

JEE 2023 Session-1 24th Jan to 1st Feb 2023

Application No	
Candidate Name	
Roll No	
Test Date	31/01/2023
Test Time	3:00 PM - 6:00 PM
Subject	B TECH

Section : Physics Section A

Q.1 A hypothetical gas expands adiabatically such that its volume changes from 08 litres to 27 litres. If the ratio of final pressure of the gas to initial pressure of the gas is $\frac{16}{81}$. Then the ratio of $\frac{C_p}{C_v}$ will be.

- Options**
1. $\frac{4}{3}$
 2. $\frac{3}{1}$
 3. $\frac{3}{2}$
 4. $\frac{1}{2}$

Question Type : **MCQ**

Question ID : **7155051723**

Option 1 ID : **7155055180**

Option 2 ID : **7155055181**

Option 3 ID : **7155055179**

Option 4 ID : **7155055182**

Status : **Answered**

Chosen Option : **1**

Q.2 A body weight W , is projected vertically upwards from earth's surface to reach a height above the earth which is equal to nine times the radius of earth. The weight of the body at that height will be :

- Options**
1. $\frac{W}{91}$
 2. $\frac{W}{9}$
 3. $\frac{W}{3}$
 4. $\frac{W}{100}$

Question Type : **MCQ**

Question ID : **7155051725**

Option 1 ID : **7155055189**

Option 2 ID : **7155055188**

Option 3 ID : **7155055187**

Option 4 ID : **7155055190**

Status : **Answered**

Chosen Option : **3**

Q.3 Match List I with List II

LIST I		LIST II	
A.	Angular momentum	I.	$[ML^2T^{-2}]$
B.	Torque	II.	$[ML^{-2}T^{-2}]$
C.	Stress	III.	$[ML^2T^{-1}]$
D.	Pressure gradient	IV.	$[ML^{-1}T^{-2}]$

Choose the correct answer from the options given below:

- Options
1. A - IV, B - II, C - I, D - III
 2. A - II, B - III, C - IV, D - I
 3. A - III, B - I, C - IV, D - II
 4. A - I, B - IV, C - III, D - II

Question Type : MCQ

Question ID : 7155051728

Option 1 ID : 7155055199

Option 2 ID : 7155055201

Option 3 ID : 7155055200

Option 4 ID : 7155055202

Status : Answered

Chosen Option : 1

Q.4 Given below are two statements :

Statement I : In a typical transistor, all three regions emitter, base and collector have same doping level.

Statement II : In a transistor, collector is the thickest and base is the thinnest segment.

In the light of the above statements, choose the **most appropriate** answer from the options given below.

- Options
1. **Statement I** is correct but **Statement II** is incorrect
 2. Both **Statement I** and **Statement II** are incorrect
 3. **Statement I** is incorrect but **Statement II** is correct
 4. Both **Statement I** and **Statement II** are correct

Question Type : MCQ

Question ID : 7155051712

Option 1 ID : 7155055137

Option 2 ID : 7155055136

Option 3 ID : 7155055138

Option 4 ID : 7155055135

Status : Answered

Chosen Option : 1

Q.5 Under the same load, wire A having length 5.0 m and cross section $2.5 \times 10^{-5} \text{ m}^2$ stretches uniformly by the same amount as another wire B of length 6.0 m and a cross section of $3.0 \times 10^{-5} \text{ m}^2$ stretches. The ratio of the Young's modulus of wire A to that of wire B will be :

- Options**
1. 1 : 1
 2. 1 : 4
 3. 1 : 10
 4. 1 : 2

Question Type : **MCQ**

Question ID : **7155051724**

Option 1 ID : **7155055185**

Option 2 ID : **7155055184**

Option 3 ID : **7155055186**

Option 4 ID : **7155055183**

Status : **Answered**

Chosen Option : **3**

Q.6 A body of mass 10 kg is moving with an initial speed of 20 m/s. The body stops after 5 s due to friction between body and the floor. The value of the coefficient of friction is: (Take acceleration due to gravity $g = 10 \text{ ms}^{-2}$)

- Options**
1. 0.3
 2. 0.2
 3. 0.4
 4. 0.5

Question Type : **MCQ**

Question ID : **7155051726**

Option 1 ID : **7155055194**

Option 2 ID : **7155055191**

Option 3 ID : **7155055193**

Option 4 ID : **7155055192**

Status : **Answered**

Chosen Option : **2**

Q.7 Match List I with List II

LIST I		LIST II	
A.	Microwaves	I.	Physiotherapy
B.	UV rays	II.	Treatment of cancer
C.	Infra-red light	III.	Lasik eye surgery
D.	X-ray	IV.	Aircraft navigation

Choose the correct answer from the options given below:

- Options**
1. A - IV, B - I, C - II, D - III
 2. A - IV, B - III, C - I, D - II
 3. A - II, B - IV, C - III, D - I
 4. A - III, B - II, C - I, D - IV

Question Type : **MCQ**

Question ID : **7155051716**

Option 1 ID : **7155055153**

Option 2 ID : **7155055152**

Option 3 ID : **7155055154**

Option 4 ID : **7155055151**

Status : **Answered**

Chosen Option : **2**

Q.8 A microscope is focused on an object at the bottom of a bucket. If liquid with refractive index $\frac{5}{3}$ is poured inside the bucket, then microscope have to be raised by 30 cm to focus the object again. The height of the liquid in the bucket is :

- Options**
1. 18 cm
 2. 75 cm
 3. 12 cm
 4. 50 cm

Question Type : **MCQ**
Question ID : **7155051715**
Option 1 ID : **7155055149**
Option 2 ID : **7155055147**
Option 3 ID : **7155055150**
Option 4 ID : **7155055148**
Status : **Not Answered**
Chosen Option : --

Q.9 The H amount of thermal energy is developed by a resistor in 10 s when a current of 4A is passed through it. If the current is increased to 16A, the thermal energy developed by the resistor in 10 s will be :

- Options**
1. 4H
 2. $\frac{H}{4}$
 3. H
 4. 16H

Question Type : **MCQ**
Question ID : **7155051719**
Option 1 ID : **7155055165**
Option 2 ID : **7155055163**
Option 3 ID : **7155055164**
Option 4 ID : **7155055166**
Status : **Answered**
Chosen Option : 1

Q.10 The radius of electron's second stationary orbit in Bohr's atom is R. The radius of 3rd orbit will be :

- Options**
1. $\frac{R}{3}$
 2. 2.25R
 3. 3R
 4. 9R

Question Type : **MCQ**
Question ID : **7155051713**
Option 1 ID : **7155055142**
Option 2 ID : **7155055140**
Option 3 ID : **7155055139**
Option 4 ID : **7155055141**
Status : **Answered**
Chosen Option : 3

Q.11 Considering a group of positive charges, which of the following statements is correct ?

Options

1. Both the net potential and the net electric field cannot be zero at a point.
2. Both the net potential and the net field can be zero at a point.
3. Net potential of the system cannot be zero at a point but net electric field can be zero at that point.
4. Net potential of the system at a point can be zero but net electric field can't be zero at that point.

