was what was expected of us. Too much eagerness to learn could easily be seen as a threat to white authority.

SubQuestion No : 16

Q.16 **What can be inferred about the role of teachers in all-black schools before integration?**

Ans ✔ 1. They saw education as a means of personal and political transformation.

✘ 2. They focused strictly on academic performance.

✘ 3. They discouraged the questioning authority.

✘ 4. They were poorly trained and uninspired.

<div style="border:1px solid;">

Question ID : **44100967034**
Option 1 ID : **441009266894**
Option 2 ID : **441009266892**
Option 3 ID : **441009266893**
Option 4 ID : **441009266895**
Status : **Answered**
Chosen Option : **4**

</div>

Comprehension:

Read the given passage and answer the questions that follow.

Attending school then was sheer joy. I loved being a student. I loved learning. School was the place of ecstasy — pleasure and danger. To be changed by ideas was pure pleasure. But to learn ideas that ran counter to values and beliefs learnt at home was to place oneself at risk, to enter the danger zone. Home was the place where I was forced to conform to someone else's image of who and what I should be. School was the place where I could forget that self and, through ideas, reinvent myself.

School changed utterly with racial integration. Gone was the messianic zeal to transform our minds and beings that had characterised teachers and their pedagogical practices in our all-black schools. Knowledge was suddenly about information only. It had no relation to how one lived, behaved. It was no longer connected to antiracist struggle. Bussed to white schools, we soon learnt that obedience, and not a zealous will to learn, was what was expected of us. Too much eagerness to learn could easily be seen as a threat to white authority.

SubQuestion No : 17

Q.17 What is the central theme of the passage?

Ans ✗ 1. The differences between public and private schools

✓ 2. The impact of changing educational environments on black students

✗ 3. The role of comic books in children's education

✗ 4. The importance of racial integration in schools

Question ID : **44100967032**
Option 1 ID : **441009266887**
Option 2 ID : **441009266885**
Option 3 ID : **441009266886**
Option 4 ID : **441009266884**
Status : **Answered**
Chosen Option : **2**

Comprehension:

Read the given passage and answer the questions that follow.

Attending school then was sheer joy. I loved being a student. I loved learning. School was the place of ecstasy — pleasure and danger. To be changed by ideas was pure pleasure. But to learn ideas that ran counter to values and beliefs learnt at home was to place oneself at risk, to enter the danger zone. Home was the place where I was forced to conform to someone else's image of who and what I should be. School was the place where I could forget that self and, through ideas, reinvent myself.

School changed utterly with racial integration. Gone was the messianic zeal to transform our minds and beings that had characterised teachers and their pedagogical practices in our all-black schools. Knowledge was suddenly about information only. It had no relation to how one lived, behaved. It was no longer connected to antiracist struggle. Bussed to white schools, we soon learnt that obedience, and not a zealous will to learn, was what was expected of us. Too much eagerness to learn could easily be seen as a threat to white authority.

SubQuestion No : 18

Q In the passage, what does the word 'pedagogical' refer to?
.
1
8

A ✗ 1. A type of student behaviour
n
s

   ✗ 2. A style of writing

   ✓ 3. Teaching methods and practices

   ✗ 4. A form of political activism

<div style="text-align:right">

Question ID : **44100967033**
Option 1 ID : **441009266890**
Option 2 ID : **441009266888**
Option 3 ID : **441009266889**
Option 4 ID : **441009266891**
Status : **Answered**
Chosen Option : **3**

</div>

Comprehension:

Read the given passage and answer the questions that follow.

Attending school then was sheer joy. I loved being a student. I loved learning. School was the place of ecstasy —
pleasure and danger. To be changed by ideas was pure pleasure. But to learn ideas that ran counter to values and
beliefs learnt at home was to place oneself at risk, to enter the danger zone. Home was the place where I was
forced to conform to someone else's image of who and what I should be. School was the place where I could
forget that self and, through ideas, reinvent myself.
School changed utterly with racial integration. Gone was the messianic zeal to transform our minds and beings
that had characterised teachers and their pedagogical practices in our all-black schools. Knowledge was suddenly
about information only. It had no relation to how one lived, behaved. It was no longer connected to antiracist
struggle. Bussed to white schools, we soon learnt that obedience, and not a zealous will to learn, was what was
expected of us. Too much eagerness to learn could easily be seen as a threat to white authority.

SubQuestion No : 19

Q Why might the author describe school post-integration as less fulfilling?
.
1
9

A ✗ 1. Because the curriculum was outdated
n
s

   ✔ 2. Because learning no longer encouraged critical thought or resistance

   ✗ 3. Because the facilities were worse than in all-black schools

   ✗ 4. Because black students received less homework

Comprehension:

Read the given passage and answer the questions that follow.

Attending school then was sheer joy. I loved being a student. I loved learning. School was the place of ecstasy — pleasure and danger. To be changed by ideas was pure pleasure. But to learn ideas that ran counter to values and beliefs learnt at home was to place oneself at risk, to enter the danger zone. Home was the place where I was forced to conform to someone else's image of who and what I should be. School was the place where I could forget that self and, through ideas, reinvent myself.

