

PHYSICS, CHEMISTRY & MATHEMATICS

Pattern - CPT-2

QP CODE: 100039

PAPER - 1

Time Allotted: 3 Hours

Maximum Marks: 186

- Please read the instructions carefully. You are allotted 5 minutes specifically for this purpose.
- You are not allowed to leave the Examination Hall before the end of the test.

INSTRUCTIONS

Caution: Question Paper CODE as given above MUST be correctly marked in the answer OMR sheet before attempting the paper. Wrong CODE or no CODE will give wrong results.

A. General Instructions

1. Attempt ALL the questions. Answers have to be marked on the OMR sheets.
2. This question paper contains **Three Sections**.
3. **Section-I** is Physics, **Section-II** is Chemistry and **Section-III** is Mathematics.
4. All the section can be filled in **PART-A & B** of OMR.
5. Rough spaces are provided for rough work inside the question paper. No additional sheets will be provided for rough work.
6. Blank Papers, clip boards, log tables, slide rule, calculator, cellular phones, pagers and electronic devices, in any form, are not allowed.

**Forthcoming Exam –
BBE Test on 9th &
16th Oct. 2022****B. Filling of OMR Sheet**

1. Ensure matching of OMR sheet with the Question paper before you start marking your answers on OMR sheet.
2. On the OMR sheet, darken the appropriate bubble with **Blue/Black Ball Point Pen** for each character of your Enrolment No. and write in ink your Name, Test Centre and other details at the designated places.
3. OMR sheet contains alphabets, numerals & special characters for marking answers.

C. Marking Scheme For All Two Parts.

- (i) **Part-A (01-04)** – Contains Six (04) multiple choice questions which have ONLY ONE CORRECT answer. Each question carries **+3 marks** for correct answer and **-1 marks** for wrong answer.
- (ii) **PART-A (05–12)** contains (8) Multiple Choice Questions which have **One or More Than One Correct** answer.
Full Marks: +4 If only the bubble(s) corresponding to all the correct options(s) is (are) darkened.
Partial Marks: +1 For darkening a bubble corresponding to **each correct option**, provided NO incorrect option is darkened.
Zero Marks: 0 If none of the bubbles is darkened.
Negative Marks: -1 In all other cases.
For example, if (A), (C) and (D) are all the correct options for a question, darkening all these three will result in **+4 marks**; darkening only (A) and (D) will result in **+2 marks**; and darkening (A) and (B) will result in **-1 marks**, as a wrong option is also darkened.
- (iii) **Part-B (01-06)** contains six (06) Numerical based questions, the answer of which maybe positive or negative numbers or decimals to **Two decimal places** (e.g. 6.25, 7.00, -0.33, -30, 30.27, -127.30) and each question carries **+3 marks** for correct answer. **There is no negative marking.**

Name of the Candidate : _____

Batch : _____ Date of Examination : _____

Enrolment Number : _____

SECTION – I : PHYSICS

(PART – A)

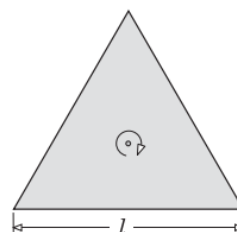
(Single Correct Answer Type)

This section contains **4 multiple choice questions**. Each question has four choices (A), (B), (C) and (D) out of which **ONLY ONE is correct**.

1. Assume that the Earth changes its shape and turns into an infinite cylinder whose radius and density are the same as those of our real Earth and the distance of the Moon from the central axis of this cylindrical earth remains unchanged. What can you say about the speed of the Moon (which remains spherical) in its orbit around the cylindrical Earth?
- (A) It will slightly increase (B) It will slightly decrease
(C) It will remain unchanged (D) It will increase several times

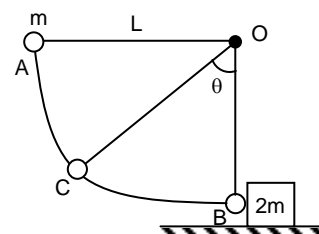
2. A uniform equilateral triangular lamina of side ℓ has mass m . Its moment of inertia about the axis through the centroid and perpendicular to its plane is

- (A) $\frac{1}{3}m\ell^2$ (B) $\frac{1}{6}m\ell^2$
(C) $\frac{1}{12}m\ell^2$ (D) None of these