Question Type : **MCQ**

Question ID : **7155051720**

Option 1 ID : **7155055169**

Option 2 ID : **7155055170**

Option 3 ID : **7155055168**

Option 4 ID : **7155055167**

Status : **Answered**

Chosen Option : **4**

Q.12 For a solid rod, the Young's modulus of elasticity is $3.2 \times 10^{11} \text{ Nm}^{-2}$ and density is $8 \times 10^3 \text{ kg m}^{-3}$. The velocity of longitudinal wave in the rod will be.

Options

1. $145.75 \times 10^3 \text{ ms}^{-1}$
2. $18.96 \times 10^3 \text{ ms}^{-1}$
3. $3.65 \times 10^3 \text{ ms}^{-1}$
4. $6.32 \times 10^3 \text{ ms}^{-1}$

Question Type : **MCQ**

Question ID : **7155051721**

Option 1 ID : **7155055172**

Option 2 ID : **7155055173**

Option 3 ID : **7155055171**

Option 4 ID : **7155055174**

Status : **Not Answered**

Chosen Option : **--**

Q.13 If the two metals A and B are exposed to radiation of wavelength 350 nm. The work functions of metals A and B are 4.8 eV and 2.2 eV. Then choose the correct option.

Options

1. Both metals A and B will emit photo-electrons
2. Metal A will not emit photo-electrons
3. Both metals A and B will not emit photo-electrons
4. Metal B will not emit photo-electrons

Question Type : **MCQ**

Question ID : **7155051714**

Option 1 ID : **7155055145**

Option 2 ID : **7155055143**

Option 3 ID : **7155055146**

Option 4 ID : **7155055144**

Status : **Answered**

Chosen Option : **3**

Q.14 A long conducting wire having a current I flowing through it, is bent into a circular coil of N turns. Then it is bent into a circular coil of n turns. The magnetic field is calculated at the centre of coils in both the cases. The ratio of the magnetic field in first case to that of second case is :

- Options
1. $N^2 : n^2$
 2. $n^2 : N^2$
 3. $N : n$
 4. $n : N$

Question Type : MCQ

Question ID : 7155051717

Option 1 ID : 7155055157

Option 2 ID : 7155055156

Option 3 ID : 7155055155

Option 4 ID : 7155055158

Status : Answered

Chosen Option : 1

Q.15 Given below are two statements :

Statement I : For transmitting a signal, size of antenna (l) should be comparable to wavelength of signal (at least $l = \frac{\lambda}{4}$ in dimension)

Statement II : In amplitude modulation, amplitude of carrier wave remains constant (unchanged).

In the light of the above statements, choose the most appropriate answer from the options given below.

- Options
1. Both **Statement I** and **Statement II** are correct
 2. **Statement I** is correct but **Statement II** is incorrect
 3. **Statement I** is incorrect but **Statement II** is correct
 4. Both **Statement I** and **Statement II** are incorrect

Question Type : MCQ

Question ID : 7155051729

Option 1 ID : 7155055203

Option 2 ID : 7155055205

Option 3 ID : 7155055206

Option 4 ID : 7155055204

Status : Answered

Chosen Option : 2

Q.16 A body is moving with constant speed, in a circle of radius 10 m. The body completes one revolution in 4 s. At the end of 3rd second, the displacement of body (in m) from its starting point is :

- Options
1. 30
 2. $10\sqrt{2}$
 3. 15π
 4. 5π

Question Type : MCQ

Question ID : 7155051727

Option 1 ID : 7155055196

Option 2 ID : 7155055195

Option 3 ID : 7155055197

Option 4 ID : 7155055198

Status : Answered

Chosen Option : 2

Q.17 An alternating voltage source $V = 260 \sin(628t)$ is connected across a pure inductor of 5 mH. Inductive reactance in the circuit is :

- Options**
1. 3.14Ω
 2. 0.318Ω
 3. 6.28Ω
 4. 0.5Ω

Question Type : **MCQ**

Question ID : **7155051711**

Option 1 ID : **7155055132**

Option 2 ID : **7155055134**

Option 3 ID : **7155055133**

Option 4 ID : **7155055131**

Status : **Not Answered**

Chosen Option : --

Q.18 The number of turns of the coil of a moving coil galvanometer is increased in order to increase current sensitivity by 50%. The percentage change in voltage sensitivity of the galvanometer will be :

- Options**
1. 75%
 2. 100%
 3. 0%
 4. 50%

Question Type : **MCQ**

Question ID : **7155051718**

Option 1 ID : **7155055161**

Option 2 ID : **7155055162**

Option 3 ID : **7155055160**

Option 4 ID : **7155055159**

Status : **Answered**

Chosen Option : 1

Q.19 A stone of mass 1 kg is tied to end of a massless string of length 1 m. If the breaking tension of the string is 400 N, then maximum linear velocity, the stone can have without breaking the string, while rotating in horizontal plane, is :

- Options**
1. 40 ms^{-1}
 2. 400 ms^{-1}
 3. 20 ms^{-1}
 4. 10 ms^{-1}

Question Type : **MCQ**

Question ID : **7155051730**

Option 1 ID : **7155055209**

Option 2 ID : **7155055210**

Option 3 ID : **7155055208**

Option 4 ID : **7155055207**

Status : **Answered**

Chosen Option : 1

Q.20 Heat energy of 735 J is given to a diatomic gas allowing the gas to expand at constant pressure. Each gas molecule rotates around an internal axis but do not oscillate. The increase in the internal energy of the gas will be :

- Options 1. 735 J
2. 441 J
3. 572 J
4. 525 J

Question Type : MCQ

Question ID : 7155051722

Option 1 ID : 7155055178

Option 2 ID : 7155055175

Option 3 ID : 7155055177

Option 4 ID : 7155055176

Status : Answered

Chosen Option : 1

Section : Physics Section B

Q.21 If the binding energy of ground state electron in a hydrogen atom is 13.6 eV , then, the energy required to remove the electron from the second excited state of Li^{2+} will be : $x \times 10^{-1}$ eV. The value of x is _____.

Given --

Answer :

Question Type : SA

Question ID : 7155051731

Status : Not Answered

Q.22 Two bodies are projected from ground with same speeds 40 ms^{-1} at two different angles with respect to horizontal. The bodies were found to have same range. If one of the body was projected at an angle of 60° , with horizontal then sum of the maximum heights, attained by the two projectiles, is _____ m. (Given $g=10 \text{ ms}^{-2}$)

Given --

Answer :

Question Type : SA

Question ID : 7155051740

Status : Not Answered

Q.23 A water heater of power 2000 W is used to heat water. The specific heat capacity of water is $4200 \text{ J kg}^{-1} \text{ K}^{-1}$. The efficiency of heater is 70%. Time required to heat 2 kg of water from 10°C to 60°C is _____ s.
(Assume that the specific heat capacity of water remains constant over the temperature range of the water).

Given --

Answer :

Question Type : SA

Question ID : 7155051737

Status : Not Answered

Q.24 A series LCR circuit consists of $R=80\Omega$, $X_L=100\Omega$, and $X_C=40\Omega$. The input voltage is $2500 \cos(100 \pi t)\text{V}$. The amplitude of current, in the circuit, is _____ A.