School changed utterly with racial integration. Gone was the messianic zeal to transform our minds and beings that had characterised teachers and their pedagogical practices in our all-black schools. Knowledge was suddenly about information only. It had no relation to how one lived, behaved. It was no longer connected to antiracist struggle. Bussed to white schools, we soon learnt that obedience, and not a zealous will to learn, was what was expected of us. Too much eagerness to learn could easily be seen as a threat to white authority.

SubQuestion No : 20

Q. 20 **What is the synonym of 'ecstasy' as used in the passage?**

Ans
✗ 1. Boredom

✗ 2. Confusion

✔ 3. Joy

✗ 4. Sadness

Question ID : **44100967035**
Option 1 ID : **441009266899**
Option 2 ID : **441009266898**
Option 3 ID : **441009266897**
Option 4 ID : **441009266896**
Status : **Answered**
Chosen Option : **3**

Section : **Part B Discipline related**

Q. 1 **For a fixed pressure, the volume of a gas is proportional to its absolute temperature. This is known as:**

Ans
✗ 1. Boyle's law

✗ 2. Avogadro's hypothesis

✗ 3. Dalton's law

✔ 4. Charles' law

Question ID : **441009149395**
Option 1 ID : **441009593336**
Option 2 ID : **441009593338**
Option 3 ID : **441009593339**
Option 4 ID : **441009593337**
Status : **Answered**
Chosen Option : **1**

Q.2 If Bernoulli's equation is applied to a fluid flowing through a horizontal pipe of varying area of cross-section, then by using absolute pressure at one point and gauge pressure at another of the flowing fluid, what will be the final result?

Ans

✗ 1. No impact, as gauge and absolute pressures can be mixed.

✗ 2. A correct velocity prediction.

✗ 3. The same as using only absolute pressures, since gauge pressure is relative.

✓ 4. A pressure difference that includes atmospheric pressure incorrectly.

Question ID : **441009136885**
Option 1 ID : **441009543779**
Option 2 ID : **441009543777**
Option 3 ID : **441009543780**
Option 4 ID : **441009543778**
Status : **Answered**
Chosen Option : **4**

Q.3 If a light ray is incident from air on a water surface by making an angle 30° with the normal, find the angle of refraction.
(Refractive index of water with respect to air is 1.5)

Ans

✓ 1. $Sin^{-1}\left(\dfrac{1}{3}\right)$

✗ 2. $Sin^{-1}\left(\dfrac{2}{3}\right)$

✗ 3. 30^0

✗ 4. 45^0

Question ID : **441009145765**
Option 1 ID : **441009578965**
Option 2 ID : **441009578966**
Option 3 ID : **441009578963**
Option 4 ID : **441009578964**
Status : **Answered**
Chosen Option : **2**

Q.4 A reverse bias voltage of 10 V is applied across a p-n junction diode such that the current flowing through the diode in the reverse bias configuration is 2 μA. What will be the resistance of the diode in this configuration?

Ans

✓ 1. 5000 kΩ

✗ 2. 50 kΩ

✗ 3. 500 kΩ

✗ 4. 5 kΩ

Question ID : **441009109711**
Option 1 ID : **441009436574**
Option 2 ID : **441009436575**
Option 3 ID : 441009436573
Option 4 ID : **441009436576**
Status : **Answered**
Chosen Option : **1**

Q.5 A cell of emf ε and internal resistance r is being used in a closed electric circuit. If the current flowing through the cell is I and the terminal potential difference across the cell is V, then which following represents the correct relation between ε and V?

Ans
✗ 1. V = ε + Ir

✓ 2. V = ε − Ir

✗ 3. V = ε × Ir

✗ 4. V = ε/Ir

Question ID : **441009108368**
Option 1 ID : **441009431456**
Option 2 ID : **441009431455**
Option 3 ID : **441009431457**
Option 4 ID : **441009431454**
Status : **Answered**
Chosen Option : **1**

Q.6 Which of the following is a subset of the set of isosceles triangle?

Ans
✓ 1. Set of all equilateral triangles

✗ 2. Set of all scalene triangles

✗ 3. Set of all right-angled triangles

✗ 4. Set of all triangles

Question ID : **441009118654**
Option 1 ID : **441009471758**
Option 2 ID : **441009471761**
Option 3 ID : **441009471760**
Option 4 ID : **441009471759**
Status : **Answered**
Chosen Option : **3**

Q.7 Which of the following angles is same as $135°$?

Ans
✓ 1. $-225°$

✗ 2. $-45°$

✗ 3. $-135°$

✗ 4. $-315°$

Question ID : **44100998457**
Option 1 ID : **441009391940**
Option 2 ID : **441009391942**
Option 3 ID : **441009391941**
Option 4 ID : **441009391939**
Status : **Answered**
Chosen Option : **1**

Q.8 A point charge Q is placed at the centre of a spherical conducting shell of inner radius r_1 and outer radius r_2. What is the electric field (E) at a point inside the conducting shell (at a distance r where $r_1 < r < r_2$)?

