AAI JE ATC Shift 3 Dec 27, 2023 Question Paper with Answers

भारतीय विमानपत्तन प्राधिकरण
AIRPORTS AUTHORITY OF INDIA

(SCHEDULE – 'A' MINI RATNA- CATEGORY- 1 PUBLIC SECTOR ENTERPRISES)
राजीव गांधी भवन, सफदरजंग हवाई अड्डा, नईदिल्ली- 110003
RAJIV GANDHI BHAWAN, SAFDARJUNG AIRPORT, NEW DELHI-110003

Participant ID	
Participant Name	
Test Center Name	
Test Date	
Test Time	4:30 PM - 6:30 PM
Subject	JUNIOR EXECUTIVE AIR TRAFFIC CONTROL

Section : **General Knowledge**

Q.1 What section of the Indian Penal Code addresses "Honour killing"?

Ans ✔ 1. Section 300

✘ 2. Section 285

✘ 3. Section 280

✘ 4. Section 315

Question ID : 630680529915
Option 1 ID : 6306802071585
Option 2 ID : 6306802071586
Option 3 ID : 6306802071584
Option 4 ID : 6306802071587
Status : **Answered**
Chosen Option : **2**

Q.2 Who among the following received the 2022 Arjuna Award for boxing?

Ans ✘ 1. Ankushita Boro

✔ 2. Nikhat Zareen

✘ 3. Shiva Thapa

✘ 4. Atanu Das

Question ID : 630680529894
Option 1 ID : 6306802071502
Option 2 ID : 6306802071500
Option 3 ID : 6306802071501
Option 4 ID : 6306802071503
Status : **Answered**
Chosen Option : **2**

Q.3 **Which of the Pala kings found the University of Vikramshila?**

Ans ✗ 1. Gopala

✓ 2. Dharmapala

✗ 3. Ompala

✗ 4. Krishnapala

Question ID : **630680529899**
Option 1 ID : **6306802071523**
Option 2 ID : **6306802071520**
Option 3 ID : **6306802071521**
Option 4 ID : **6306802071522**
Status : **Answered**
Chosen Option : **2**

Q.4 **Who was the initial person to initiate the Shuddhi movement?**

Ans ✗ 1. Rabindranath Tagore

✗ 2. Mahatma Gandhi

✓ 3. Swami Dayanand Saraswati

✗ 4. Aurobindo

Question ID : **630680529912**
Option 1 ID : **6306802071574**
Option 2 ID : **6306802071573**
Option 3 ID : **6306802071572**
Option 4 ID : **6306802071575**
Status : **Answered**
Chosen Option : **3**

Q.5 **Which Article in the constitution grants the High Court the authority to sanction contempt of court?**

Ans ✗ 1. Article 214

✗ 2. Article 216

✗ 3. Article 217

✓ 4. Article 215

Question ID : **630680529918**
Option 1 ID : **6306802071596**
Option 2 ID : **6306802071598**
Option 3 ID : **6306802071599**
Option 4 ID : **6306802071597**
Status : **Answered**
Chosen Option : **1**

Q.6 **When was the Economic Survey separated from the Indian Union Budget?**

Ans ✗ 1. 1951

✗ 2. 1960

✗ 3. 1954

✓ 4. 1964

Question ID : **630680529907**
Option 1 ID : **6306802071555**
Option 2 ID : **6306802071553**
Option 3 ID : **6306802071552**
Option 4 ID : **6306802071554**
Status : **Answered**
Chosen Option : **1**

Q.7 Siachen Glacier is located in which of the following mountain ranges?

Ans ✅ 1. Karakoram Range

❌ 2. Himalayan Range

❌ 3. Pir Panjal Range

❌ 4. Hindu Kush Range

Question ID : **630680529910**
Option 1 ID : **6306802071564**
Option 2 ID : **6306802071566**
Option 3 ID : **6306802071567**
Option 4 ID : **6306802071565**
Status : **Answered**
Chosen Option : **1**

Q.8 A compressor used extensively in the chemical, hydrocarbon, and gas industries to transport compressible fluids in a dependable manner is _____.

Ans ❌ 1. Roots Blower

❌ 2. Centrifugal compressor

✅ 3. Reciprocating compressor

❌ 4. Diaphragm compressor

Question ID : **630680529904**
Option 1 ID : **6306802071542**
Option 2 ID : **6306802071540**
Option 3 ID : **6306802071543**
Option 4 ID : **6306802071541**
Status : **Answered**
Chosen Option : **3**

Q.9 Who has won the most (Rajat Kamal) silver lotuses for finest choreography and is a three-time National Award winner?

Ans ❌ 1. Prabhu Deva

❌ 2. Raju Sundaram

✅ 3. Saroj Khan

❌ 4. Ganesh Acharya

Question ID : **630680529897**
Option 1 ID : **6306802071514**
Option 2 ID : **6306802071515**
Option 3 ID : **6306802071513**
Option 4 ID : **6306802071512**
Status : **Answered**
Chosen Option : **1**

Q.10 Between Maleku (Minicoy) in Lakshadweep and which of the following is the Minicoy Channel?

Ans

  ✗ 1. Kiltan in Lakshadweep

  ✗ 2. Mayabunder in Andaman & Nicobar Islands

  ✗ 3. Hambantota in Sri Lanka

  ✓ 4. Ihavandippolhu in Maldives

Question ID : **630680529920**
Option 1 ID : **6306802071604**
Option 2 ID : **6306802071607**
Option 3 ID : **6306802071606**
Option 4 ID : **6306802071605**
Status : **Marked For Review**
Chosen Option : **4**

Section : **General Intelligence**

Q.1 In the following question, select the related letter pair from the given alternatives.

BFVD : CCWA :: ?

Ans

  ✓ 1. FKDH : GHEE

  ✗ 2. ZAPS : AXAA

  ✗ 3. PSUR : ONQT

  ✗ 4. MOAZ : NOLB

Question ID : **630680529972**
Option 1 ID : **6306802071814**
Option 2 ID : **6306802071815**
Option 3 ID : **6306802071812**
Option 4 ID : **6306802071813**
Status : **Answered**
Chosen Option : **1**

Q.2 Number of letters in six words W1, W2, W3, W4, W5 and W6 are compared. Number of letters in W1 are least. Number of letters in W2 are more than W1 but less than W4. Number of letters in W6 are more than W3 and W5. Number of letters in W3 are more than W4. If number of letters in W5 are more than W3, then the number of letters in W2 are less than the number of letters of how many words?

Ans

  ✗ 1. 3

  ✗ 2. 2

  ✗ 3. 1

  ✓ 4. 4

Question ID : **630680529955**
Option 1 ID : **6306802071742**
Option 2 ID : **6306802071741**
Option 3 ID : **6306802071740**
Option 4 ID : **6306802071743**
Status : **Answered**
Chosen Option : **4**

Q.3 A series is given with one term wrong. Select the wrong term from the given alternatives.

42, 43, 46, 55, 84, 163, 406

Ans ✗ 1. 55

✔ 2. 84

✗ 3. 163

✗ 4. 43

Question ID : **630680529969**
Option 1 ID : **6306802071803**
Option 2 ID : **6306802071800**
Option 3 ID : **6306802071802**
Option 4 ID : **6306802071801**
Status : **Answered**
Chosen Option : **2**

Q.4 Five persons A, B, C, D and E are sitting around a circular table facing towards the centre (not necessarily in the same order). Only one person is sitting between C and D. B is sitting second to the left of D. A is sitting to the immediate right of B. Who is sitting to the immediate left of E?

Ans ✔ 1. D

✗ 2. B

✗ 3. A

✗ 4. C

Question ID : **630680529953**
Option 1 ID : **6306802071732**
Option 2 ID : **6306802071733**
Option 3 ID : **6306802071734**
Option 4 ID : **6306802071735**
Status : **Answered**
Chosen Option : **1**

Q.5 In a certain code language, 'HORSE' is written as 'KRUVH'. What is the code for 'RULES' in that code language?

Ans ✔ 1. UXOHV

✗ 2. UXOGV

✗ 3. UXOIW

✗ 4. UXOIV

Question ID : **630680529966**
Option 1 ID : **6306802071788**
Option 2 ID : **6306802071790**
Option 3 ID : **6306802071789**
Option 4 ID : **6306802071791**
Status : **Answered**
Chosen Option : **1**

Q.6 By interchanging which two signs will the following equation becomes correct?

$13 - 3 \div 19 \times 6 + 2 = 67$

Ans   ✗ 1. − and ×

     ✔ 2. ÷ and +

     ✗ 3. × and ÷

     ✗ 4. − and ÷

Question ID : **630680529950**
Option 1 ID : **6306802071724**
Option 2 ID : **6306802071727**
Option 3 ID : **6306802071725**
Option 4 ID : **6306802071726**
Status : **Answered**
Chosen Option : **2**

Q.7 Consider the string given below made up of numbers and symbols. If every 3 is replaced by 5, then which of the following element will be at 7th position to the right from the 16th position element from the left end in the newly formed string?