3. A ball of mass m is attached to a cord of length L , pivoted at point O , as shown in figure. The ball is released from rest at point A , swings down and makes an inelastic collision with a block of mass $2m$ kept on a rough horizontal floor. The coefficient of restitution of collision is $e = 2/3$ and coefficient of friction between block and surface is μ . After collision, the ball comes momentarily to rest at C when cord makes an angle of θ with the vertical and block moves a distance of $3L/2$ on rough horizontal floor before stopping. The values of μ and θ are, respectively,

- (A) $\frac{50}{243}, \cos^{-1}\left(\frac{80}{81}\right)$ (B) $\frac{50}{81}, \cos^{-1}\left(\frac{80}{81}\right)$
(C) $\frac{2}{81}, \cos^{-1}\left(\frac{80}{243}\right)$ (D) $\frac{2}{243}, \cos^{-1}\left(\frac{80}{243}\right)$



4. Radii of a slightly tapered cylindrical wire of length L at its ends are a and b . It is stretched by two forces each of magnitude F applied at its ends. The forces are uniformly distributed over the ends faces. If Young's modulus of material of the wire is denoted by Y , extension produced is

- (A) $\frac{4FL}{\pi(a+b)^2 Y}$ (B) $\frac{FL}{\pi(a^2 + b^2) Y}$ (C) $\frac{FL}{\pi(a^2 - b^2) Y}$ (D) $\frac{FL}{\pi ab Y}$

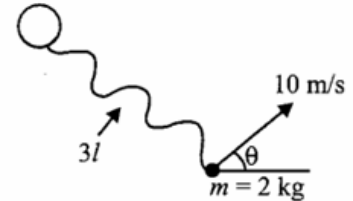
Space For Rough Work

(One or More Than One Options Correct Type)

This section contains **8 multiple choice questions**. Each question has 4 choices (A), (B), (C) and (D), out of which **ONE or MORE THAN ONE is correct**.

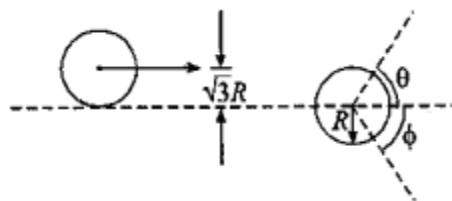
5. A particle of mass m is projected with a velocity V making an angle θ with horizontal. The magnitude of angular momentum of the projectile about the point of projection when the particle is at its maximum height, is proportional to
 (A) $V^{3/2}$ (B) V^3
 (C) m (D) g^{-1}

6. A string of length 3ℓ is connected to a fixed cylinder whose top view is shown in fig. The string is initially slack. The other end of the string (connected to a marble) is moving at a constant velocity of 10 m/s as shown. The string will get stretched at some instant and impulsive tension occurs in the string. If hinge is exerting a force of 40000 N for 0.25 ms on the cylinder to bear up the impact of impulsive tension, then mark the correct statements. (Take string to be light, breaking tension of the string is $2 \times 10^5 \text{ N}$).



- (A) The angle made by the velocity of marble with the length of string when it is just stretched is 60° .
 (B) The marble will move in a circular path of varying radius with constant speed of $5\sqrt{3} \text{ m/s}$, after the string is taut.
 (C) To answer above two options, the value of θ must be given.
 (D) String will not break when get stretched.

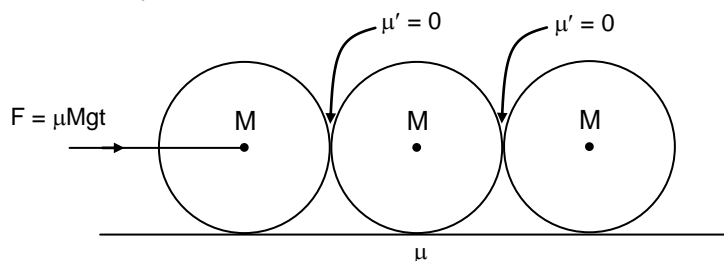
7. A disk moving on a frictionless horizontal table, collides elastically with another identical disk as shown. The directions of motion of the two disks make angles θ and ϕ with the initial line of motion as shown. Then:



- (A) $\theta = 30^\circ$ (B) $\theta = 60^\circ$ (C) $\phi = 30^\circ$ (D) $\phi = 60^\circ$

Space For Rough Work

8. Three identical cylinders each of mass M and radius R are in contact and kept on a rough horizontal surface. Coefficient of friction between any cylinder and surface is μ . A force $F = \mu Mgt$ act o the first cylinder mark the correct statement.