Ans

✗ 1. $E = Q/4\pi\epsilon_0 r_1^2$

✗ 2. $E = Q/4\pi\epsilon_0 r_2^2$

✗ 3. $E = Q/4\pi\epsilon_0 r^2$

✓ 4. $E = 0$

Question ID : **441009130415**
Option 1 ID : **441009518049**
Option 2 ID : **441009518050**
Option 3 ID : **441009518048**
Option 4 ID : **441009518047**
Status : **Answered**
Chosen Option : **3**

Q.9 A parallel plate capacitor with air between the plates of the capacitor is C. When a dielectric of dielectric constant k is introduced between the plates of the capacitor, its capacitance is C'. Which of the following is the correct relation between C and C'?

Ans

✓ 1. $C' = kC$

✗ 2. $C' = k^2 C$

✗ 3. $C' = k/C$

✗ 4. $C' = k^2/C$

Question ID : **441009109735**
Option 1 ID : **441009436671**
Option 2 ID : **441009436669**
Option 3 ID : **441009436670**
Option 4 ID : **441009436672**
Status : **Answered**
Chosen Option : **1**

Q.10 In a single slit diffraction pattern, how does the angular width of the central maximum change with the increasing slit width?

Ans

✗ 1. It will remain same.

✗ 2. It will increase.

✗ 3. It may increase or decrease.

✓ 4. It will decrease.

Question ID : **441009145740**
Option 1 ID : **441009578859**
Option 2 ID : **441009578861**
Option 3 ID : **441009578862**
Option 4 ID : **441009578860**
Status : **Answered**
Chosen Option : **2**

Q.11 Find the equivalent resistance between the points C and F for the given circuit.
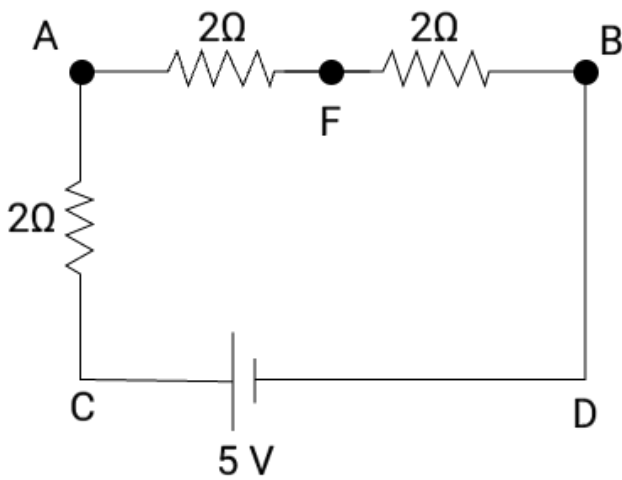
A
n
s

✗ 1. 6 Ω

✔ 2. 4 Ω

✗ 3. 1 Ω

✗ 4. 3/2 Ω

Q.12 If A is a matrix of order 3×3 such that $\det(A) = 9$, then find $\det(4A)$.

A
n
s

✗ 1. 36

✗ 2. 108

✗ 3. 9

✔ 4. 576

Q. 13 If a ray of light strikes a plane mirror at an angle of 30° with the normal, what will be the angle of reflection?

Ans ✗ 1. 90°

✗ 2. 60°

✗ 3. 0°

✓ 4. 30°

Question ID : **441009116333**
Option 1 ID : **441009462764**
Option 2 ID : **441009462766**
Option 3 ID : **441009462765**
Option 4 ID : **441009462767**
Status : **Answered**
Chosen Option : **2**

Q. 14 Compute $\int_{-1}^{1} |2x^3 - x|\, dx.$

Ans ✓ 1. $\dfrac{1}{2}$

✗ 2. $\dfrac{3}{2}$

✗ 3. 0

✗ 4. 1

Question ID : **441009159302**
Option 1 ID : **441009632089**
Option 2 ID : **441009632090**
Option 3 ID : **441009632088**
Option 4 ID : **441009632087**
Status : **Answered**
Chosen Option : **3**

Q. 15 Which of the following is the best approximated degree measure of 4 radians?

Ans ✗ 1. $231°5'27''$

✗ 2. $220°5'27''$

✓ 3. $229°5'27''$

✗ 4. $230°5'$

Question ID : **441009188417**
Option 1 ID : **441009743545**
Option 2 ID : **441009743542**
Option 3 ID : **441009743544**
Option 4 ID : **441009743543**
Status : **Answered**
Chosen Option : **1**

Q.16 Which of the following is an INCORRECT statement regarding the specific heat capacity of a substance?

Ans ✔️ 1. The specific capacity of a substance at constant volume is always equal to the specific heat capacity of the substance at constant pressure.

❌ 2. It depends on the nature of the substance.

❌ 3. The specific heat capacity is independent of the mass of the substance.

❌ 4. The S.I. unit of specific heat capacity is J kg^{-1} K^{-1}.