Given --

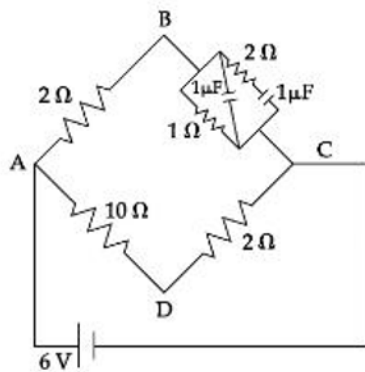
Answer :

Question Type : SA

Question ID : 7155051733

Status : Not Answered

Q.25 For the given circuit, in the steady state, $|V_B - V_D| = \underline{\hspace{2cm}}$ V.



Given --
Answer :

Question Type : SA

Question ID : 7155051734

Status : Not Answered

Q.26 Two light waves of wavelengths 800 and 600 nm are used in Young's double slit experiment to obtain interference fringes on a screen placed 7 m away from plane of slits. If the two slits are separated by 0.35 mm, then shortest distance from the central bright maximum to the point where the bright fringes of the two wavelength coincide will be $\underline{\hspace{2cm}}$ mm.

Given --
Answer :

Question Type : SA

Question ID : 7155051732

Status : Not Answered

Q.27 Two parallel plate capacitors C_1 and C_2 each having capacitance of $10 \mu\text{F}$ are individually charged by a 100 V D.C. source. Capacitor C_1 is kept connected to the source and a dielectric slab is inserted between its plates. Capacitor C_2 is disconnected from the source and then a dielectric slab is inserted in it. Afterwards the capacitor C_1 is also disconnected from the source and the two capacitors are finally connected in parallel combination. The common potential of the combination will be $\underline{\hspace{2cm}}$ V.

(Assuming Dielectric constant=10)

Given --
Answer :

Question Type : SA

Question ID : 7155051735

Status : Not Answered

Q.28 The displacement equations of two interfering waves are given by

$$y_1 = 10 \sin\left(\omega t + \frac{\pi}{3}\right) \text{ cm}, y_2 = 5 \left[\sin \omega t + \sqrt{3} \cos \omega t \right] \text{ cm respectively.}$$

The amplitude of the resultant wave is $\underline{\hspace{2cm}}$ cm.

Given --
Answer :

Question Type : SA

Question ID : 7155051736

Status : Not Answered

Q.29 A ball is dropped from a height of 20 m. If the coefficient of restitution for the collision between ball and floor is 0.5, after hitting the floor, the ball rebounds to a height of _____ m.

Given --
Answer :

Question Type : **SA**

Question ID : **7155051739**

Status : **Not Answered**

Q.30 Two discs of same mass and different radii are made of different materials such that their thicknesses are 1 cm and 0.5 cm respectively. The densities of materials are in the ratio 3 : 5. The moment of inertia of these discs respectively about their diameters will be in the ratio of $\frac{x}{6}$. The value of x is _____.

Given --
Answer :

Question Type : **SA**

Question ID : **7155051738**

Status : **Not Answered**

Section : **Chemistry Section A**

Q.31 The element playing significant role in neuromuscular function and interneuronal transmission is :

- Options**
1. **Ca**
 2. **Li**
 3. **Be**
 4. **Mg**

Question Type : **MCQ**

Question ID : **7155051747**

Option 1 ID : **7155055246**

Option 2 ID : **7155055248**

Option 3 ID : **7155055245**

Option 4 ID : **7155055247**

Status : **Answered**

Chosen Option : **1**

Q.32 In the following halogenated organic compounds the one with maximum number of chlorine atoms in its structure is :

- Options**
1. **Chloral**
 2. **Freon-12**
 3. **Gammexene**
 4. **Chloropicrin**

Question Type : **MCQ**

Question ID : **7155051754**

Option 1 ID : **7155055275**

Option 2 ID : **7155055273**

Option 3 ID : **7155055274**

Option 4 ID : **7155055276**

Status : **Answered**

Chosen Option : **4**

Q.33 Evaluate the following statements for their correctness.

- A. The elevation in boiling point temperature of water will be same for 0.1 M NaCl and 0.1 M urea.
- B. Azeotropic mixtures boil without change in their composition.
- C. Osmosis always takes place from hypertonic to hypotonic solution.
- D. The density of 32% H_2SO_4 solution having molarity 4.09 M is approximately 1.26 g mL^{-1} .
- E. A negatively charged sol is obtained when KI solution is added to silver nitrate solution.

Choose the **correct** answer from the options given below :

- Options**
- 1. B and D only
 - 2. B, D and E only
 - 3. A and C only
 - 4. A, B and D only

Question Type : **MCQ**

Question ID : **7155051742**

Option 1 ID : **7155055226**

Option 2 ID : **7155055227**

Option 3 ID : **7155055225**

Option 4 ID : **7155055228**

Status : **Answered**

Chosen Option : 3

Q.34 Which one of the following statements is incorrect ?

- Options**
- 1. Boron and Indium can be purified by zone refining method.
 - 2. Cast iron is obtained by melting pig iron with scrap iron and coke using hot air blast.
 - 3. van Arkel method is used to purify tungsten.
 - 4. The malleable iron is prepared from cast iron by oxidising impurities in a reverberatory furnace.

Question Type : **MCQ**

Question ID : **7155051745**

Option 1 ID : **7155055237**

Option 2 ID : **7155055240**

Option 3 ID : **7155055238**

Option 4 ID : **7155055239**

Status : **Answered**

Chosen Option : 1

Q.35 The Lewis acid character of boron tri halides follows the order :

- Options**
- 1. $\text{BF}_3 > \text{BCl}_3 > \text{BBr}_3 > \text{BI}_3$
 - 2. $\text{BI}_3 > \text{BBr}_3 > \text{BCl}_3 > \text{BF}_3$
 - 3. $\text{BCl}_3 > \text{BF}_3 > \text{BBr}_3 > \text{BI}_3$
 - 4. $\text{BBr}_3 > \text{BI}_3 > \text{BCl}_3 > \text{BF}_3$

Question Type : **MCQ**

Question ID : **7155051748**

Option 1 ID : **7155055250**

Option 2 ID : **7155055252**

Option 3 ID : **7155055251**

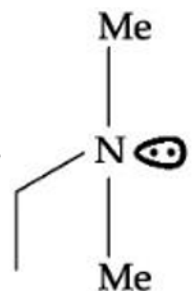
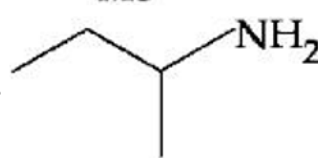
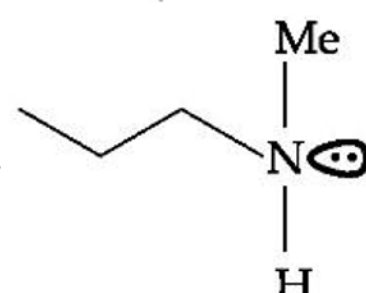
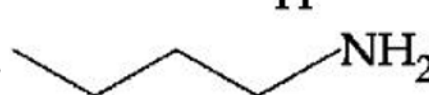
Option 4 ID : **7155055249**

Status : **Answered**

Chosen Option : 2

Q.36 An organic compound [A] ($C_4H_{11}N$), shows optical activity and gives N_2 gas on treatment with HNO_2 . The compound [A] reacts with $PhSO_2Cl$ producing a compound which is soluble in KOH .
The structure of A is :

Options

1. 
2. 
3. 
4. 