- (A) The cylinder will start pure rolling and keep on rolling without sliding.
 (B) At $t = 9$ second slipping will start.
 (C) Velocity of centre of mass of each cylinder will keep on increasing.
 (D) After a certain value of F angular velocity of each cylinder will become constant.
9. A wooden block (mass M) is hanging from a peg by a massless string. A bullet (with mass m and initial speed v_0) collides with block at time $t = 0$ and embeds in it. Let S be the system consisting of the block and bullet. Which quantities are NOT conserved between $t = -10$ sec to $t +10$ sec?
- (A) The total linear momentum of S
 (B) The horizontal component of the linear momentum of S
 (C) The mechanical energy of S
 (D) The angular momentum of S measured about a perpendicular axis through the peg.
10. Which of the following statements are correct for rolling without slipping on rough horizontal ground?
- (A) Acceleration of point in contact with ground is zero.
 (B) Speed of only one point is zero.
 (C) Friction force may or may not be zero.
 (D) Work done by friction may or may not be zero.
11. A particle is executing a motion in which its acceleration when plotted against displacement is a straight line passing through the points (x, a) , $(4, 20)$ and $(8, 4)$.
- (A) The motion executed by this particle is simple harmonic as acceleration is directed opposite to displacement and is directly proportional to displacement.
 (B) The motion executed by this particle is just periodic but not harmonic.
 (C) The time period of harmonic motion is π s.
 (D) Motion is not periodic.



Space For Rough Work

12. A body of mass m falls from a height h onto a pan (of negligible mass) of a spring balance as shown in figure and stick to it. The spring also possesses negligible mass and has spring constant k . Just after striking the pan, the body starts oscillatory motion in vertical direction of amplitude A and maximum compression of spring y_0 , then.



(A) $A = \frac{mg}{k}$

(B) $A = \frac{mg}{k} \sqrt{1 + \frac{2kh}{mg}}$

(C) $E = mgh + \frac{1}{2}kA^2$

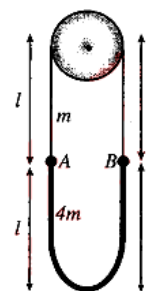
(D) $y_0 = \frac{mg}{k} + \frac{mg}{k} \sqrt{1 + \frac{2kh}{mg}}$

(PART – B)

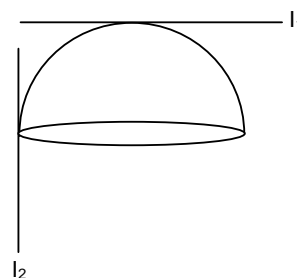
(Integer Type)

Part-C (01-06) contains six (06) Numerical based questions, the answer of which maybe positive or negative numbers or decimals (e.g. 6.25, 7.00, -0.33, -30, 30.27, -127.30) and each question carries **+4 marks** for correct answer and **there will be no negative marking**.

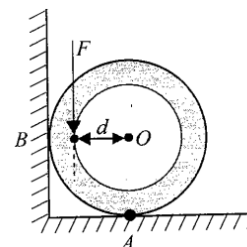
1. Two uniform ropes having linear mass densities m and $4m$ are joined to form a closed loop. The loop is hanging over a fixed frictionless small pulley with the lighter rope above as shown in the figure (in the figure equilibrium position is shown). Now if point A (joint) is slightly displaced in downward direction and released. It is found that the loop performs SHM with the period of oscillation equal to N . Find the value of N (take $\ell = \frac{150m}{4\pi^2}$, $g = 10 \text{ m/s}^2$).



2. A hemi spherical shell has two axes of rotation as shown in figure. If $\frac{l_2}{l_1} = \frac{x}{2}$ then the value of x will be



3. A solid cylinder with $r = 0.1 \text{ m}$ and mass $M = 2 \text{ kg}$ is placed such that it is in contact with the vertical and a horizontal surface as shown in figure. The coefficient of static friction is $\mu = (1/3)$ for both the surfaces. Find the distance d (in meter) from the centre of the cylinder at which a force $F = 40 \text{ N}$ should be applied vertically so that the cylinder just start rotating in anticlockwise direction. ($g = 10 \text{ m/sec}^2$)



Space For Rough Work

4. Three particles, each of mass m , are situated at the vertices of an equilateral triangle of side length a . The only forces acting on the particles are their mutual gravitational forces. It is desired that each particle moves in a circle while maintaining the original mutual separation a . Find the initial speed that should be given to each particle. (take $a = \frac{GM}{16}$)
5. The maximum acceleration and maximum velocity of simple harmonically oscillating system are 8 m/sec^2 and 5 m/s respectively. What is the angular frequency?
6. A wheel turning with angular speed 30 rad/sec is brought to rest with a constant retardation. It turns 60 revolutions before it stops. The time in which wheel stops is (consider value of $\pi = 3.14$)
-