Question ID : **441009116315**
Option 1 ID : **441009462694**
Option 2 ID : **441009462692**
Option 3 ID : **441009462695**
Option 4 ID : **441009462693**
Status : **Answered**
Chosen Option : **1**

Q.17 Which of the following is an INCORRECT statement regarding the surface tension of a liquid?

Ans ❌ 1. Surface tension of different liquids is different.

❌ 2. The S.I. unit of surface tension is N/m.

✔️ 3. Surface tension is independent of the temperature of the liquid.

❌ 4. Surface tension is equal to the surface energy per unit area of the liquid interface.

Question ID : **441009114646**
Option 1 ID : **441009456016**
Option 2 ID : **441009456015**
Option 3 ID : **441009456014**
Option 4 ID : **441009456017**
Status : **Answered**
Chosen Option : **3**

Q.18 Given below is a typical stress-strain curve for a metal. Which point is known as fracture point?
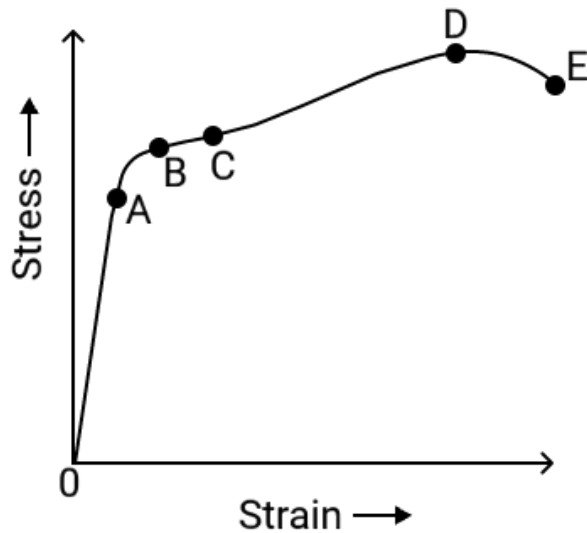
Ans
✔ 1. E

✘ 2. B

✘ 3. D

✘ 4. A

Question ID : **441009146087**
Option 1 ID : **441009580221**
Option 2 ID : **441009580219**
Option 3 ID : **441009580220**
Option 4 ID : **441009580218**
Status : **Answered**
Chosen Option : **3**

Q.19 The equations of the lines, which cut-off intercepts on the axes whose sum and product are 1 and -6 is:

Ans
✘ 1. $2x + 3y = 6, \; -3x + 2y = 6$

✘ 2. $2x + 3y = 6, \; 3x + 2y = 6$

✔ 3. $2x - 3y = 6, \; -3x + 2y = 6$

✘ 4. $2x + 3y = 0, \; 3x + 2y = 0$

Question ID : **441009143568**
Option 1 ID : **441009570282**
Option 2 ID : **441009570283**
Option 3 ID : **441009570281**
Option 4 ID : **441009570284**
Status : **Answered**
Chosen Option : **1**

Q.20 If n is the number of 4 − letter words (with or without meaning) formed by the letter word "FRACTION" without repeating letters, then n = ?

Ans
✗ 1. 280

✗ 2. 70

✗ 3. 840

✓ 4. 1680

Q.21 The shortest distance between the lines $\frac{x+1}{7} = \frac{y+1}{-6} = \frac{z+1}{1}$ and $\frac{x-3}{1} = \frac{y-5}{-2} = \frac{z-7}{1}$ is:

Ans
✗ 1. $29\sqrt{2}$

✓ 2. $2\sqrt{29}$

✗ 3. 116

✗ 4. 1

Q.22 A particle moves along the x-axis, and its position at time t is given by: $x(t) = 5t^3 - 3t^2 - 2t - 12$. What is the instantaneous velocity at t=2s?

Ans
✗ 1. 12 m/s

✗ 2. 55 m/s

✗ 3. 21 m/s

✓ 4. 46 m/s

Q. 23 According to work energy theorem, the change in _____ of a particle is equal to the work done on it by the net force.

Ans

✗ 1. potential energy

✗ 2. mechanical energy

✓ 3. kinetic energy

✗ 4. total energy

Question ID : **441009149620**
Option 1 ID : **441009594214**
Option 2 ID : **441009594217**
Option 3 ID : **441009594215**
Option 4 ID : **441009594216**
Status : **Answered**
Chosen Option : **2**

Q. 24 Two particles of the same mass are moving in two circular paths having radii in the ratio of 1:3. What will be the ratio of their respective velocities for them to experience constant centripetal force?

Ans

✗ 1. 1:3

✓ 2. 1:√3

✗ 3. 1:9

✗ 4. 3:1

Question ID : **441009110458**
Option 1 ID : **441009439404**
Option 2 ID : **441009439407**
Option 3 ID : 441009439406
Option 4 ID : **441009439405**
Status : **Answered**
Chosen Option : **1**

Q.25

Which of the following statements is NOT true?