Question Type : **MCQ**

Question ID : **7155051756**

Option 1 ID : **7155055284**

Option 2 ID : **7155055282**

Option 3 ID : **7155055283**

Option 4 ID : **7155055281**

Status : **Answered**

Chosen Option : **3**

Q.37 Which of the following compounds are not used as disinfectants ?

- A. Chloroxylonol
- B. Bithional
- C. Veronal
- D. Prontosil
- E. Terpeneol

Choose the **correct** answer from the options given below :

Options 1. C, D

2. A, B, E
3. B, D, E
4. A, B

Question Type : **MCQ**

Question ID : **7155051758**

Option 1 ID : **7155055292**

Option 2 ID : **7155055289**

Option 3 ID : **7155055291**

Option 4 ID : **7155055290**

Status : **Answered**

Chosen Option : **4**

Q.38 Match List I with List II

LIST I		LIST II	
A.	Physisorption	I.	Single Layer Adsorption
B.	Chemisorption	II.	20 – 40 kJ mol ⁻¹
C.	$\text{N}_2(\text{g}) + 3\text{H}_2(\text{g}) \xrightarrow{\text{Fe(s)}} 2\text{NH}_3(\text{g})$	III.	Chromatography
D.	Analytical Application or Adsorption	IV.	Heterogeneous catalysis

Choose the **correct** answer from the options given below:

- Options
1. A - II, B - III, C - I, D - IV
 2. A - II, B - I, C - IV, D - III
 3. A - III, B - IV, C - I, D - II
 4. A - IV, B - II, C - III, D - I

Question Type : **MCQ**

Question ID : **7155051743**

Option 1 ID : **7155055232**

Option 2 ID : **7155055231**

Option 3 ID : **7155055229**

Option 4 ID : **7155055230**

Status : **Answered**

Chosen Option : **4**

Q.39 In Dumas method for the estimation of N₂, the sample is heated with copper oxide and the gas evolved is passed over :

- Options
1. Copper oxide
 2. Pd
 3. Ni
 4. Copper gauze

Question Type : **MCQ**

Question ID : **7155051751**

Option 1 ID : **7155055261**

Option 2 ID : **7155055264**

Option 3 ID : **7155055262**

Option 4 ID : **7155055263**

Status : **Answered**

Chosen Option : **4**

Q.40 Which of the following elements have half-filled f-orbitals in their ground state ?

(Given : atomic number Sm = 62; Eu = 63; Tb = 65; Gd = 64, Pm = 61)

- A. Sm
- B. Eu
- C. Tb
- D. Gd
- E. Pm

Choose the **correct** answer from the options given below :

Options 1. C and D only

- 2. A and E only
- 3. B and D only
- 4. A and B only

Question Type : **MCQ**

Question ID : **7155051749**

Option 1 ID : **7155055254**

Option 2 ID : **7155055255**

Option 3 ID : **7155055256**

Option 4 ID : **7155055253**

Status : **Answered**

Chosen Option : 1

Q.41 Arrange the following orbitals in decreasing order of energy.

- A. $n = 3, l = 0, m = 0$
- B. $n = 4, l = 0, m = 0$
- C. $n = 3, l = 1, m = 0$
- D. $n = 3, l = 2, m = 1$

The correct option for the order is :

Options 1. A>C>B>D

- 2. B>D>C>A
- 3. D>B>A>C
- 4. D>B>C>A

Question Type : **MCQ**

Question ID : **7155051741**

Option 1 ID : **7155055222**

Option 2 ID : **7155055224**

Option 3 ID : **7155055223**

Option 4 ID : **7155055221**

Status : **Answered**

Chosen Option : 4

Q.42 The normal rain water is slightly acidic and its pH value is 5.6 because of which one of the following ?

- Options**
1. $4\text{NO}_2 + \text{O}_2 + 2\text{H}_2\text{O} \rightarrow 4\text{HNO}_3$
 2. $\text{CO}_2 + \text{H}_2\text{O} \rightarrow \text{H}_2\text{CO}_3$
 3. $2\text{SO}_2 + \text{O}_2 + 2\text{H}_2\text{O} \rightarrow 2\text{H}_2\text{SO}_4$
 4. $\text{N}_2\text{O}_5 + \text{H}_2\text{O} \rightarrow 2\text{HNO}_3$

Question Type : **MCQ**

Question ID : **7155051750**

Option 1 ID : **7155055260**

Option 2 ID : **7155055257**

Option 3 ID : **7155055259**

Option 4 ID : **7155055258**

Status : **Answered**

Chosen Option : **3**

Q.43 Given below are two statements :

Statement I : H_2O_2 is used in the synthesis of Cephalosporin

Statement II : H_2O_2 is used for the restoration of aerobic conditions to sewage wastes.

In the light of the above statements, choose the **most appropriate** answer from the options given below :

- Options**
1. **Statement I** is correct but **Statement II** is incorrect
 2. **Statement I** is incorrect but **Statement II** is correct
 3. Both **Statement I** and **Statement II** are incorrect
 4. Both **Statement I** and **Statement II** are correct

Question Type : **MCQ**

Question ID : **7155051746**

Option 1 ID : **7155055243**

Option 2 ID : **7155055244**

Option 3 ID : **7155055242**

Option 4 ID : **7155055241**

Status : **Answered**

Chosen Option : **3**

Q.44 A hydrocarbon 'X' with formula C_6H_8 uses two moles of H_2 on catalytic hydrogenation of its one mole. On ozonolysis, 'X' yields two moles of methane dicarbaldehyde. The hydrocarbon 'X' is :

- Options**
1. 1-methylcyclopenta-1, 4-diene
 2. cyclohexa - 1, 3 - diene
 3. cyclohexa-1, 4-diene
 4. hexa-1, 3, 5-triene

Question Type : **MCQ**

Question ID : **7155051753**

Option 1 ID : **7155055272**

Option 2 ID : **7155055269**

Option 3 ID : **7155055271**

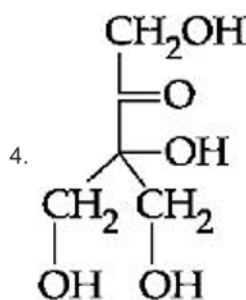
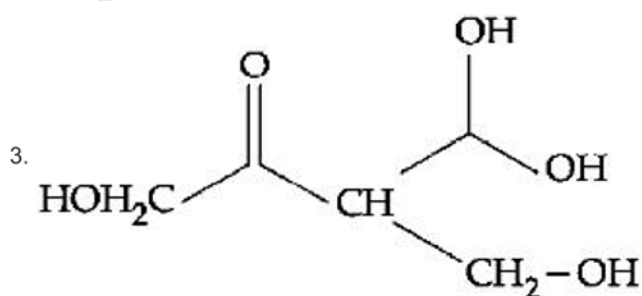
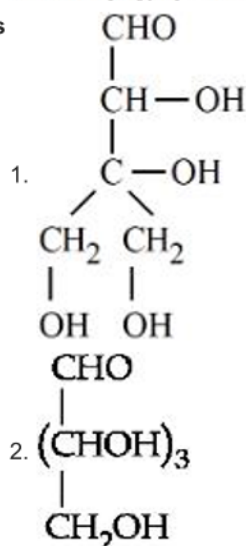
Option 4 ID : **7155055270**