3 # 3 4 # $ 3 3 3 3 4 $ 4 # 4 4 4 # 4 # 3 # # 3 $

Ans   ✗ 1. 4

     ✗ 2. 5

     ✔ 3. #

     ✗ 4. $

Question ID : **630680529945**
Option 1 ID : **6306802071705**
Option 2 ID : **6306802071706**
Option 3 ID : **6306802071704**
Option 4 ID : **6306802071707**
Status : **Answered**
Chosen Option : **3**

Q.8 A is the father of B. B is the brother of C. C is the sister of D. D is the daughter of E. How is E related to C?

Ans   ✗ 1. Sister

     ✗ 2. Father

     ✔ 3. Mother

     ✗ 4. Brother

Question ID : **630680529959**
Option 1 ID : **6306802071759**
Option 2 ID : **6306802071757**
Option 3 ID : **6306802071756**
Option 4 ID : **6306802071758**
Status : **Answered**
Chosen Option : **3**

Q.9 Marks of five girls A, F, J, T and V are compared. Each girl has different marks. Marks of J are less than T, V and A. Marks of V are less than A but more than T. Marks of F are less than J. Marks of how many girls are less than the marks of V?

Ans
✗ 1. 2

✗ 2. 0

✗ 3. 1

✓ 4. 3

Question ID : **630680529941**
Option 1 ID : **6306802071689**
Option 2 ID : **6306802071691**
Option 3 ID : **6306802071688**
Option 4 ID : **6306802071690**
Status : **Answered**
Chosen Option : **4**

Q.10 In the following question, four letter pairs are given. The letters on left side of (–) is related to the letters on the right side of (–) with some Logic/Rule/Relation. Three are similar on basis of same Logic/Rule/Relation. Select the odd one out from the given alternatives.

Ans
✗ 1. HIMP – ADDE

✗ 2. XYCF – QTTU

✓ 3. OURV – HPIL

✗ 4. NOSV – GJJK

Question ID : **630680529968**
Option 1 ID : **6306802071798**
Option 2 ID : **6306802071799**
Option 3 ID : **6306802071797**
Option 4 ID : **6306802071796**
Status : **Answered**
Chosen Option : **3**

Q.11 By Interchanging the given two numbers which of the following equation will NOT be correct?
4 and 2
I. $8 \div 4 \times 2 - 7 + 6 = 18$
II. $6 \times 4 - 8 \div 2 + 3 = 15$

Ans
✗ 1. Neither I nor II

✗ 2. Only I

✓ 3. Both I and II

✗ 4. Only II

Question ID : **630680529973**
Option 1 ID : **6306802071819**
Option 2 ID : **6306802071816**
Option 3 ID : **6306802071818**
Option 4 ID : **6306802071817**
Status : **Answered**
Chosen Option : **3**

Q.12 A series is given with one term missing. Select the correct alternative from the given ones that will complete the series.

RTS, NZF, JFS, FLF, ?

Ans ✗ 1. BMO

✓ 2. BRS

✗ 3. RMO

✗ 4. ARQ

Question ID : **630680529956**
Option 1 ID : **6306802071746**
Option 2 ID : **6306802071747**
Option 3 ID : **6306802071744**
Option 4 ID : **6306802071745**
Status : **Answered**
Chosen Option : **2**

Q.13 What approximate value will come in place of (A)?

$13 \times A = (127.68 + 88.71 + 96.38 + 2.62) \div 3.93$

Ans ✓ 1. 6

✗ 2. 4

✗ 3. 10

✗ 4. 8

Question ID : **630680529949**
Option 1 ID : **6306802071720**
Option 2 ID : **6306802071722**
Option 3 ID : **6306802071723**
Option 4 ID : **6306802071721**
Status : **Answered**
Chosen Option : **1**

Q.14 In the following question below are given some statements followed by some conclusions based on those statements.
Taking the given statements to be true even if they seem to be at variance from commonly known facts. Read all the
conclusions and then decide which of the given conclusion logically follows the given statements.

Statements:
I. No P is A.
II. Some H are A.

Conclusion:
I. No A is P.
II. Some H are P.

Ans ✗ 1. Neither conclusion follows

✗ 2. Both conclusions I and II follows

✗ 3. Only conclusion II follows

✓ 4. Only conclusion I follows

Question ID : **630680529965**
Option 1 ID : **6306802071787**
Option 2 ID : **6306802071786**
Option 3 ID : **6306802071785**
Option 4 ID : **6306802071784**
Status : **Answered**
Chosen Option : **4**

Q.15 Which of the following meaningful four-letter English word can be formed from the second, sixth, eighth and tenth letters of the word "ARCHITECTURE"?

Ans
✗ 1. URCT
✔ 2. CURT
✗ 3. TRUC
✗ 4. RUCT

Question ID : 630680529957
Option 1 ID : 6306802071749
Option 2 ID : 6306802071750
Option 3 ID : 6306802071748
Option 4 ID : 6306802071751
Status : **Answered**
Chosen Option : **2**

Section : **General Aptitude**

Q.1 Length, breadth and height of a cuboid are 6 cm, 10 cm and 15 cm respectively. What is the total surface area of the cuboid?

Ans
✔ 1. 600 cm^2
✗ 2. 750 cm^2
✗ 3. 800 cm^2
✗ 4. 900 cm^2

Question ID : 630680530014
Option 1 ID : 6306802071980
Option 2 ID : 6306802071981
Option 3 ID : 6306802071982
Option 4 ID : 6306802071983
Status : **Answered**
Chosen Option : **1**

Q.2 The average age of a class of 6 girls is x years. Four new girls having ages $x - 4$, $x + 8$, $x + 12$ and $x + 14$ joins the class. What is the new average age of the class?

Ans
✗ 1. $x - 2$
✗ 2. $x + 5$
✗ 3. $x + 1$
✔ 4. $x + 3$

Question ID : 630680530004
Option 1 ID : 6306802071942
Option 2 ID : 6306802071943
Option 3 ID : 6306802071940
Option 4 ID : 6306802071941
Status : **Answered**
Chosen Option : **4**

Q.3 If P gets 10 percent more marks than Q, then by what percentage marks of Q are less than the marks of P?

Ans

✗ 1. 10 percent

✓ 2. 9.09 percent

✗ 3. 12.5 percent

✗ 4. 8.75 percent

> Question ID : **630680529989**
> Option 1 ID : **6306802071881**
> Option 2 ID : **6306802071882**
> Option 3 ID : **6306802071883**
> Option 4 ID : **6306802071880**
> Status : **Answered**
> Chosen Option : **2**

Q.4 Rs. 6500 is divided among X, Y and Z such that 2 times of X's share is equal to 3 times of Y's share which is equal to 4 times of Z's share. What is the share of Y?

Ans

✗ 1. Rs. 2400

✓ 2. Rs. 2000

✗ 3. Rs. 1600

✗ 4. Rs. 2800

> Question ID : **630680530010**
> Option 1 ID : **6306802071966**
> Option 2 ID : **6306802071967**
> Option 3 ID : **6306802071964**
> Option 4 ID : **6306802071965**
> Status : **Answered**
> Chosen Option : **2**

Q.5 Which of the following is divisible by 11?

Ans

✓ 1. 42647

✗ 2. 45629

✗ 3. 33124

✗ 4. 58243

> Question ID : **630680530019**
> Option 1 ID : **6306802072003**
> Option 2 ID : **6306802072001**
> Option 3 ID : **6306802072000**
> Option 4 ID : **6306802072002**
> Status : **Answered**
> Chosen Option : **1**

Q.6 Suresh sells a car at the loss of 32 percent. What will be the ratio of cost price to selling price?

Ans ✔ 1. 25 : 17

✘ 2. 23 : 15

✘ 3. 27 : 19

✘ 4. 21 : 13

Question ID : **630680530006**
Option 1 ID : **6306802071950**
Option 2 ID : **6306802071951**
Option 3 ID : **6306802071949**
Option 4 ID : **6306802071948**
Status : **Answered**
Chosen Option : **1**

Q.7 Two trains, one 460 metres and the other 340 metres long are running in opposite directions on parallel tracks, at the speed of 81 km/hr and 63 km/hr respectively. How much time will they take to cross each other?

Ans ✔ 1. 20 seconds

✘ 2. 30 seconds

✘ 3. 10 seconds

✘ 4. 40 seconds

Question ID : **630680530021**
Option 1 ID : **6306802072010**
Option 2 ID : **6306802072011**
Option 3 ID : **6306802072009**
Option 4 ID : **6306802072008**
Status : **Answered**
Chosen Option : **1**

Q.8 N is thrice as good a workman as M and therefore is able to finish a work in 20 days less than M. In how many days can they together complete the same work?

Ans ✔ 1. 7.5 days

✘ 2. 15 days

✘ 3. 45 days

✘ 4. 22 days

Question ID : **630680530023**
Option 1 ID : **6306802072018**
Option 2 ID : **6306802072017**
Option 3 ID : **6306802072016**
Option 4 ID : **6306802072019**
Status : **Answered**
Chosen Option : **1**

Q.9 What is the discount percentage offered on a book having marked price Rs. 4300 being sold at Rs. 3784?