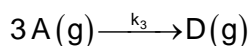
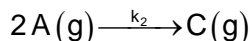
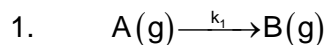
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SECTION – II : CHEMISTRY

(PART – A)

(Single Correct Answer Type)

This section contains **4 multiple choice questions**. Each question has four choices (A), (B), (C) and (D) out of which **ONLY ONE is correct**.



The rate of disappearance of A(g) in above simultaneous elementary reactions can be expressed as

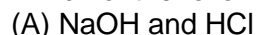
(A) $k_1[A] + k_2[A] + k_3[A]$

(B) $k_1[A] + k_2[A]^2 + k_3[A]^3$

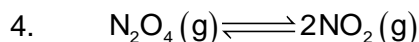
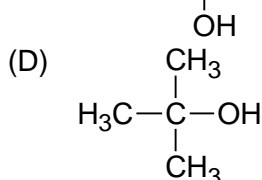
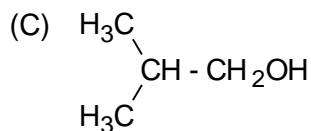
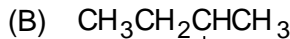
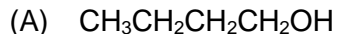
(C) $k_1[A] + 2k_2[A] + 3k_3[A]$

(D) $k_1[A] + 2k_2[A]^2 + 3k_3[A]^3$

2. Which of the following two solutions forms a buffer when mixed in a definite molar ratio?



3. Which contains the most acidic hydrogen atom?



The molecular mass of the reaction mixture (N₂O₄ and NO₂) at equilibrium is equal to 80 g mol⁻¹. What is the degree of dissociation of N₂O₄?

(A) 0.12

(B) 0.13

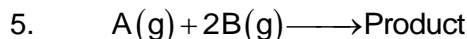
(C) 0.15

(D) 0.14

Space For Rough Work

(One or More Than One Options Correct Type)

This section contains **8 multiple choice questions**. Each question has 4 choices (A), (B), (C) and (D), out of which **ONE or MORE THAN ONE is correct**.



The following data are given for above reaction?

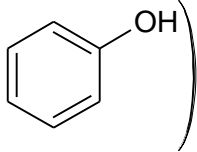
Expt. No.	$[A]_0$ in mol L ⁻¹	$[B]_0$ in mol L ⁻¹	Rate in mol L ⁻¹ s ⁻¹
1	0.1	0.1	4×10^{-4}
2	0.1	0.2	16×10^{-4}
3	0.2	0.2	32×10^{-4}

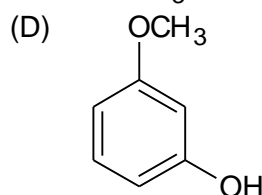
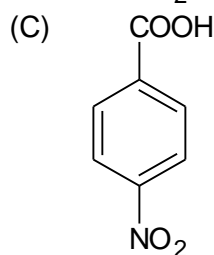
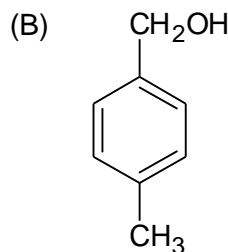
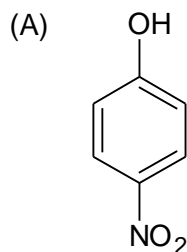
Choose correct statement(s) for the reaction.