Ans

✗ 1. If A is a matrix of order 3×3 such that $\det(A) = 2$, then $\exists$ a matrix B of order 3×3 such that $\det(B) = \dfrac{1}{2}$ and $AB = I_{3 \times 3}$.

✗ 2. If A and B are matrics of order 3×3 such that $AB = 2I_{3 \times 3}$, then $\det(A) \neq 0$ and $\det(B) \neq 0$.

✔ 3. If A and B are matrices of order 3×3 such that $AB = O$ (zero matrix), then either $A = O$ or $B = O$.

✗ 4. There exist matrices A and B of order 3×3 such that $A \neq O$, $B \neq O$ but $AB = O$.

Q.26

A parallel plate capacitor consists of two plates with a plate area of $0.25\ \text{m}^2$ and a distance between the plates of $0.002\ \text{m}$. The capacitor is placed in a vacuum, and the voltage across the plates is 15 V. The permittivity of free space is $\epsilon_0 = 8.854 \times 10^{-12}$ F/m. If the distance between the plates is reduced to half, calculate the capacitance and the energy stored in the capacitor when the same voltage is applied.

Ans

✗ 1. 4.2 nF, 5.2×10^{7} J

✗ 2. 1.5 µF, 6×10^{7} J

✗ 3. 0.2 µF, 3.4×10^{9} J

✔ 4. 2.2 nF, 2.5×10^{7} J

Q.27 A 100 W electric bulb operates continuously for 10 hours and consumes 1 kWh of energy. Based on this, which of the following statements is correct?

Ans ✗ 1. The energy consumed is equal to 36000 joules.

✗ 2. The bulb draws a current of 0.5 A from a 100 V supply for 10 hours.

✗ 3. The energy consumed can be calculated by multiplying the current and resistance of the bulb.

✓ 4. If two such bulbs are used for 5 hours each, the total energy consumption will still be 1 kWh.

Question ID : **441009130306**
Option 1 ID : **441009517616**
Option 2 ID : **441009517615**
Option 3 ID : **441009517618**
Option 4 ID : **441009517617**
Status : **Answered**
Chosen Option : **2**

Q.28 The third term of a geometric progression is 3, then the product of first five terms of

Ans ✗ 1. 81

✗ 2. 162

✓ 3. 243

✗ 4. 729

Question ID : **441009107615**
Option 1 ID : **441009428467**
Option 2 ID : **441009428469**
Option 3 ID : **441009428468**
Option 4 ID : **441009428470**
Status : **Answered**
Chosen Option : **3**

Q.29 The working of which of the following devices is based on the Second law of Thermodynamics?

Ans ✗ 1. Electric Heater

✗ 2. Television

✓ 3. Refrigerator

✗ 4. Electric Fan

Question ID : **441009116329**
Option 1 ID : **441009462751**
Option 2 ID : **441009462750**
Option 3 ID : **441009462748**
Option 4 ID : **441009462749**
Status : **Answered**
Chosen Option : **1**

Q. 30 If K = {1, 2, 3, 4, 5, 6, 7} and P$_i$ be the number of 4 elements subsets of K out of v

Ans

✓ 1. 35

✗ 2. 20

✗ 3. 30

✗ 4. 32

Question ID : **441009188332**
Option 1 ID : **441009743217**
Option 2 ID : **441009743218**
Option 3 ID : **441009743216**
Option 4 ID : **441009743219**
Status : **Answered**
Chosen Option : **4**

Q. 31 In a closed circuit, a battery of emf 10 V and internal resistance of 0.4 Ω is connected to an external resistor such that the current flowing through the circuit is 2 A. What will be the value of the external resistor?

Ans

✗ 1. 5 Ω

✓ 2. 4.6 Ω

✗ 3. 5.2 Ω

✗ 4. 9.2 Ω

Question ID : **441009108357**
Option 1 ID : **441009431413**
Option 2 ID : **441009431410**
Option 3 ID : **441009431411**
Option 4 ID : **441009431412**
Status : **Answered**
Chosen Option : **2**

Q.32 If a_n is the nth term of a GP such that $A = \sum_{k=1}^{n} a_k$, $B = \sum_{k=1}^{n} \frac{1}{a_k}$ and $C = \prod_{k=1}^{n} a_k$,

then which of the following is true?

A n s

✔ 1. $C^2 B^n = A^n$

✘ 2. $A^2 B^n = C^n$

✘ 3. $C^2 A^n = B^n$

✘ 4. $B^2 C^n = A^n$

Q.33 Suppose $A = \begin{pmatrix} a & b & c & d \\ e & f & g & h \\ i & j & k & l \\ m & n & o & p \end{pmatrix}$, where all elements of the matrix are real numbers

such that $\det(A) = 4$. Find $\det(B)$, where $B = \begin{pmatrix} i & j & k & l \\ e+2a & f+2b & g+2c & h+2d \\ 3a & 3b & 3c & 3d \\ m+e & n+f & o+g & p+h \end{pmatrix}$.