Ans
✗ 1. 14 percent

✓ 2. 12 percent

✗ 3. 10 percent

✗ 4. 11 percent

Question ID : **630680530008**
Option 1 ID : **6306802071959**
Option 2 ID : **6306802071958**
Option 3 ID : **6306802071957**
Option 4 ID : **6306802071956**
Status : **Answered**
Chosen Option : **2**

Q.10 The difference between cost price and selling price is Rs. 672. If loss percentage is 21 percent, then what is the selling price?

Ans
✗ 1. Rs. 2372

✓ 2. Rs. 2528

✗ 3. Rs. 2646

✗ 4. Rs. 2854

Question ID : **630680530007**
Option 1 ID : **6306802071953**
Option 2 ID : **6306802071952**
Option 3 ID : **6306802071954**
Option 4 ID : **6306802071955**
Status : **Answered**
Chosen Option : **2**

Q.11 A man walking at the speed of 12 km/hr covers a certain distance in 2 hours and 45 minutes. If he covers the same distance by cycle in 3 hours, then what is the speed of cycle?

Ans
✗ 1. 9 km/hr

✓ 2. 11 km/hr

✗ 3. 15 km/hr

✗ 4. 8 km/hr

Question ID : **630680530022**
Option 1 ID : **6306802072012**
Option 2 ID : **6306802072014**
Option 3 ID : **6306802072015**
Option 4 ID : **6306802072013**
Status : **Answered**
Chosen Option : **2**

Q.12 Two numbers are in the ratio of 4 : 7. If the sum of the two numbers is 77, then what is the difference between the two numbers?

Ans ✗ 1. 27

✗ 2. 15

✗ 3. 24

✔ 4. 21

Question ID : **630680530009**
Option 1 ID : **6306802071961**
Option 2 ID : **6306802071962**
Option 3 ID : **6306802071963**
Option 4 ID : **6306802071960**
Status : **Answered**
Chosen Option : **4**

Q.13 60 percent of selling price of a table is equal to 2/5 of the cost price of the table. What is the loss percent?

Ans ✗ 1. 34.5 percent

✗ 2. 31.76 percent

✗ 3. 30.48 percent

✔ 4. 33.33 percent

Question ID : **630680530026**
Option 1 ID : **6306802072029**
Option 2 ID : **6306802072030**
Option 3 ID : **6306802072028**
Option 4 ID : **6306802072031**
Status : **Answered**
Chosen Option : **4**

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

Ans ✗ 1. 15

✗ 2. 12

✗ 3. 16

✔ 4. 14

Question ID : **630680530020**
Option 1 ID : **6306802072006**
Option 2 ID : **6306802072004**
Option 3 ID : **6306802072007**
Option 4 ID : **6306802072005**
Status : **Answered**
Chosen Option : **4**

Q.15 If $\csc^2\theta = \frac{100}{71}$, then what is the value of $\cot^2\theta$?

Ans

✗ 1. $\dfrac{38}{51}$

✗ 2. $\dfrac{51}{71}$

✗ 3. $\dfrac{39}{71}$

✓ 4. $\dfrac{29}{71}$

Question ID : **630680529983**
Option 1 ID : **6306802071858**
Option 2 ID : **6306802071859**
Option 3 ID : **6306802071856**
Option 4 ID : **6306802071857**
Status : **Answered**
Chosen Option : **4**

Section : **General English**

Q.1 Select the most appropriate synonym of the underlined word.
Benares presents a <u>striking</u> maze of narrow streets.

Ans

✗ 1. Statuesque

✓ 2. Picturesque

✗ 3. Vague

✗ 4. Abstract

Question ID : **630680530074**
Option 1 ID : **6306802072221**
Option 2 ID : **6306802072222**
Option 3 ID : **6306802072224**
Option 4 ID : **6306802072223**
Status : **Answered**
Chosen Option : **2**

Q.2 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. That is perhaps the reason why she is perhaps lost in thought.
B. Her stillness made her look like a halfpenny gingerbread horse.
C. Anyone who has been torn away from the plough, from the familiar grey landscapes, and cast into this slough, full of monstrous lights, of unceasing uproar and hurrying people, is bound to think about the situation.
D. Her little mare is white and motionless too.

Ans

✗ 1. CABD

✗ 2. ADCB

✓ 3. DBAC

✗ 4. DABC

Question ID : **630680530051**
Option 1 ID : **6306802072132**
Option 2 ID : **6306802072131**
Option 3 ID : **6306802072130**
Option 4 ID : **6306802072129**
Status : **Answered**
Chosen Option : **1**

Q.3 Select the most appropriate ANTONYM of the underlined word.
We must <u>acknowledge</u> that something is wrong with the system.

Ans ✔ 1. Deny

✖ 2. Recognise

✖ 3. Misconstrue

✖ 4. Accord

Question ID : **630680530067**
Option 1 ID : **6306802072194**
Option 2 ID : **6306802072193**
Option 3 ID : **6306802072196**
Option 4 ID : **6306802072195**
Status : **Answered**
Chosen Option : **1**

Q.4 Select the most appropriate ANTONYM of the underlined word.

There is no proof of his <u>involvement</u> in the incident.

Ans ✖ 1. Obliviousness

✖ 2. Engagement

✔ 3. Non-engagement

✖ 4. Participation

Question ID : **630680530070**
Option 1 ID : **6306802072205**
Option 2 ID : **6306802072206**
Option 3 ID : **6306802072208**
Option 4 ID : **6306802072207**
Status : **Answered**
Chosen Option : **3**

Q.5 Select the most appropriate adverb to fill in the blank.
This lack of food was confirmed when one looked _____ in the faces of these people.

Ans ✖ 1. usually

✖ 2. generally

✔ 3. closely

✖ 4. mainly

Question ID : **630680530042**
Option 1 ID : **6306802072094**
Option 2 ID : **6306802072095**
Option 3 ID : **6306802072093**
Option 4 ID : **6306802072096**
Status : **Answered**
Chosen Option : **3**

Q.6 Select the most appropriate option to fill in the blank.
I shall be back in less than _____.

Ans ✅ 1. an hour

❌ 2. a hour

❌ 3. hour

❌ 4. the hour

Question ID : **630680530036**
Option 1 ID : **6306802072070**
Option 2 ID : **6306802072069**
Option 3 ID : **6306802072072**
Option 4 ID : **6306802072071**
Status : **Answered**
Chosen Option : **1**

Comprehension:

Read the given passage and answer the questions that follow.

… when a man has a mind to venture his money in a lottery, every figure of it appears equally alluring, and as likely to succeed as any of its fellows. All of them have the same pretensions to good luck, stand upon the same foot of competition and no manner of reason can be given why a man should prefer one to the other before the lottery is drawn. In this case therefore, caprice very often acts in the place of reasons, and forms to itself some groundless imaginary motive, where real and substantial ones are wanting. I know a well-meaning man that is very well pleased to risk his good fortune upon the number 1711, because it is the year of our Lord. I am acquainted with a tracker that would give a good deal for the number 134. On the contrary, I have been told of a certain zealous dissenter, who being a great enemy to popery, and believing that bad men are the most fortunate in this world, will lay two to one on the number 666 against any other number, because, says he, it is the number of the beast. Several would prefer the number 12,000 before any other, as it is the number of pounds in the great prize. In short, some are pleased to find their own age in their number; some that have got a number which makes a pretty appearance in the ciphers; and others, because it is the same number that succeeded in the last lottery. Each of these upon no other grounds thinks he stands fairest for the great lot, and that he is possessed of what may not be improperly called the golden number.

SubQuestion No : 7

Q.7 "…believing that bad men are the most fortunate in this world, will <u>lay two to one</u> on the number 666 against any other number, because, says he, it is the number of the beast."
What does the underlined phrase mean?

Ans ✅ 1. To place a bet

❌ 2. To spend more than one's income

❌ 3. To reduce the speed

❌ 4. To regret doing something

Question ID : **630680530091**
Option 1 ID : **6306802072279**
Option 2 ID : **6306802072280**
Option 3 ID : **6306802072277**
Option 4 ID : **6306802072278**
Status : **Answered**
Chosen Option : **1**

Comprehension:

Read the given passage and answer the questions that follow.

… when a man has a mind to venture his money in a lottery, every figure of it appears equally alluring, and as likely to succeed as any of its fellows. All of them have the same pretensions to good luck, stand upon the same foot of competition and no manner of reason can be given why a man should prefer one to the other before the lottery is drawn. In this case therefore, caprice very often acts in the place of reasons, and forms to itself some groundless imaginary motive, where real and substantial ones are wanting. I know a well-meaning man that is very well pleased to risk his good fortune upon the number 1711, because it is the year of our Lord. I am acquainted with a tracker that would give a good deal for the number 134. On the contrary, I have been told of a certain zealous dissenter, who being a great enemy to popery, and believing that bad men are the most fortunate in this world, will lay two to one on the number 666 against any other number, because, says he, it is the number of the beast. Several would prefer the number 12,000 before any other, as it is the number of pounds in the great prize. In short, some are pleased to find their own age in their number; some that have got a number which makes a pretty appearance in the ciphers; and others, because it is the same number that succeeded in the last lottery. Each of these upon no other grounds thinks he stands fairest for the great lot, and that he is possessed of what may not be improperly called the golden number.