Status : **Not Answered**

Chosen Option : **--**

Q.45 Compound A, $C_5H_{10}O_5$, given a tetraacetate with AC_2O and oxidation of A with $Br_2 - H_2O$ gives an acid, $C_5H_{10}O_6$. Reduction of A with HI gives isopentane. The possible structure of A is :

Options



Question Type : MCQ

Question ID : 7155051759

Option 1 ID : 7155055294

Option 2 ID : 7155055293

Option 3 ID : 7155055296

Option 4 ID : 7155055295

Status : Answered

Chosen Option : 3

Q.46 Incorrect statement for the use of indicators in acid-base titration is :

Options

1. Phenolphthalein is a suitable indicator for a weak acid vs strong base titration.
2. Methyl orange is a suitable indicator for a strong acid vs weak base titration.
3. Methyl orange may be used for a weak acid vs weak base titration.
4. Phenolphthalein may be used for a strong acid vs strong base titration.

Question Type : **MCQ**

Question ID : **7155051760**

Option 1 ID : **7155055297**

Option 2 ID : **7155055298**

Option 3 ID : **7155055300**

Option 4 ID : **7155055299**

Status : **Not Answered**

Chosen Option : --

Q.47 Given below are two statements :

Statement I : Upon heating a borax bead dipped in cupric sulphate in a luminous flame, the colour of the bead becomes green

Statement II : The green colour observed is due to the formation of copper(I) metaborate

In the light of the above statements, choose the **most appropriate** answer from the options given below :

- Options**
1. Both **Statement I** and **Statement II** are true
 2. **Statement I** is false but **Statement II** is true
 3. **Statement I** is true but **Statement II** is false
 4. Both **Statement I** and **Statement II** are false

Question Type : **MCQ**

Question ID : **7155051757**

Option 1 ID : **7155055285**

Option 2 ID : **7155055288**

Option 3 ID : **7155055287**

Option 4 ID : **7155055286**

Status : **Answered**

Chosen Option : 1

Q.48 Given below are two statements : one is labelled as **Assertion (A)** and the other is labelled as **Reason (R)**.

Assertion (A) : The first ionization enthalpy of 3d series elements is more than that of group 2 metals

Reason (R) : In 3d series of elements successive filling of d-orbitals takes place.

In the light of the above statements, choose the **correct** answer from the options given below :

- Options**
1. **(A)** is false but **(R)** is true
 2. Both **(A)** and **(R)** are true but **(R)** is **not** the correct explanation of **(A)**
 3. Both **(A)** and **(R)** are true and **(R)** is the correct explanation of **(A)**
 4. **(A)** is true but **(R)** is false

Question Type : **MCQ**

Question ID : **7155051744**

Option 1 ID : **7155055236**

Option 2 ID : **7155055234**

Option 3 ID : **7155055233**

Option 4 ID : **7155055235**

Status : **Not Answered**

Chosen Option : --

Q.49 When a hydrocarbon A undergoes complete combustion it requires 11 equivalents of oxygen and produces 4 equivalents of water. What is the molecular formula of A ?

- Options
1. C_9H_8
 2. $C_{11}H_4$
 3. $C_{11}H_8$
 4. C_5H_8

Question Type : **MCQ**

Question ID : **7155051752**

Option 1 ID : **7155055266**

Option 2 ID : **7155055268**

Option 3 ID : **7155055267**

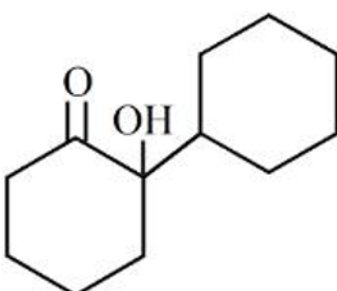
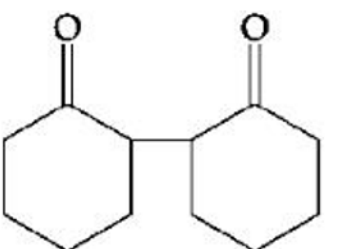
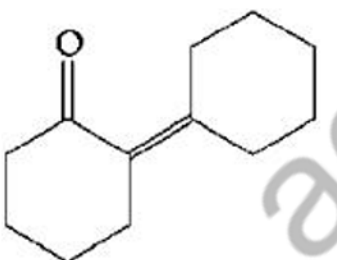
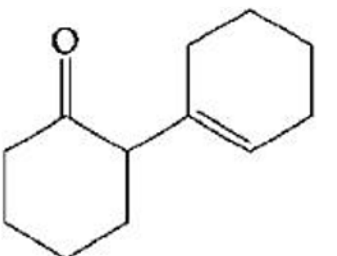
Option 4 ID : **7155055265**

Status : **Answered**

Chosen Option : **2**

Q.50 Cyclohexylamine when treated with nitrous acid yields (P). On treating (P) with PCC results in (Q). When (Q) is heated with dil. NaOH we get (R). The final product (R) is :

Options

1. 
2. 
3. 
4. 

Question Type : **MCQ**

Question ID : **7155051755**

Option 1 ID : **7155055277**

Option 2 ID : **7155055280**

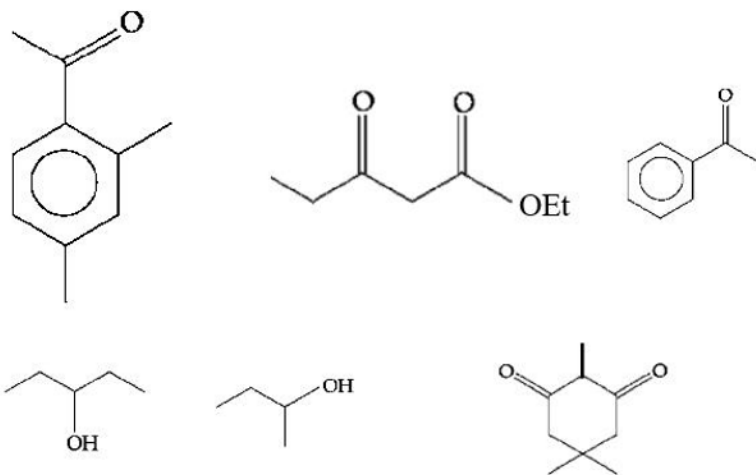
Option 3 ID : **7155055279**

Option 4 ID : **7155055278**

Status : **Not Answered**

Chosen Option : **--**

Q.51 The number of molecules which gives haloform test among the following molecules is _____.