A n s

✘ 1. 4

✔ 2. −12

✘ 3. 12

✘ 4. −4

Q.34 If origin is shifted to $(-2, 1)$, then the point $(2, -3)$ becomes _____.

Ans ✗ 1. $(0, \ 2)$

✗ 2. $(-4, 4)$

✗ 3. $(0, \ -2)$

✓ 4. $(4, \ -4)$

Question ID : **441009116863**
Option 1 ID : **441009464582**
Option 2 ID : **441009464580**
Option 3 ID : **441009464581**
Option 4 ID : **441009464579**
Status : **Answered**
Chosen Option : **4**

Q.35 Power is a _____ quantity and its SI unit is ____.

Ans ✗ 1. vector; watt

✗ 2. scalar; volt

✗ 3. vector; volt

✓ 4. scalar; watt

Question ID : **441009149625**
Option 1 ID : **441009594236**
Option 2 ID : 441009594235
Option 3 ID : **441009594237**
Option 4 ID : **441009594234**
Status : **Answered**
Chosen Option : **4**

Q.36 How many three-digit even numbers can be formed using the digits 1, 2, 3, 4, 5, 6 if the digits can be repeated?

Ans ✗ 1. 216

✓ 2. 108

✗ 3. 54

✗ 4. 36

Question ID : **441009118736**
Option 1 ID : **441009472070**
Option 2 ID : **441009472072**
Option 3 ID : **441009472073**
Option 4 ID : **441009472071**
Status : **Answered**
Chosen Option : **1**

Q. 37 Which of the following statements about magnification is true?

Ans ✗ 1. The magnification produced by a convex lens is always positive for real images.

✓ 2. In a concave mirror, the magnification is positive when the image is virtual and erect.

✗ 3. The magnification produced by a concave lens is positive for real images.

✗ 4. For a convex mirror, the image is always real and inverted, producing a negative magnification.

Question ID : **441009116283**
Option 1 ID : **441009462572**
Option 2 ID : **441009462573**
Option 3 ID : **441009462574**
Option 4 ID : **441009462575**
Status : **Answered**
Chosen Option : **4**

Q. 38 Let p(x) be a polynomial. If all the roots of p(x) = 0 are real, then all the roots of p'(x) = 0 are:

Ans ✗ 1. complex

✗ 2. rational

✓ 3. real

✗ 4. zero

Question ID : **441009106886**
Option 1 ID : **441009425579**
Option 2 ID : **441009425581**
Option 3 ID : **441009425578**
Option 4 ID : **441009425580**
Status : **Answered**
Chosen Option : **2**

Q. 39 The mean deviation about median of 10 observations is 15. If each observation is multiplied by -3, then find the new mean deviation about median of resulting observations.

Ans ✗ 1. 135

✗ 2. −45

✗ 3. −135

✓ 4. 45

Question ID : **441009159224**
Option 1 ID : **441009631781**
Option 2 ID : **441009631780**
Option 3 ID : **441009631782**
Option 4 ID : **441009631779**
Status : **Answered**
Chosen Option : **1**

Q.40 If the velocity of a mosquito is given by $\vec{v} = 5\vec{i} + 3t\vec{j} + 2t^2\vec{k}$, the magnitude of its acce

Ans
✔ 1. 5 m/s^2

✘ 2. 1 m/s^2

✘ 3. 2 m/s^2

✘ 4. 3 m/s^2

Question ID : **441009145397**
Option 1 ID : **441009577534**
Option 2 ID : **441009577531**
Option 3 ID : **441009577532**
Option 4 ID : **441009577533**
Status : **Answered**
Chosen Option : **2**

Q.41 A body of mass 10 kg is initially at rest and is acted upon by a variable force F(x)=6x^2 N, where x is the displacement in metres. The body moves from x=0 to x=4 m. Calculate the work done by the force on the body during this displacement.

Ans
✔ 1. 128 J

✘ 2. 192 J

✘ 3. 0 J

✘ 4. 256 J

Question ID : **441009130312**
Option 1 ID : **441009517639**
Option 2 ID : **441009517641**
Option 3 ID : **441009517642**
Option 4 ID : **441009517640**
Status : **Answered**
Chosen Option : **2**

Q.42 Which of the following is a universal set of $\mathbb{Q} \times \mathbb{N}$ and $\mathbb{N} \times \mathbb{Q}^c$?

Ans
✘ 1. $\mathbb{Q} \times \mathbb{Q}^c$

✘ 2. $\mathbb{R} \times \mathbb{Q}^c$

✔ 3. $\mathbb{Q} \times \mathbb{R}$

✘ 4. $\mathbb{R} \times \mathbb{N}$

Question ID : **441009152194**
Option 1 ID : **441009603939**
Option 2 ID : **441009603940**
Option 3 ID : **441009603942**
Option 4 ID : **441009603941**
Status : **Answered**
Chosen Option : **3**

Q. 43 Which of the following statements is FALSE regarding an extrinsic semiconductor?

Ans ✗ 1. In an n-type extrinsic semiconductor, the electrons are the majority charge carriers.

✗ 2. An extrinsic semiconductor is electrically neutral.