SubQuestion No : 8

Q.8 What is the chief concept of the given passage?

Ans   ✘ 1. Different codes for good luck in lottery

       ✘ 2. Good fortune of a person purchasing lottery tickets

       ✘ 3. Misconceptions and superstitions related to lottery numbers

       ✔ 4. The whims of a lottery adventurer

Question ID : **630680530090**
Option 1 ID : **6306802072275**
Option 2 ID : **6306802072273**
Option 3 ID : **6306802072274**
Option 4 ID : **6306802072276**
Status : **Answered**
Chosen Option : **3**

Comprehension:

Read the given passage and answer the questions that follow.

… when a man has a mind to venture his money in a lottery, every figure of it appears equally alluring, and as likely to succeed as any of its fellows. All of them have the same pretensions to good luck, stand upon the same foot of competition and no manner of reason can be given why a man should prefer one to the other before the lottery is drawn. In this case therefore, caprice very often acts in the place of reasons, and forms to itself some groundless imaginary motive, where real and substantial ones are wanting. I know a well-meaning man that is very well pleased to risk his good fortune upon the number 1711, because it is the year of our Lord. I am acquainted with a tracker that would give a good deal for the number 134. On the contrary, I have been told of a certain zealous dissenter, who being a great enemy to popery, and believing that bad men are the most fortunate in this world, will lay two to one on the number 666 against any other number, because, says he, it is the number of the beast. Several would prefer the number 12,000 before any other, as it is the number of pounds in the great prize. In short, some are pleased to find their own age in their number; some that have got a number which makes a pretty appearance in the ciphers; and others, because it is the same number that succeeded in the last lottery. Each of these upon no other grounds thinks he stands fairest for the great lot, and that he is possessed of what may not be improperly called the golden number.

SubQuestion No : 9

Q.9 **Identify the word that means 'whims'.**

Ans ✔ 1. Caprice

✘ 2. Zealous

✘ 3. Cipher

✘ 4. Allure

Comprehension:

Read the given passage and answer the questions that follow.

… when a man has a mind to venture his money in a lottery, every figure of it appears equally alluring, and as likely to succeed as any of its fellows. All of them have the same pretensions to good luck, stand upon the same foot of competition and no manner of reason can be given why a man should prefer one to the other before the lottery is drawn. In this case therefore, caprice very often acts in the place of reasons, and forms to itself some groundless imaginary motive, where real and substantial ones are wanting. I know a well-meaning man that is very well pleased to risk his good fortune upon the number 1711, because it is the year of our Lord. I am acquainted with a tracker that would give a good deal for the number 134. On the contrary, I have been told of a certain zealous dissenter, who being a great enemy to popery, and believing that bad men are the most fortunate in this world, will lay two to one on the number 666 against any other number, because, says he, it is the number of the beast. Several would prefer the number 12,000 before any other, as it is the number of pounds in the great prize. In short, some are pleased to find their own age in their number; some that have got a number which makes a pretty appearance in the ciphers; and others, because it is the same number that succeeded in the last lottery. Each of these upon no other grounds thinks he stands fairest for the great lot, and that he is possessed of what may not be improperly called the golden number.

SubQuestion No : 10

Q.10 What, according to the author, is true about the lottery explorer's attitude?

Ans   ✗ 1. They believe that different codes and numbers can do wonders for them.

✗ 2. They pretend to have individual good luck and feel competition with the other lottery buyers.

✗ 3. They assume that lucky numbers have demonic or heavenly attributes in themselves.

✓ 4. They are more driven by caprice and imaginary motives than any sound reason and substantial grounds.

Question ID : **630680530093**
Option 1 ID : **6306802072287**
Option 2 ID : **6306802072285**
Option 3 ID : **6306802072288**
Option 4 ID : **6306802072286**
Status : **Answered**
Chosen Option : **4**

Q.11 Identify the option in which the proverb correctly fits the context of the given sentence.

Ans   ✓ 1. She was very houseproud and believed that cleanliness is next to godliness.

✗ 2. She was very houseproud and believed that practice makes man perfect.

✗ 3. She was very houseproud and believed that beggars can't be choosers.

✗ 4. She was very houseproud and believed that all is well that ends well.

Question ID : **630680530061**
Option 1 ID : **6306802072170**
Option 2 ID : **6306802072171**
Option 3 ID : **6306802072172**
Option 4 ID : **6306802072169**
Status : **Answered**
Chosen Option : **1**

Q.12 In which of the following sentences has the idiom been used correctly?

Ans ✗ 1. The producer was led up the garden path when the movie received a poor box office collection.

✗ 2. The producer took a leaf out of his books when the movie received a poor box office collection.

✗ 3. The producer was shown the ropes when the movie received a poor box office collection.

✓ 4. Everything went down in flames for the producer when the movie received a poor box office collection.

Question ID : **630680530064**
Option 1 ID : **6306802072182**
Option 2 ID : **6306802072184**
Option 3 ID : **6306802072183**
Option 4 ID : **6306802072181**
Status : **Answered**
Chosen Option : **4**

Q.13 Select the grammatically correct sentence.

Ans ✓ 1. He was so late that he was scolded by the teacher.

✗ 2. He was so late that he is scolded by the teacher.

✗ 3. He was so late that he was being scolded by the teacher.

✗ 4. He was late so he is scolded by the teacher.

Question ID : **630680530044**
Option 1 ID : **6306802072103**
Option 2 ID : **6306802072102**
Option 3 ID : **6306802072104**
Option 4 ID : **6306802072101**
Status : **Answered**
Chosen Option : **1**

Q.14 Identify the option in which the idiom correctly fits the context of the given sentence.

Ans ✗ 1. Maybe, I should get something off Rick's chest and start coming early every morning.

✓ 2. Maybe, I should take a leaf out of Rick's book and start coming early every morning.

✗ 3. Maybe, I should hold the fort for Rick and start coming early every morning.

✗ 4. Maybe, I should take something to Rick's heart and start coming early every morning.

Question ID : **630680530057**
Option 1 ID : **6306802072154**
Option 2 ID : **6306802072155**
Option 3 ID : **6306802072156**
Option 4 ID : **6306802072153**
Status : **Answered**
Chosen Option : **2**

Q.15 Select the most appropriate option to fill in the blank.
Switzerland is _____.

Ans ✗ 1. an European country

✗ 2. European country

✓ 3. a European country

✗ 4. the European country

Question ID : **630680530035**
Option 1 ID : **6306802072065**
Option 2 ID : **6306802072068**
Option 3 ID : **6306802072067**
Option 4 ID : **6306802072066**
Status : **Marked For Review**
Chosen Option : **1**

Q.16 Identify the option in which the idiom correctly fits the context of the given sentence.

Ans ✗ 1. She is the boss, but her secretary seems to see red.

✗ 2. She is the boss, but her secretary seems to pay through the nose.

✗ 3. She is the boss, but her secretary seems to lead down.

✓ 4. She is the boss, but her secretary seems to hold the reins.

Question ID : **630680530058**
Option 1 ID : **6306802072159**
Option 2 ID : **6306802072157**
Option 3 ID : **6306802072160**
Option 4 ID : **6306802072158**
Status : **Answered**
Chosen Option : **4**

Q.17 Select the grammatically correct sentence.

Ans ✓ 1. There were 100 books on that shelf, each one of them was a classic.

✗ 2. There were 100 books on that shelf, each one of them were classic.

✗ 3. There was 100 books on that shelf, each one of them is a classic.

✗ 4. There were 100 books on that shelf, each one of them are a classic.

Question ID : **630680530048**
Option 1 ID : **6306802072119**
Option 2 ID : **6306802072120**
Option 3 ID : **6306802072118**
Option 4 ID : **6306802072117**
Status : **Answered**
Chosen Option : **1**

Q.18 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. Carnival first took shape in the late 18th century on the island of Trinidad and Tobago, emerging in a ritual called Cannes Brulees (French for 'sugarcane burning').
B. This musical performance was an act of reclaiming cultural vitality, taking ownership of their culture and enacting empowerment through these acts of rebellion.
C. Instruments resembling drums and sticks were used during Cannes Brulees to perform percussive music linked to the African roots of enslaved people; this music reconnected the performers with their ancestors and the past spirits that guided and sustained them.
D. Carnival's celebration of rebellion against enslavement has roots in both African and Indigenous cultures.
E. Enslaved Africans purposefully set fire to sugarcane intended for sale, resisting plantation slavery through the destruction of its valuable export commodity-sugar.

Ans ✖ 1. CBDEA

✔ 2. DAECB

✖ 3. ABDEC

✖ 4. DCEBA

Question ID : **630680530054**
Option 1 ID : **6306802072142**
Option 2 ID : **6306802072143**
Option 3 ID : **6306802072141**
Option 4 ID : **6306802072144**
Status : **Answered**
Chosen Option : **2**

Q.19 Select the correctly spelt word.