Given --
Answer :

Question Type : **SA**

Question ID : **7155051770**

Status : **Not Answered**

Q.52 Amongst the following, the number of species having the linear shape is _____.

XeF_2 , I_3^+ , C_3O_2 , I_3^- , CO_2 , SO_2 , BeCl_2 and BCl_2^-

Given **4**
Answer :

Question Type : **SA**

Question ID : **7155051763**

Status : **Answered**

Q.53 A sample of a metal oxide has formula $\text{M}_{0.83}\text{O}_{1.00}$. The metal M can exist in two oxidation states +2 and +3. In the sample of $\text{M}_{0.83}\text{O}_{1.00}$, the percentage of metal ions existing in +2 oxidation state is _____ %. (nearest integer)

Given --
Answer :

Question Type : **SA**

Question ID : **7155051762**

Status : **Not Answered**

Q.54 At 298 K, the solubility of silver chloride in water is $1.434 \times 10^{-3} \text{ g L}^{-1}$. The value of $-\log K_{\text{sp}}$ for silver chloride is _____.
(Given mass of Ag is 107.9 g mol^{-1}
and mass of Cl is 35.5 g mol^{-1})

Given --
Answer :

Question Type : **SA**

Question ID : **7155051765**

Status : **Not Answered**

Q.55 The rate constant for a first order reaction is 20 min^{-1} . The time required for the initial concentration of the reactant to reduce to its $\frac{1}{32}$ level is _____ $\times 10^{-2}$ min. (Nearest integer)

(Given : $\ln 10 = 2.303$
 $\log 2 = 0.3010$)

Given --
Answer :

Question Type : **SA**
Question ID : **7155051767**
Status : **Not Answered**

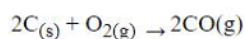
Q.56 If the CFSE of $[\text{Ti}(\text{H}_2\text{O})_6]^{3+}$ is -96.0 kJ/mol , this complex will absorb maximum at wavelength _____ nm. (nearest integer)

Assume Planck's constant (h) = $6.4 \times 10^{-34} \text{ Js}$, Speed of light (c) = $3.0 \times 10^8 \text{ m/s}$ and Avogadro's Constant (N_A) = $6 \times 10^{23}/\text{mol}$.

Given --
Answer :

Question Type : **SA**
Question ID : **7155051769**
Status : **Not Answered**

Q.57 Assume carbon burns according to following equation :



when 12 g carbon is burnt in 48 g of oxygen, the volume of carbon monoxide produced is _____ $\times 10^{-1} \text{ L}$ at STP [nearest integer]

[Given : Assume CO as ideal gas , Mass of C is 12 g mol^{-1} , Mass of O is 16 g mol^{-1} and molar volume of an ideal gas at STP is 22.7 L mol^{-1}]

Given --
Answer :

Question Type : **SA**
Question ID : **7155051761**
Status : **Not Answered**

Q.58 The number of alkali metal(s), from Li, K, Cs, Rb having ionization enthalpy greater than 400 kJ mol^{-1} and forming stable super oxide is _____.

Given --
Answer :

Question Type : **SA**
Question ID : **7155051768**
Status : **Not Answered**

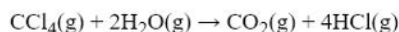
Q.59 The resistivity of a 0.8 M solution of an electrolyte is $5 \times 10^{-3} \Omega\text{cm}$. Its molar conductivity is _____ $\times 10^4 \Omega^{-1}\text{cm}^2 \text{ mol}^{-1}$.

(Nearest integer)

Given --
Answer :

Question Type : **SA**
Question ID : **7155051766**
Status : **Not Answered**

Q.60 Enthalpies of formation of $\text{CCl}_4(\text{g})$, $\text{H}_2\text{O}(\text{g})$, $\text{CO}_2(\text{g})$ and $\text{HCl}(\text{g})$ are -105 , -242 , -394 and -92 kJ mol^{-1} respectively. The magnitude of enthalpy of the reaction given below is _____ kJ mol^{-1} , (nearest integer)



Given --
Answer :

Question Type : **SA**

Question ID : **7155051764**

Status : **Not Answered**

Section : **Mathematics Section A**

Q.61 Let : $\vec{a} = \hat{i} + 2\hat{j} + 3\hat{k}$, $\vec{b} = \hat{i} - \hat{j} + 2\hat{k}$ and $\vec{c} = 5\hat{i} - 3\hat{j} + 3\hat{k}$ be there vectors. If $\vec{r}$ is a vector such that, $\vec{r} \times \vec{b} = \vec{c} \times \vec{b}$ and $\vec{r} \cdot \vec{a} = 0$, then $25|\vec{r}|^2$ is equal to

- Options** 1. **449**
2. **336**
3. **339**
4. **560**

Question Type : **MCQ**

Question ID : **7155051777**

Option 1 ID : **7155055336**

Option 2 ID : **7155055335**

Option 3 ID : **7155055337**

Option 4 ID : **7155055338**

Status : **Answered**

Chosen Option : **4**

Q.62 Let P be the plane, passing through the point $(1, -1, -5)$ and perpendicular to the line joining the points $(4, 1, -3)$ and $(2, 4, 3)$. Then the distance of P from the point $(3, -2, 2)$ is

- Options** 1. **6**
2. **7**
3. **5**
4. **4**

Question Type : **MCQ**

Question ID : **7155051783**

Option 1 ID : **7155055362**

Option 2 ID : **7155055359**

Option 3 ID : **7155055361**

Option 4 ID : **7155055360**

Status : **Not Answered**

Chosen Option : **--**

Q.63 The set of all values of a^2 for which the line $x + y = 0$ bisects two distinct chords drawn from a point $P\left(\frac{1+a}{2}, \frac{1-a}{2}\right)$ on the circle $2x^2 + 2y^2 - (1+a)x - (1-a)y = 0$, is equal to :

- Options**
1. $(4, \infty)$
 2. $(8, \infty)$
 3. $(2, 12]$
 4. $(0, 4]$

Question Type : **MCQ**

Question ID : **7155051785**

Option 1 ID : **7155055368**

Option 2 ID : **7155055370**

Option 3 ID : **7155055367**

Option 4 ID : **7155055369**

Status : **Not Answered**

Chosen Option : --

Q.64 Let $(a, b) \subset (0, 2\pi)$ be the largest interval for which $\sin^{-1}(\sin\theta) - \cos^{-1}(\sin\theta) > 0$, $\theta \in (0, 2\pi)$, holds. If $\alpha x^2 + \beta x + \sin^{-1}(x^2 - 6x + 10) + \cos^{-1}(x^2 - 6x + 10) = 0$ and $\alpha - \beta = b - a$, then α is equal to :

- Options**
1. $\frac{\pi}{8}$
 2. $\frac{\pi}{48}$
 3. $\frac{\pi}{12}$
 4. $\frac{\pi}{16}$

Question Type : **MCQ**

Question ID : **7155051788**

Option 1 ID : **7155055380**

Option 2 ID : **7155055382**

Option 3 ID : **7155055381**

Option 4 ID : **7155055379**

Status : **Not Answered**

Chosen Option : --

Q.65 If a point $P(\alpha, \beta, \gamma)$ satisfying

$$(\alpha \ \beta \ \gamma) \begin{pmatrix} 2 & 10 & 8 \\ 9 & 3 & 8 \\ 8 & 4 & 8 \end{pmatrix} = (0 \ 0 \ 0)$$

lies on the plane $2x + 4y + 3z = 5$, then $6\alpha + 9\beta + 7\gamma$ is equal to :