✗ 3. In an extrinsic semiconductor, an impurity is added.

✓ 4. The conductivity of an extrinsic semiconductor is less than an intrinsic semiconductor.

Question ID : **441009109728**
Option 1 ID : **441009436643**
Option 2 ID : **441009436644**
Option 3 ID : **441009436642**
Option 4 ID : **441009436641**
Status : **Answered**
Chosen Option : **2**

Q. 44 The input voltage across the primary coil of a transformer is 200 V and the number of turns in this coil is X. If the output voltage across the secondary coil having 1500 turns is 3000 V, then what will be the value of X?

Ans ✗ 1. 0.01

✗ 2. 10

✓ 3. 100

✗ 4. 1

Question ID : **441009108520**
Option 1 ID : **441009432008**
Option 2 ID : **441009432010**
Option 3 ID : **441009432009**
Option 4 ID : **441009432011**
Status : **Answered**
Chosen Option : **2**

Q. 45 If $\dfrac{\cos 2\beta + \cos 3\beta + \cos 4\beta}{\sin 2\beta + \sin 3\beta + \sin 4\beta} = a$, then a is:

Ans ✗ 1. $\cot 2\beta$

✗ 2. $\cot 4\beta$

✗ 3. $\cot 9\beta$

✓ 4. $\cot 3\beta$

Question ID : **441009152437**
Option 1 ID : **441009604904**
Option 2 ID : **441009604905**
Option 3 ID : **441009604906**
Option 4 ID : **441009604903**
Status : **Answered**
Chosen Option : **2**

Q. 46 If $x = \sin t - \cos 2t$ and $y = \cos t - \sin 2t$, then $\left(\dfrac{dy}{dx}\right)_{t=\frac{\pi}{4}} = $ _____.

Ans

✗ 1. $\dfrac{-1 - 2\sqrt{2}}{7}$

✗ 2. $\dfrac{1 + 2\sqrt{2}}{7}$

✔ 3. $\dfrac{1 - 2\sqrt{2}}{7}$

✗ 4. $\dfrac{-1 + 2\sqrt{2}}{7}$

Question ID : **441009118333**
Option 1 ID : **441009470495**
Option 2 ID : **441009470493**
Option 3 ID : **441009470492**
Option 4 ID : **441009470494**
Status : **Answered**
Chosen Option : **2**

Q. 47 Which of the following is a set?

Ans

✗ 1. A collection of most dangerous animals of the world

✔ 2. The set of letters in the English Alphabet

✗ 3. A team of eleven best-cricket batsmen of the world

✗ 4. The collection of ten most talented writers of India

Question ID : **441009114975**
Option 1 ID : **441009457303**
Option 2 ID : **441009457302**
Option 3 ID : **441009457304**
Option 4 ID : **441009457301**
Status : **Answered**
Chosen Option : **2**

Q. 48 If $f(x)$ is a polynomial of degree n, where $n \in \mathbb{N}$, then which of the following statements is NOT always true?

✓ 1. If $g(x) = f'(x)$, then $g'(x)$ can be a polynomial of degree less than $n - 2$

✗ 2. $f'(x)$ is differentiable for all $x \in \mathbb{R}$

✗ 3. $f'(a)$ exist for all $a \in \mathbb{R}$

✗ 4. $f'(x)$ is a polynomial of degree $n - 1$

Question ID : **441009159275**
Option 1 ID : **441009631977**
Option 2 ID : **441009631978**
Option 3 ID : **441009631976**
Option 4 ID : **441009631975**
Status : **Answered**
Chosen Option : **2**

Q. 49 How much pressure will be experienced by a scuba diver 10 m below the surface of an ocean? (Take the atmospheric pressure as 1.01×10^5 Pa, the density of the water as 1000 kg/m^3 and g = 10 m/s^2)

✗ 1. 2.01×10^4 Pa

✗ 2. 2.01×10^6 Pa

✓ 3. 2.01×10^5 Pa

✗ 4. 2.01×10^3 Pa

Question ID : **441009114636**
Option 1 ID : **441009455977**
Option 2 ID : **441009455976**
Option 3 ID : **441009455974**
Option 4 ID : **441009455975**
Status : **Answered**
Chosen Option : **2**

Q. Consider the statements given below:

50 (I) There exist two lines l_1 and l_2 passing through origin with shortest distance 2 units

(II) There exist skew lines l_1 and l_2 with shortest distance 0 units.

Which of the following options is correct?

Ans ✓ 1. Neither (I) nor (II) is true

✗ 2. Only (II) is true

✗ 3. Only (I) is true

✗ 4. Both (I) and (II) are true

Question ID : **441009159171**
Option 1 ID : **441009631578**
Option 2 ID : **441009631576**
Option 3 ID : **441009631575**
Option 4 ID : **441009631577**
Status : **Answered**
Chosen Option : **2**

Q. Satellites orbiting in the circular orbits above the Earth's equatorial plane with the time period T = _____
hours, are called _____.