Ans ✖ 1. Bureaucrate

✔ 2. Bureaucrat

✖ 3. Beaureaucrate

✖ 4. Bureacrat

Question ID : **630680530078**
Option 1 ID : **6306802072240**
Option 2 ID : **6306802072239**
Option 3 ID : **6306802072238**
Option 4 ID : **6306802072237**
Status : **Answered**
Chosen Option : **2**

Q.20 Select the most appropriate abstract noun to fill in the blank.
She expressed her _____ of his comment with a frown.

Ans ✖ 1. disagreement

✖ 2. dejection

✖ 3. disbelief

✔ 4. disapproval

Question ID : **630680530039**
Option 1 ID : **6306802072081**
Option 2 ID : **6306802072084**
Option 3 ID : **6306802072082**
Option 4 ID : **6306802072083**
Status : **Answered**
Chosen Option : **2**

Section : **Domain Knowledge**

Q.1 The value of the limit $\lim_{x \to \infty} \left(\frac{7x^3 - 2x^2 + 5}{2x^3 - 7x} \right)$ is:

Ans ✗ 1. 0

✓ 2. $\frac{7}{2}$

✗ 3. $-\frac{7}{2}$

✗ 4. $\frac{1}{2}$

Question ID : **630680530236**
Option 1 ID : **6306802072849**
Option 2 ID : **6306802072851**
Option 3 ID : **6306802072852**
Option 4 ID : **6306802072850**
Status : **Answered**
Chosen Option : **2**

Q.2 Identify the option that arranges the following in chronological order for Carnot cycle.

A. Isothermal expansion
B. Isothermal compression
C. Adiabatic expansion
D. Adiabatic compression

Ans ✓ 1. A, C, B, D

✗ 2. A, D, C, B

✗ 3. B, C, D, A

✗ 4. A, B, C, D

Question ID : **630680530299**
Option 1 ID : **6306802073098**
Option 2 ID : **6306802073100**
Option 3 ID : **6306802073099**
Option 4 ID : **6306802073097**
Status : **Marked For Review**
Chosen Option : **4**

Q.3 The contrapositive of the statement 'if Mumbai is the capital of Maharashtra, then Mumbai is in India' is:

Ans ✗ 1.
if Mumbai is the capital of Maharashtra, then Mumbai is not in India.

✓ 2.
if Mumbai is not in India, then Mumbai is not the capital of Maharashtra.

✗ 3.
if Mumbai is in India, then Mumbai is the capital of Maharashtra.

✗ 4.
if Mumbai is not the capital of Maharashtra, then Mumbai is not the capital of India.

Question ID : **630680530253**
Option 1 ID : **6306802072918**
Option 2 ID : **6306802072920**
Option 3 ID : **6306802072919**
Option 4 ID : **6306802072917**
Status : **Answered**
Chosen Option : **2**

Q.4 A physical quantity Z is related to four observables a, b, c and d as follows: $Z = [a^{\frac{1}{4}} b^{\frac{1}{2}}]/[cd^{\frac{3}{2}}]$. The percentage errors of measurement in a, b, c and d are 4%, 3%, 1% and 2%, respectively. The percentage error in the quantity Z is:

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

Question ID : **630680530303**
Option 1 ID : **6306802073116**
Option 2 ID : **6306802073113**
Option 3 ID : **6306802073115**
Option 4 ID : **6306802073114**
Status : **Marked For Review**
Chosen Option : **1**

Q.5 Suppose a prism is made of a glass, whose refractive index is $\sqrt{2}$ and angle of prism is $90°$. The angle of minimum deviation is:

Ans
- ✗ 1. $60°$
- ✗ 2. $30°$
- ✗ 3. $45°$
- ✔ 4. $90°$

Question ID : **630680530294**
Option 1 ID : **6306802073078**
Option 2 ID : **6306802073080**
Option 3 ID : **6306802073077**
Option 4 ID : **6306802073079**
Status : **Answered**
Chosen Option : **4**

Q.6 If $|x-4|/(x-4) \geq 0$, then:

Ans
- ✔ 1. $x \in (4, \infty)$
- ✗ 2. $x \in [4, \infty)$
- ✗ 3. $x \in (-\infty, 4)$
- ✗ 4. $x \in (-\infty, 4]$

Question ID : **630680530248**
Option 1 ID : **6306802072899**
Option 2 ID : **6306802072900**
Option 3 ID : **6306802072898**
Option 4 ID : **6306802072897**
Status : **Answered**
Chosen Option : **1**

Q.7 Suppose the heart of Raman Babu beats 75 times in a minute. The period of the heart is:

Ans ✔ 1. 0.80 s

✘ 2. 0.70 s

✘ 3. 0.75 s

✘ 4. 0.85 s

Question ID : **630680530295**
Option 1 ID : **6306802073083**
Option 2 ID : **6306802073081**
Option 3 ID : **6306802073082**
Option 4 ID : **6306802073084**
Status : **Answered**
Chosen Option : **1**

Q.8 If x satisfies, $|x - 2| + |x - 4| + |x - 9| < 15$, then:

Ans ✘ 1. $0 \geq x \ or \ x \geq 10$

✘ 2. $0 \leq x \leq 10$

✘ 3. $0 \geq x \ or \ x \leq 10$

✔ 4. $0 < x < 10$

Question ID : **630680530249**
Option 1 ID : **6306802072903**
Option 2 ID : **6306802072901**
Option 3 ID : **6306802072902**
Option 4 ID : **6306802072904**
Status : **Answered**
Chosen Option : **4**

Q.9 Infrared waves are produced by:

Ans ✘ 1. special vacuum tubes

✘ 2. accelerated motion of charges in conducting wire

✘ 3. special lamps

✔ 4. hot bodies and molecules

Question ID : **630680530280**
Option 1 ID : **6306802073023**
Option 2 ID : **6306802073021**
Option 3 ID : **6306802073024**
Option 4 ID : **6306802073022**
Status : **Answered**
Chosen Option : **4**

Q.10

The order and degree of the differential equation $\sqrt{\dfrac{dy}{dx}\sqrt{\dfrac{d^3y}{dx^3}}} = \sqrt{5}$ is:

Ans
- ✗ 1. 3, 2
- ✗ 2. 3, 6
- ✗ 3. 3, 3
- ✔ 4. 3, 1

Question ID : **630680530245**
Option 1 ID : **6306802072886**
Option 2 ID : **6306802072888**
Option 3 ID : **6306802072887**
Option 4 ID : **6306802072885**
Status : **Answered**
Chosen Option : **4**

Q.11 If the roots of the polynomial equation $(b - c)\,x^2 + (c - a)\,x + (a - b) = 0$ are not equal, then:

Ans
- ✔ 1. $2b \neq c + a$
- ✗ 2. $2b > c + a$
- ✗ 3. $2b = c + a$
- ✗ 4. $2b < c + a$

Question ID : **630680530259**
Option 1 ID : **6306802072941**
Option 2 ID : **6306802072942**
Option 3 ID : **6306802072944**
Option 4 ID : **6306802072943**
Status : **Answered**
Chosen Option : **4**

Q.12 Suppose a canon of mass 600 kg fires a cannonball of mass 5 kg with a speed of 40 m/s. The recoil speed of the canon is:

Ans
- ✗ 1. $\dfrac{1}{5}$ m/s
- ✗ 2. $\dfrac{1}{2}$ m/s
- ✗ 3. $\dfrac{1}{4}$ m/s
- ✔ 4. $\dfrac{1}{3}$ m/s

Question ID : **630680530290**
Option 1 ID : **6306802073064**
Option 2 ID : **6306802073061**
Option 3 ID : **6306802073063**
Option 4 ID : **6306802073062**
Status : **Answered**
Chosen Option : **4**

Q.13 In a group of 95 people, 59 like tea, 33 like coffee and 17 people likes both tea and coffee. How many people like neither tea nor coffee?