Options 1. -1

2. $\frac{5}{4}$

3. 11

4. $\frac{11}{5}$

Question Type : MCQ

Question ID : 7155051774

Option 1 ID : 7155055323

Option 2 ID : 7155055324

Option 3 ID : 7155055326

Option 4 ID : 7155055325

Status : Answered

Chosen Option : 2

Q.66

Let $\alpha > 0$. If $\int_0^{\alpha} \frac{x}{\sqrt{x+\alpha}-\sqrt{x}} dx = \frac{16+20\sqrt{2}}{15}$, then α is equal to :

Options 1. $2\sqrt{2}$

2. 4

3. 2

4. $\sqrt{2}$

Question Type : MCQ

Question ID : 7155051780

Option 1 ID : 7155055348

Option 2 ID : 7155055350

Option 3 ID : 7155055349

Option 4 ID : 7155055347

Status : Answered

Chosen Option : 2

Q.67 Let the mean and standard deviation of marks of class A of 100 students be respectively 40 and α (> 0), and the mean and standard deviation of marks of class B of n students be respectively 55 and $30 - \alpha$. If the mean and variance of the marks of the combined class of $100 + n$ students are respectively 50 and 350, then the sum of variances of classes A and B is :

Options 1. 450

2. 650

3. 900

4. 500

Question Type : MCQ

Question ID : 7155051789

Option 1 ID : 7155055383

Option 2 ID : 7155055385

Option 3 ID : 7155055386

Option 4 ID : 7155055384

Status : Answered

Chosen Option : 1

Q.68

The complex number $z = \frac{i-1}{\cos \frac{\pi}{3} + i \sin \frac{\pi}{3}}$ is equal to :

Options 1. $\cos \frac{\pi}{12} - i \sin \frac{\pi}{12}$

2. $\sqrt{2} i \left(\cos \frac{5\pi}{12} - i \sin \frac{5\pi}{12} \right)$

3. $\sqrt{2} \left(\cos \frac{5\pi}{12} + i \sin \frac{5\pi}{12} \right)$

4. $\sqrt{2} \left(\cos \frac{\pi}{12} + i \sin \frac{\pi}{12} \right)$

Question Type : MCQ

Question ID : 7155051772

Option 1 ID : 7155055315

Option 2 ID : 7155055318

Option 3 ID : 7155055317

Option 4 ID : 7155055316

Status : Answered

Chosen Option : 1

Q.69

If $\phi(x) = \frac{1}{\sqrt{x}} \int_{\frac{\pi}{4}}^x (4\sqrt{2} \sin t - 3\phi'(t)) dt, x > 0$, then $\phi'\left(\frac{\pi}{4}\right)$ is equal to :

Options 1. $\frac{8}{6+\sqrt{\pi}}$

2. $\frac{4}{6+\sqrt{\pi}}$

3. $\frac{4}{6-\sqrt{\pi}}$

4. $\frac{8}{\sqrt{\pi}}$

Question Type : MCQ

Question ID : 7155051779

Option 1 ID : 7155055346

Option 2 ID : 7155055345

Option 3 ID : 7155055344

Option 4 ID : 7155055343

Status : Not Answered

Chosen Option : --

Q.70 Let H be the hyperbola, whose foci are $(1 \pm \sqrt{2}, 0)$ and eccentricity is $\sqrt{2}$. Then the length of its latus rectum is _____.

- Options**
1. 2
 2. $\frac{5}{2}$
 3. 3
 4. $\frac{3}{2}$

Question Type : **MCQ**

Question ID : **7155051784**

Option 1 ID : **7155055364**

Option 2 ID : **7155055365**

Option 3 ID : **7155055366**

Option 4 ID : **7155055363**

Status : **Answered**

Chosen Option : **4**

Q.71 The number of values of $r \in \{p, q, \sim p, \sim q\}$ for which $((p \wedge q) \Rightarrow (r \vee q)) \wedge ((p \wedge r) \Rightarrow q)$ is a tautology, is :

- Options**
1. 3
 2. 2
 3. 1
 4. 4

Question Type : **MCQ**

Question ID : **7155051790**

Option 1 ID : **7155055389**

Option 2 ID : **7155055388**

Option 3 ID : **7155055387**

Option 4 ID : **7155055390**

Status : **Answered**

Chosen Option : **2**

Q.72 Let $y = y(x)$ be the solution of the differential equation $(3y^2 - 5x^2)y \, dx + 2x(x^2 - y^2) \, dy = 0$ such that $y(1) = 1$. Then $|(y(2))^3 - 12y(2)|$ is equal to :

- Options**
1. 32
 2. $16\sqrt{2}$
 3. $32\sqrt{2}$
 4. 64

Question Type : **MCQ**

Question ID : **7155051781**

Option 1 ID : **7155055352**

Option 2 ID : **7155055351**

Option 3 ID : **7155055353**

Option 4 ID : **7155055354**

Status : **Answered**

Chosen Option : **2**

Q.73 The absolute minimum value, of the function $f(x) = |x^2 - x + 1| + [x^2 - x + 1]$, where $[t]$ denotes the greatest integer function, in the interval $[-1, 2]$, is:

- Options
1. $\frac{3}{4}$
 2. $\frac{3}{2}$
 3. $\frac{1}{4}$
 4. $\frac{5}{4}$

Question Type : **MCQ**

Question ID : **7155051778**

Option 1 ID : **7155055340**

Option 2 ID : **7155055342**

Option 3 ID : **7155055339**

Option 4 ID : **7155055341**

Status : **Answered**

Chosen Option : **2**

Q.74

$$\lim_{x \rightarrow \infty} \frac{(\sqrt{3x+1} + \sqrt{3x-1})^6 + (\sqrt{3x+1} - \sqrt{3x-1})^6}{(x + \sqrt{x^2-1})^6 + (x - \sqrt{x^2-1})^6} x^3$$

- Options
1. is equal to 9
 2. does not exist
 3. is equal to $\frac{27}{2}$
 4. is equal to 27

Question Type : **MCQ**

Question ID : **7155051776**

Option 1 ID : **7155055332**

Option 2 ID : **7155055334**

Option 3 ID : **7155055331**

Option 4 ID : **7155055333**

Status : **Answered**

Chosen Option : **3**

Q.75 Let the plane $P : 8x + a_1y + a_2z + 12 = 0$ be parallel to the line $L : \frac{x+2}{2} = \frac{y-3}{3} = \frac{z+4}{5}$. If the intercept of P on the y -axis is 1, then the distance between P and L is :

- Options**
1. $\sqrt{\frac{7}{2}}$
 2. $\frac{6}{\sqrt{14}}$
 3. $\sqrt{14}$
 4. $\sqrt{\frac{2}{7}}$