51

Ans ✗ 1. 12; polar satellites

✗ 2. 12; geostationary satellites

✗ 3. 24; polar satellites

✓ 4. 24; geostationary satellites

Question ID : **441009145250**
Option 1 ID : **441009576963**
Option 2 ID : **441009576964**
Option 3 ID : **441009576961**
Option 4 ID : **441009576962**
Status : **Answered**
Chosen Option : **2**

Q.52 A toy car is moving in a circular track of radius 2 m with a velocity of 36 km/hr. The centripetal acceleration of car is given by:

Ans

✗ 1. 18 m/s^2

✗ 2. 100 m/s^2

✗ 3. 36 m/s^2

✔ 4. 50 m/s^2

Question ID : **441009145413**
Option 1 ID : **441009577595**
Option 2 ID : **441009577598**
Option 3 ID : **441009577596**
Option 4 ID : **441009577597**
Status : **Answered**
Chosen Option : **2**

Q.53 Two cylindrical wires, A and B, made of the same material with equal lengths but different radii r_1 and r_2, are first connected in series and then in parallel. What is the ratio of the effective resistance in the series combination to that in the parallel combination?

Ans

✔ 1. $[(r_1^2 + r_2^2)/r_1 r_2]^2$

✗ 2. $[r_1 r_2 /(r_1^2 + r_2^2)]^2$

✗ 3. $[(r_1^2 + r_2^2)/r_1 r_2]^4$

✗ 4. $[r_1 r_2 /(r_1^2 + r_2^2)]^4$

Question ID : **441009130453**
Option 1 ID : **441009518240**
Option 2 ID : **441009518242**
Option 3 ID : **441009518241**
Option 4 ID : **441009518239**
Status : **Answered**
Chosen Option : **2**

Q.54 Direction cosines of x-axis are:

Ans

✗ 1. $0, 0, 0$

✔ 2. $1, 0, 0$

✗ 3. $1, 1, 1$

✗ 4. $0, 1, 1$

Question ID : **441009143633**
Option 1 ID : **441009570520**
Option 2 ID : **441009570517**
Option 3 ID : **441009570519**
Option 4 ID : **441009570518**
Status : **Answered**
Chosen Option : **2**

Q. 55 The expression $\cos(2x)\cos\left(\dfrac{x}{2}\right) - \cos(3x)\cos\left(\dfrac{9x}{2}\right)$ equals:

Ans

✗ 1. $\sin(x)\sin(4x)$

✗ 2. $\cos(x)\cos(4x)$

✗ 3. $\cos(5x)\cos\left(\dfrac{5x}{2}\right)$

✔ 4. $\sin(5x)\sin\left(\dfrac{5x}{2}\right)$

Q. 56 Find the argument of the complex number $\left(\dfrac{2+3i}{12-4i}\right)^4$.

Ans

✗ 1. $4\tan^{-1}\left(\dfrac{1}{3}\right)$

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

✔ 3. $4\tan^{-1}\left(\dfrac{11}{3}\right)$

✗ 4. $4\tan^{-1}\left(\dfrac{3}{11}\right)$

Q.57 For which of the following values of p, distance of the point $(p, 2)$ from the line $3x -$

Ans ✓ 1. $-\dfrac{11}{3}$

✗ 2. $\dfrac{8}{3}$

✗ 3. -5

✗ 4. 7

Q.58 If the AM (arithemetic mean) of 31 observations is 45 such that the AM of the first ⁞ AM of the last 16 observations is 60. Find the 16th observation of the AP.

Ans ✗ 1. 135

✗ 2. 145

✗ 3. 105

✓ 4. 205

Q.59 If A is the set of positive rational numbers and B is the set of natural numbers, then ⁞ A and B?

Ans ✗ 1. $\mathbb{Q} \cup \mathbb{N}$

✗ 2. $\mathbb{Q}^+$

✗ 3. $\mathbb{R}$

✓ 4. $\mathbb{R} \backslash \mathbb{N}$

Q60 Find the vector of length 4 units which is perpendicular to the vectors $\vec{V}_1 = \hat{i} - \hat{j} + 2\hat{k}$ and $\vec{V}_2 = 2\hat{i} + \hat{j} + 3\hat{k}$.

Ans

✔ 1. $\dfrac{-20}{\sqrt{35}}\hat{i} + \dfrac{4}{\sqrt{35}}\hat{j} + \dfrac{12}{\sqrt{35}}\hat{k}$

✘ 2. $-\dfrac{20}{\sqrt{35}}\hat{i} - \dfrac{4}{\sqrt{35}}\hat{j} - \dfrac{12}{\sqrt{35}}\hat{k}$

✘ 3. $\dfrac{20}{\sqrt{35}}\hat{i} + \dfrac{4}{\sqrt{35}}\hat{j} + \dfrac{12}{\sqrt{35}}\hat{k}$

✘ 4. $\dfrac{20}{\sqrt{35}}\hat{i} - \dfrac{4}{\sqrt{35}}\hat{j} + \dfrac{12}{\sqrt{35}}\hat{k}$