Ans ✗ 1. 59

✓ 2. 20

✗ 3. 33

✗ 4. 95

Question ID : **630680530265**
Option 1 ID : **6306802072967**
Option 2 ID : **6306802072965**
Option 3 ID : **6306802072966**
Option 4 ID : **6306802072968**
Status : **Answered**
Chosen Option : **2**

Q.14 Suppose a particle trapped in a circular groove of radius 10 cm moves along the groove steadily and completes 14 revolutions in 50 s. The linear speed of the particle is:

Ans ✗ 1. 13.2 cm/s

✗ 2. 8.8 cm/s

✓ 3. 17.6 cm/s

✗ 4. 4.4 cm/s

Question ID : **630680530285**
Option 1 ID : **6306802073043**
Option 2 ID : **6306802073042**
Option 3 ID : **6306802073044**
Option 4 ID : **6306802073041**
Status : **Answered**
Chosen Option : **3**

Q.15 The range of the function $f(x) = \sqrt{(36 - x^2)}$ is:

Ans ✗ 1. $(-6, 6)$

✗ 2. $(0, 6)$

✓ 3. $[0, 6]$

✗ 4. $[1, 6]$

Question ID : **630680530260**
Option 1 ID : **6306802072947**
Option 2 ID : **6306802072945**
Option 3 ID : **6306802072946**
Option 4 ID : **6306802072948**
Status : **Answered**
Chosen Option : **3**

Q.16 In the following equation x(t) = A exp(-Bt), x(t) and t represent displacement and time, respectively. To make the given equation dimensionally consistent, the dimensions of A and B must be:

Ans ✗ 1. $[L^{-1}]$ and $[T^{-1}]$, respectively

✓ 2. $[L^{+1}]$ and $[T^{-1}]$, respectively

✗ 3. $[L^{-2}]$ and $[T^{1}]$, respectively

✗ 4. $[L^{0}]$ and $[T^{-1}]$, respectively

Question ID : **630680530301**
Option 1 ID : **6306802073105**
Option 2 ID : **6306802073106**
Option 3 ID : **6306802073107**
Option 4 ID : **6306802073108**
Status : **Answered**
Chosen Option : **2**

Q.17 Suppose a body is executing oscillatory motion. The displacement $x(t)$ of the body from the origin as a function of time t is given by $x(t) = 10[\cos(\omega t) + \sin(2\omega t) + \cos(6\omega t)]$. The period of the body T is given by:

Ans ✓ 1. $T = \dfrac{2\pi}{\omega}$

✗ 2. $T = \dfrac{\pi}{\omega}$

✗ 3. $T = \dfrac{\pi}{3\omega}$

✗ 4. $T = \dfrac{\pi}{2\omega}$

Question ID : **630680530296**
Option 1 ID : **6306802073087**
Option 2 ID : **6306802073088**
Option 3 ID : **6306802073085**
Option 4 ID : **6306802073086**
Status : **Answered**
Chosen Option : **1**

Q.18 If A B and C are symmetric matrices of same order, then $ABC - CBA$ is a:

Ans ✗ 1. identity matrix

✗ 2. symmetric matrix

✓ 3. skew-symmetric matrix

✗ 4. zero matrix

Question ID : **630680530255**
Option 1 ID : **6306802072928**
Option 2 ID : **6306802072926**
Option 3 ID : **6306802072927**
Option 4 ID : **6306802072925**
Status : **Answered**
Chosen Option : **3**

Q.19 For what value of λ, the function $f(x) = \begin{cases} 12x + 3\lambda, x \neq 1 \\ 0, x = 1 \end{cases}$ is continuous at $x = 1$?

Ans

✗ 1. 3

✓ 2. −4

✗ 3. −3

✗ 4. 4

Question ID : **630680530238**
Option 1 ID : **6306802072860**
Option 2 ID : **6306802072857**
Option 3 ID : **6306802072859**
Option 4 ID : **6306802072858**
Status : **Answered**
Chosen Option : **2**

Q.20 The shortest wavelength in the Paschen series in terms of Rydberg constant R is:

Ans

✗ 1. $\dfrac{1}{R}$

✗ 2. $\dfrac{16}{R}$

✓ 3. $\dfrac{9}{R}$

✗ 4. $\dfrac{4}{R}$

Question ID : **630680530293**
Option 1 ID : **6306802073076**
Option 2 ID : **6306802073075**
Option 3 ID : **6306802073074**
Option 4 ID : **6306802073073**
Status : **Answered**
Chosen Option : **3**

Q.21 $\int_1^2 \dfrac{1}{x\sqrt{x^2 - 1}} dx = ?$

Ans

✗ 1. $\dfrac{\pi}{6}$

✗ 2. $\dfrac{\pi}{5}$

✗ 3. $\dfrac{\pi}{2}$

✓ 4. $\dfrac{\pi}{3}$

Question ID : **630680530239**
Option 1 ID : **6306802072864**
Option 2 ID : **6306802072863**
Option 3 ID : **6306802072862**
Option 4 ID : **6306802072861**
Status : **Answered**
Chosen Option : **4**

Q.22 If $P_r^{10} : P_{r+1}^{12} = 1 : 22$, then the value of r is:

Ans
✗ 1. 3
✔ 2. 5
✗ 3. 4
✗ 4. 2

Question ID : **630680530256**
Option 1 ID : **6306802072930**
Option 2 ID : **6306802072932**
Option 3 ID : **6306802072931**
Option 4 ID : **6306802072929**
Status : **Answered**
Chosen Option : **2**

Q.23 If $A = \{5, 8, 9, 12\}$, then the total number of distinct relations that can be defined over A is:

Ans
✗ 1. 8
✗ 2. 4
✗ 3. 2^8
✔ 4. 2^{16}

Question ID : **630680530262**
Option 1 ID : **6306802072956**
Option 2 ID : **6306802072953**
Option 3 ID : **6306802072954**
Option 4 ID : **6306802072955**
Status : **Answered**
Chosen Option : **4**

Q.24 The area between the curves $y = 3x^2 - x - 3$ and $y = -2x^2 + 4x + 7$ is (in sq. units):

Ans
✗ 1. $\dfrac{35}{2}$

✔ 2. $\dfrac{45}{2}$

✗ 3. $3\left(e^{cos2} + sin^2 2\right)$

✗ 4. $\dfrac{55}{2}$

Question ID : **630680530241**
Option 1 ID : **6306802072871**
Option 2 ID : **6306802072869**
Option 3 ID : **6306802072872**
Option 4 ID : **6306802072870**
Status : **Answered**
Chosen Option : **2**

Q.25 The polar form of the complex number $(i^{21})^3$ is:

Ans

✗ 1. $\cos\dfrac{3\pi}{2} - i\sin\dfrac{3\pi}{2}$

✔ 2. $\cos\dfrac{\pi}{2} - i\sin\dfrac{\pi}{2}$

✗ 3. $2\cos\dfrac{\pi}{2} - 3i\sin\dfrac{\pi}{2}$

✗ 4. $\cos\dfrac{\pi}{2} + i\sin\dfrac{\pi}{2}$

Question ID : 630680530242
Option 1 ID : 6306802072874
Option 2 ID : 6306802072875
Option 3 ID : 6306802072876
Option 4 ID : 6306802072873
Status : **Answered**
Chosen Option : **2**

Q.26 The distance travelled by a car is given by the following equation $x(t) = A + Bt + Ct^2$. Then the dimensions of A, B and C are:

Ans

✗ 1. $[L^{-1}]$, $[L^2T^{-1}]$ and $[L^{-2}T^{-2}]$ respectively

✗ 2. $[L^1]$, $[L^{-2}T^{-1}]$ and $[L^{-3}T^{-2}]$ respectively

✔ 3. $[L^1]$, $[L^1T^{-1}]$ and $[L^1T^{-2}]$ respectively

✗ 4. $[L^{-1}]$, $[L^1T^{-1}]$ and $[L^{-1}T^{-2}]$ respectively

Question ID : 630680530302
Option 1 ID : 6306802073110
Option 2 ID : 6306802073112
Option 3 ID : 6306802073111
Option 4 ID : 6306802073109
Status : **Answered**
Chosen Option : **3**

Q.27 Suppose n mole ideal gas goes isobarically (at Pressure P) from its initial state (T1, V1) to the final state (T2, V2). The work done during the process is: (R = Gas constant)

Ans

✗ 1. $W = nR(V_1 - V_2)$

✗ 2. $W = nR(T_1 - T_2)$

✗ 3. $W = nR(V_2 - V_1)$

✔ 4. $W = nR(T_2 - T_1)$

Question ID : 630680530300
Option 1 ID : 6306802073101
Option 2 ID : 6306802073102
Option 3 ID : 6306802073104
Option 4 ID : 6306802073103
Status : **Answered**
Chosen Option : **3**

Q.28 In Rutherford's scattering experiment, the alpha particles are scattered from a:

Ans
- ✔ 1. thin gold foil
- ✘ 2. thin aluminum foil
- ✘ 3. thin iron foil
- ✘ 4. thin silver foil

Question ID : **630680530292**
Option 1 ID : **6306802073070**
Option 2 ID : **6306802073069**
Option 3 ID : **6306802073072**
Option 4 ID : **6306802073071**
Status : **Answered**
Chosen Option : **1**

Q.29 Suppose a block of mass 2 kg is attached with a spring of spring constant 800 N/m. If the block is displaced to a distance 15 cm from its equilibrium position and released, it executes a simple harmonic motion. The maximum potential energy of the block is:

Ans
- ✘ 1. 12.0 J
- ✔ 2. 9.0 J
- ✘ 3. 3.0 J
- ✘ 4. 6.0 J

Question ID : **630680530297**
Option 1 ID : **6306802073092**
Option 2 ID : **6306802073091**
Option 3 ID : **6306802073089**
Option 4 ID : **6306802073090**
Status : **Answered**
Chosen Option : **2**

Q.30 The depletion of ozone layers in the atmosphere is of international concern because:

Ans
- ✔ 1. they protect us from UV rays
- ✘ 2. they protect us from gamma rays
- ✘ 3. they protect us from X-rays
- ✘ 4. they protect us from infrared waves

Question ID : **630680530281**
Option 1 ID : **6306802073026**
Option 2 ID : **6306802073028**
Option 3 ID : **6306802073027**
Option 4 ID : **6306802073025**
Status : **Answered**
Chosen Option : **1**