Question Type : **MCQ**

Question ID : **7155051787**

Option 1 ID : **7155055377**

Option 2 ID : **7155055378**

Option 3 ID : **7155055376**

Option 4 ID : **7155055375**

Status : **Answered**

Chosen Option : **3**

Q.76 Let $a_1, a_2, a_3, \dots$ be an A.P. If $a_7 = 3$, the product a_1a_4 is minimum and the sum of its first n terms is zero, then $n! - 4a_{n(n+2)}$ is equal to :

- Options**
1. $\frac{33}{4}$
 2. $\frac{381}{4}$
 3. 9
 4. 24

Question Type : **MCQ**

Question ID : **7155051775**

Option 1 ID : **7155055330**

Option 2 ID : **7155055328**

Option 3 ID : **7155055329**

Option 4 ID : **7155055327**

Status : **Answered**

Chosen Option : **3**

Q.77 The equation $e^{4x} + 8e^{3x} + 13e^{2x} - 8e^x + 1 = 0, x \in \mathbb{R}$ has :

- Options**
1. no solution
 2. two solutions and only one of them is negative
 3. two solutions and both are negative
 4. four solutions two of which are negative

Question Type : **MCQ**

Question ID : **7155051773**

Option 1 ID : **7155055322**

Option 2 ID : **7155055321**

Option 3 ID : **7155055320**

Option 4 ID : **7155055319**

Status : **Answered**

Chosen Option : **2**

Q.78

Let $f: \mathbb{R} - \{2, 6\} \rightarrow \mathbb{R}$ be real valued function defined as $f(x) = \frac{x^2 + 2x + 1}{x^2 - 8x + 12}$.

Then range of f is

Options

1. $\left(-\infty, -\frac{21}{4}\right] \cup \left[\frac{21}{4}, \infty\right)$
2. $\left(-\infty, -\frac{21}{4}\right) \cup (0, \infty)$
3. $\left(-\infty, -\frac{21}{4}\right] \cup [0, \infty)$
4. $\left(-\infty, -\frac{21}{4}\right] \cup [1, \infty)$

Question Type : MCQ

Question ID : 7155051782

Option 1 ID : 7155055357

Option 2 ID : 7155055356

Option 3 ID : 7155055355

Option 4 ID : 7155055358

Status : Answered

Chosen Option : 2

Q.79 Among the relations

$S = \{(a, b) : a, b \in \mathbb{R} - \{0\}, 2 + \frac{a}{b} > 0\}$ and $T = \{(a, b) : a, b \in \mathbb{R}, a^2 - b^2 \in \mathbb{Z}\}$,

Options 1. T is symmetric but S is not

2. neither S nor T is transitive
3. S is transitive but T is not
4. both S and T are symmetric

Question Type : MCQ

Question ID : 7155051771

Option 1 ID : 7155055311

Option 2 ID : 7155055313

Option 3 ID : 7155055312

Option 4 ID : 7155055314

Status : Answered

Chosen Option : 4

Q.80 The foot of perpendicular from the origin O to a plane P which meets the co-ordinate axes at the points A, B, C is $(2, a, 4)$, $a \in \mathbb{N}$. If the volume of the tetrahedron OABC is 144 unit^3 , then which of the following points is **NOT** on P?

Options 1. $(0, 6, 3)$

2. $(2, 2, 4)$
3. $(3, 0, 4)$
4. $(0, 4, 4)$

Question Type : MCQ

Question ID : 7155051786

Option 1 ID : 7155055373

Option 2 ID : 7155055372

Option 3 ID : 7155055374

Option 4 ID : 7155055371

Status : Answered

Chosen Option : 1

Q.81 Let the area of the region $\{(x, y) : |2x - 1| \leq y \leq |x^2 - x|, 0 \leq x \leq 1\}$ be A. Then $(6A + 11)^2$ is equal to _____.

Given --
Answer :

Question Type : SA

Question ID : 7155051796

Status : Not Answered

Q.82 If the constant term in the binomial expansion of $\left(\frac{x^{\frac{5}{2}}}{2} - \frac{4}{x^l}\right)^9$ is -84 and the coefficient of x^{-3l} is $2^\alpha \beta$, where $\beta < 0$ is an odd number, then $|a| - \beta$ is equal to _____.

Given --
Answer :

Question Type : SA

Question ID : 7155051793

Status : Not Answered

Q.83 If ${}^{2n+1}P_{n-1} : {}^{2n-1}P_n = 11 : 21$, then $n^2 + n + 15$ is equal to :

Given --
Answer :

Question Type : SA

Question ID : 7155051795

Status : Not Answered

Q.84 Let A be a $n \times n$ matrix such that $|A| = 2$. If the determinant of the matrix $\text{Adj}(2 \cdot \text{Adj}(2A^{-1}))$ is 2^{84} , then n is equal to _____.

Given --
Answer :

Question Type : SA

Question ID : 7155051791

Status : Not Answered

Q.85 Let $\vec{a}, \vec{b}, \vec{c}$ be three vectors such that $|\vec{a}| = \sqrt{31}$, $4|\vec{b}| = |\vec{c}| = 2$ and $2(\vec{a} \times \vec{b}) = 3(\vec{c} \times \vec{a})$. If

the angle between $\vec{b}$ and $\vec{c}$ is $\frac{2\pi}{3}$, then $\left(\frac{\vec{a} \times \vec{c}}{\vec{a} \cdot \vec{b}}\right)^2$ is equal to _____.

Given --
Answer :

Question Type : SA

Question ID : 7155051798

Status : Not Answered

Q.86 The coefficient of x^{-6} , in the expansion of $\left(\frac{4x}{5} + \frac{5}{2x^2}\right)^9$, is _____.

Given --
Answer :

Question Type : **SA**
Question ID : **7155051800**
Status : **Not Answered**

Q.87 Let $A = [a_{ij}]$, $a_{ij} \in \mathbb{Z} \cap [0, 4]$, $1 \leq i, j \leq 2$. The number of matrices A such that the sum of all entries is a prime number $p \in (2, 13)$ is _____.

Given --
Answer :

Question Type : **SA**
Question ID : **7155051792**
Status : **Not Answered**

Q.88 Let S be the set of all $a \in \mathbb{N}$ such that the area of the triangle formed by the tangent at the point $P(b, c)$, $b, c \in \mathbb{N}$, on the parabola $y^2 = 2ax$ and the lines $x = b$, $y = 0$ is 16 unit^2 , then $\sum_{a \in S} a$ is equal to _____.

Given --
Answer :

Question Type : **SA**
Question ID : **7155051797**
Status : **Not Answered**

Q.89 The sum $1^2 - 2 \cdot 3^2 + 3 \cdot 5^2 - 4 \cdot 7^2 + 5 \cdot 9^2 - \dots + 15 \cdot 29^2$ is _____.

Given --
Answer :

Question Type : **SA**
Question ID : **7155051794**
Status : **Not Answered**

Q.90 Let A be the event that the absolute difference between two randomly chosen real numbers in the sample space $[0, 60]$ is less than or equal to a . If $P(A) = \frac{11}{36}$, then a is equal to _____.

Given --
Answer :

Question Type : **SA**
Question ID : **7155051799**
Status : **Not Answered**