Q.31 The common tangent of the two touching circles $x^2 + y^2 + 6x - 2y + 7 = 0$ and $x^2 + y^2 - 4x + 7y - 9 = 0$ is:

Ans
✗ 1. $10x + 9y - 16 = 0$

✗ 2. $10x + 9y + 16 = 0$

✗ 3. $10x - 9y - 16 = 0$

✔ 4. $10x - 9y + 16 = 0$

Question ID : **630680530244**
Option 1 ID : **6306802072884**
Option 2 ID : **6306802072882**
Option 3 ID : **6306802072881**
Option 4 ID : **6306802072883**
Status : **Answered**
Chosen Option : **4**

Q.32 Suppose a plane electromagnetic wave of frequency 10 MHz travels in free space along the y-direction. At a particular point in space and time, $E = 9.9\,\hat{x}$ V/m. $\vec{B}$ at this point is given by:

Ans
✗ 1. $\vec{B} = 3.3 \times 10^{-6}\hat{y}\,\text{T}$

✗ 2. $\vec{B} = 3.3 \times 10^{-6}\hat{x}\,\text{T}$

✔ 3. $\vec{B} = 3.3 \times 10^{-8}\hat{z}\,\text{T}$

✗ 4. $\vec{B} = 3.3 \times 10^{-8}\hat{x}\,\text{T}$

Question ID : **630680530282**
Option 1 ID : **6306802073029**
Option 2 ID : **6306802073032**
Option 3 ID : **6306802073031**
Option 4 ID : **6306802073030**
Status : **Answered**
Chosen Option : **3**

Q.33 Starting from rest, if a system undergoes a one-dimensional motion with acceleration proportional to t^2, where t is the elapsed time, the power delivered to it at time t is proportional to:

Ans
✗ 1. t^2

✗ 2. t^3

✔ 3. t^5

✗ 4. t^4

Question ID : **630680530305**
Option 1 ID : **6306802073121**
Option 2 ID : **6306802073122**
Option 3 ID : **6306802073124**
Option 4 ID : **6306802073123**
Status : **Answered**
Chosen Option : **2**

Q.34 A block of mass 0.4 kg is moving with a velocity of 6 m/s and it makes a head-on collision with a stationary block of mass 0.8 kg. After the collision, both the blocks move together. The final velocity with which they move will be:

Ans
✗ 1. 6 m/s

✗ 2. 0

✓ 3. 2 m/s

✗ 4. 4 m/s

Question ID : 630680530306
Option 1 ID : 6306802073127
Option 2 ID : 6306802073128
Option 3 ID : 6306802073125
Option 4 ID : 6306802073126
Status : **Answered**
Chosen Option : **3**

Q.35 The function $f: \mathbb{R} \to \mathbb{R}$ defined by $f(x) = sinx$ is:

Ans
✗ 1. injective but not surjective

✓ 2. neither injective nor surjective

✗ 3. not a relation

✗ 4. surjective but not injective

Question ID : 630680530261
Option 1 ID : 6306802072949
Option 2 ID : 6306802072951
Option 3 ID : 6306802072952
Option 4 ID : 6306802072950
Status : **Answered**
Chosen Option : **2**

Q.36 What is the common difference of an arithmetic progression in which $a_{22} - a_{16} = -54$?

Ans
✗ 1. −6

✗ 2. 9

✗ 3. 6

✓ 4. −9

Question ID : 630680530263
Option 1 ID : 6306802072958
Option 2 ID : 6306802072960
Option 3 ID : 6306802072959
Option 4 ID : 6306802072957
Status : **Answered**
Chosen Option : **4**

Q.37 The system of linear equations $x + 2y + 2z = 1, 2x + 2y + 3z = 3, x - y + 3z = 5$ is:

Ans ✗ 1. inconsistent

✔ 2. consistent with a unique solution

✗ 3. consistent with an infinite solution

✗ 4. may or may not be consistent

Question ID : **630680530254**
Option 1 ID : **6306802072922**
Option 2 ID : **6306802072921**
Option 3 ID : **6306802072924**
Option 4 ID : **6306802072923**
Status : **Answered**
Chosen Option : **2**

Q.38 The solution of the differential equation $(x + 2y^3)\frac{dy}{dx} = y$ is:

Ans ✗ 1. $\frac{x}{y} = -y^2 + c$

✔ 2. $\frac{x}{y} - y^2 = c$

✗ 3. $x = y^2 + c$

✗ 4. $y = xy^2 + c$

Question ID : **630680530246**
Option 1 ID : **6306802072889**
Option 2 ID : **6306802072890**
Option 3 ID : **6306802072891**
Option 4 ID : **6306802072892**
Status : **Answered**
Chosen Option : **1**

Q.39 The position-time graph of an object moving in uniform motion is:

Ans ✗ 1. a straight line parallel to the position axis

✔ 2.
a straight line passing through origin with an angle 45 ° with the time axis

✗ 3.
a straight line passing through origin with an angle 30 ° with the time axis

✗ 4. a straight line parallel to the time axis

Question ID : **630680530283**
Option 1 ID : **6306802073034**
Option 2 ID : **6306802073035**
Option 3 ID : **6306802073036**
Option 4 ID : **6306802073033**
Status : **Answered**
Chosen Option : **2**

Q.40 If the current reaches its maximum value I_m at time $t = \frac{T}{4}$ for an LC oscillator (T = time period of the oscillator), then the energy stored in the oscillator at that particular instant is:

Ans

✗ 1. fully mechanical energy

✗ 2. partially electrical and partially magnetic energy

✗ 3. fully electrical energy

✔ 4. fully magnetic energy

Question ID : **630680530278**
Option 1 ID : **6306802073016**
Option 2 ID : **6306802073015**
Option 3 ID : **6306802073013**
Option 4 ID : **6306802073014**
Status : **Answered**
Chosen Option : **3**

Q.41 Consider the following Linear Programming problem:

Maximise $Z = -x_1 + 2x_2$

subject to the constraints

$x_1 - x_2 \leq -1,$
$-0.5x_1 + x_2 \leq 2,$

$x_1, x_2 \geq 0$.

Then the above problem has:

Ans

✗ 1. *no optimal solution*

✔ 2.
multiple optimal solutions Max $Z = 4$ for $x_1 = 0, x_2 = 2$ and $x_1 = 2, x_2 = 3$

✗ 3. unique optimal solution Max $Z = 4$ for $x_1 = 0, x_2 = 2$

✗ 4. unique optimal solutions Max $Z = 2$ for $x_1 = 0, x_2 = 1$

Question ID : **630680530252**
Option 1 ID : **6306802072915**
Option 2 ID : **6306802072914**
Option 3 ID : **6306802072913**
Option 4 ID : **6306802072916**
Status : **Answered**
Chosen Option : **1**

Q.42 Consider an alternating current circuit consisting of a resistance R, an inductor of inductance L and a capacitor with capacitance C in series and driven by a voltage of amplitude V_m, such that the current flowing through the circuit is maximum. The current in the circuit is:

Ans

✗ 1. $\dfrac{V_m}{L}$

✗ 2. $\dfrac{V_m}{\sqrt{LC}}$

✔ 3. $\dfrac{V_m}{R}$

✗ 4. $\dfrac{V_m}{C}$

Question ID : **630680530277**
Option 1 ID : **6306802073011**
Option 2 ID : **6306802073012**
Option 3 ID : **6306802073010**
Option 4 ID : **6306802073009**
Status : **Answered**
Chosen Option : **3**

Q.43 The distances traversed during equal intervals of time by a body falling from rest stand to one another in the same ratio as the:

Ans

✗ 1. even numbers starting with zero

✗ 2. fractional numbers starting with 1/2

✗ 3. fractional numbers starting with 0

✔ 4. odd numbers starting with unity

Question ID : **630680530286**
Option 1 ID : **6306802073045**
Option 2 ID : **6306802073047**
Option 3 ID : **6306802073048**
Option 4 ID : **6306802073046**
Status : **Answered**
Chosen Option : **4**

Q.44 An astronaut suddenly gets separated from his small spaceship. If the spaceship is accelerating in interstellar space at a constant rate of 60 m/s^2 and there are no nearby stars to exert gravitational force on the astronaut, then the acceleration of the astronaut after the instant he is outside the spaceship is:

Ans

✗ 1. 30 m/s^2

✗ 2. 60 m/s^2

✔ 3. 0 m/s^2

✗ 4. 20 m/s^2

Question ID : **630680530289**
Option 1 ID : **6306802073057**
Option 2 ID : **6306802073058**
Option 3 ID : **6306802073059**
Option 4 ID : **6306802073060**
Status : **Answered**
Chosen Option : **3**

Q.45 A car is moving with uniform motion. The velocity time graph for the car will be:

Ans   ✗ 1.
a straight line passing through the origin with an angle 45° with x-axis

   ✗ 2.
a straight line passing through the origin with an angle 30° with x-axis

   ✗ 3. a straight line parallel to y-axis

   ✔ 4. a straight line parallel to x-axis

Question ID : **630680530287**
Option 1 ID : **6306802073050**
Option 2 ID : **6306802073049**
Option 3 ID : **6306802073052**
Option 4 ID : **6306802073051**
Status : **Answered**
Chosen Option : **4**

Q.46 Consider the following Linear Programming problem:

Maximise $Z = 40x_1 + 50x_2$

subject to the constraints

$x_1 + 2x_2 \leq 40,$
$4x_1 + 3x_2 \leq 120,$

$x_1, x_2 \geq 0.$

Then the optimal solution is:

Ans   ✗ 1. $Z = 1600$
$for\ x_1 = 30, x_2 = 8$

   ✗ 2. $Z = 1460$
$for\ x_1 = 24, x_2 = 10$

   ✔ 3. $Z = 1360$
$for\ x_1 = 24, x_2 = 8$

   ✗ 4. $Z = 1360$
$for\ x_1 = 19, x_2 = 12$

Question ID : **630680530251**
Option 1 ID : **6306802072910**
Option 2 ID : **6306802072911**
Option 3 ID : **6306802072909**
Option 4 ID : **6306802072912**
Status : **Answered**
Chosen Option : **3**

Q.47 Suppose A and B are two independent events such that P(B) = 0.4 and P(AUB) = 0.8. The value of P(A) is:

Ans

✗ 1. $\dfrac{3}{4}$

✗ 2. $\dfrac{1}{2}$

✗ 3. $\dfrac{1}{3}$

✔ 4. $\dfrac{2}{3}$

Question ID : **630680530258**
Option 1 ID : **6306802072940**
Option 2 ID : **6306802072937**
Option 3 ID : **6306802072939**
Option 4 ID : **6306802072938**
Status : **Answered**
Chosen Option : **4**

Q.48 A particle is moving in a plane and its position is given by $\vec{r} = 5t^2\hat{\imath} + 4t\hat{\jmath}$, where t is in seconds and r is in meters. The velocity of the particle at time t = 2 s is:

Ans

✗ 1. $10\,\hat{\imath} + 8\hat{\jmath}$

✔ 2. $20\,\hat{\imath} + 4\hat{\jmath}$

✗ 3. $10\,\hat{\imath} - 8\,\hat{\jmath}$

✗ 4. $20\,\hat{\imath} - 4\,\hat{\jmath}$

Question ID : **630680530284**
Option 1 ID : **6306802073038**
Option 2 ID : **6306802073040**
Option 3 ID : **6306802073037**
Option 4 ID : **6306802073039**
Status : **Answered**
Chosen Option : **2**

Q.49 Consider a pure inductor of 20 mH. It is connected to an alternating source of 240 V with frequency 100 Hz. The inductive reactance and RMS current in the circuit are _____ and _____, respectively (Consider $\pi \sim 3.0$) .

Ans

✗ 1. $24\,\Omega$; $10\,A$

✗ 2. $48\,\Omega$; $5\,A$

✗ 3. $6\,\Omega$; $20\,A$

✔ 4. $12\,\Omega$; $20\,A$

Question ID : **630680530279**
Option 1 ID : **6306802073018**
Option 2 ID : **6306802073020**
Option 3 ID : **6306802073017**
Option 4 ID : **6306802073019**
Status : **Answered**
Chosen Option : **4**

Q.50 If ω is an imaginary cube root of unity, then $(1 + \omega - \omega^2)^5$ equals to:

Ans   ✗ 1. -32

     ✗ 2. $32\omega^2$

     ✗ 3. 32

     ✔ 4. -32ω

Question ID : 630680530243
Option 1 ID : 6306802072879
Option 2 ID : 6306802072877
Option 3 ID : 6306802072878
Option 4 ID : 6306802072880
Status : **Answered**
Chosen Option : **4**

Q.51 Consider the following function

$$f(x) = -\frac{3}{4}x^4 - 8x^3 - \frac{45}{2}x^2 + 105.$$

Select the correct result from the following.

Ans   ✔ 1. The point x = 0 is a point of local maxima.

     ✗ 2. The point x = –5 is a point of local minima.

     ✗ 3. The point x = –3 is a point of local maxima.

     ✗ 4. The point x = 0 is a point of local minima.

Question ID : 630680530240
Option 1 ID : 6306802072865
Option 2 ID : 6306802072867
Option 3 ID : 6306802072866
Option 4 ID : 6306802072868
Status : **Answered**
Chosen Option : **1**

Q.52 The value of the limit $\lim\limits_{x \to 0} \frac{\sin 3x - 3 \sin x}{x^3}$ is:

Ans   ✗ 1. 3

     ✗ 2. 4

     ✔ 3. –4

     ✗ 4. –3

Question ID : 630680530237
Option 1 ID : 6306802072855
Option 2 ID : 6306802072856
Option 3 ID : 6306802072854
Option 4 ID : 6306802072853
Status : **Answered**
Chosen Option : **3**

Q.53 While solving a Linear Programming problem, infeasibility may be removed by:

Ans ✔ 1. removing a constraint

✘ 2. removing a variable

✘ 3. adding another variable

✘ 4. adding another constraint

Question ID : **630680530250**
Option 1 ID : **6306802072907**
Option 2 ID : **6306802072908**
Option 3 ID : **6306802072906**
Option 4 ID : **6306802072905**
Status : **Answered**
Chosen Option : **4**

Q.54 If $f(x) = x - \frac{1}{x}$, then the value of f(2) + f($\frac{1}{2}$) is equal to:

Ans ✘ 1. 1

✘ 2. 3

✔ 3. 0

✘ 4. −1

Question ID : **630680530264**
Option 1 ID : **6306802072963**
Option 2 ID : **6306802072964**
Option 3 ID : **6306802072962**
Option 4 ID : **6306802072961**
Status : **Answered**
Chosen Option : **3**

Q.55 A block is kept on an inclined plane of angle 30°. The coefficient of maximum static friction between the block and the inclined plane is $\frac{1}{\sqrt{3}}$. The acceleration of the block will be (g = 9.8 m/s²):

Ans ✘ 1. 4.9 m/s²

✘ 2. 2.45 m/s²

✘ 3. 9.8 m/s²

✔ 4. 0 m/s²

Question ID : **630680530291**
Option 1 ID : **6306802073067**
Option 2 ID : **6306802073068**
Option 3 ID : **6306802073066**
Option 4 ID : **6306802073065**
Status : **Answered**
Chosen Option : **4**

Q.56 Which of the following pairs correctly describe(s) the thermodynamic processes?

Thermodynamic process	Thermodynamic variable remains constant during the process
A. Isothermal expansion	Temperature T
B. Isobaric process	Pressure P
C. Isochoric process	Internal energy U
D. Adiabatic process	Volume V

Ans
- ✗ 1. Only A, B and C
- ✗ 2. A, B, C and D
- ✗ 3. Only A
- ✔ 4. Only A and B

Question ID : **630680530298**
Option 1 ID : **6306802073095**
Option 2 ID : **6306802073096**
Option 3 ID : **6306802073093**
Option 4 ID : **6306802073094**
Status : **Answered**
Chosen Option : **4**

Q.57 A value of x satisfying $85x \equiv 45 \pmod{15}$ is:

Ans
- ✗ 1. 10
- ✗ 2. 35
- ✗ 3. 25
- ✔ 4. 15

Question ID : **630680530247**
Option 1 ID : **6306802072893**
Option 2 ID : **6306802072896**
Option 3 ID : **6306802072895**
Option 4 ID : **6306802072894**
Status : **Answered**
Chosen Option : **4**

Q.58 A biker comes to a sudden stop in 50 m. During this process, the force experienced by the bike due to the road is 200 N and this force directly opposes the motion of the bike. The work done by the road on the bike is:

Ans
- ✗ 1. 5000 J
- ✔ 2. −10000 J
- ✗ 3. 10000 J
- ✗ 4. −5000 J

Question ID : **630680530304**
Option 1 ID : **6306802073119**
Option 2 ID : **6306802073118**
Option 3 ID : **6306802073117**
Option 4 ID : **6306802073120**
Status : **Answered**
Chosen Option : **2**

Q.59 The action and reaction forces in the third law:

Ans   ✗ 1.   action acts before reaction force

     ✗ 2.   reaction force acts before action force

     ✗ 3.

either action or reaction force may come into play before the other

     ✓ 4.   act simultaneously

Question ID : **630680530288**
Option 1 ID : **6306802073054**
Option 2 ID : **6306802073056**
Option 3 ID : **6306802073055**
Option 4 ID : **6306802073053**
Status : **Answered**
Chosen Option : **4**

Q.60 Rahul was asked to prove a statement P(n) by the principle of mathematical induction. He proved that P(k + 1) is true whenever P(k) is true for all natural numbers k and also that P(9) is true. Then P(n) is true:

Ans   ✗ 1.   for all $n > 8$

     ✗ 2.   for all $n < 9$

     ✓ 3.   for all $n \geq 9$

     ✗ 4.   for all natural numbers n

Question ID : **630680530257**
Option 1 ID : **6306802072935**
Option 2 ID : **6306802072933**
Option 3 ID : **6306802072934**
Option 4 ID : **6306802072936**
Status : **Answered**
Chosen Option : **4**