- (A) It is an elementary reaction
 (B) Half-life of A(g) is independent of concentration of reactant
 (C) Rate constant of the reaction is $0.4 \text{ mol}^2 \text{ L}^{-2} \text{ s}^{-1}$
 (D) Rate of reaction increases by ten times by reducing the container volume to half of the initial value.
6. Which of the following acid(s) has/have higher p^{K_a} value than HCOOH?
 (A) $\text{O}_2\text{NCH}_2\text{COOH}$ (B) CH_3COOH
 (C) $(\text{CH}_3)_3\text{CCOOH}$ (D) FCH_2COOH
7. In Arrhenius equation, $k = Ae^{-E_a/RT}$, which quantity(ies) has/have same unit?
 (A) A and k (B) E_a and RT
 (C) A and RT (D) E_a and k
8. Container (I): 500 mL aqueous solution containing 0.1 mole NH_4Cl
 Container (II): 500 mL of 0.1 M NH_4Cl aqueous solution
 Which of the following property(ies) is/are given correctly at constant temperature.
 (A) pH : I > II (B) Solubility: II > I
 (C) Degree of hydrolysis: II > I (D) K_{sp} : I > II
9. $A(g) \xrightarrow{k_1} B(g) \xrightarrow{k_2} C(g)$
 Choose correct relations regarding above first order reactions
 (A) $[A] = [A]_0 e^{-k_1 t}$
 (B) $\frac{d[B]}{dt} = [A]_0 e^{-k_1 t} - k_2 [B]$
 (C) $\frac{d[C]}{dt} = k_2 [B]$
 (D) $[A]_0 = [A] + [B] + [C]$ if $[B]_0$ and $[C]_0$ are zero

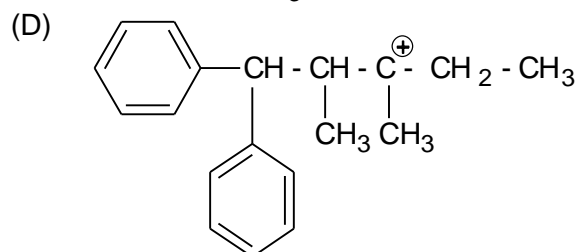
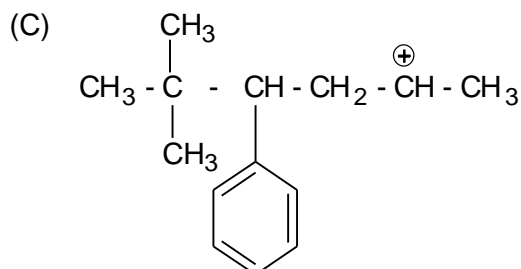
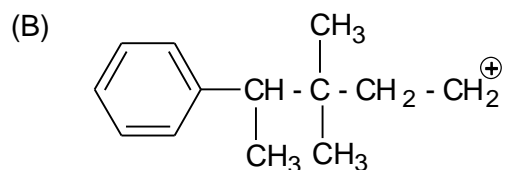
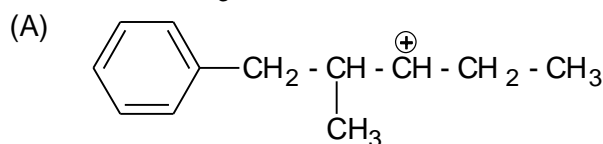
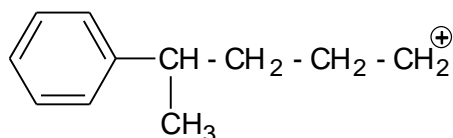
Space For Rough Work

10. $2\text{CO}(\text{g}) + \text{O}_2(\text{g}) \rightleftharpoons 2\text{CO}_2(\text{g}) + \text{Heat}$
 Which factor(s) favour(s) the decomposition reaction?
 (A) Increase in temperature
 (B) Increasing volume of reaction container
 (C) Addition of inert gas at constant pressure
 (D) Adding water in the reaction container

11. Which of the following compound(s) is/are more acidic than phenol 



12. In which of the following carbocation(s) the number of rearranged carbocation(s) is/are greater than the number of rearranged carbocations possible for the one given below:



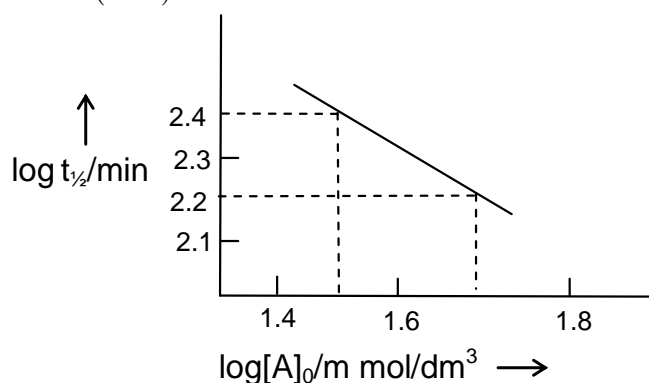
Space For Rough Work

(PART – B)**(Integer Type)**

Part-C (01-06) contains six (06) Numerical based questions, the answer of which maybe positive or negative numbers or decimals (e.g. 6.25, 7.00, -0.33, -30, 30.27, -127.30) and each question carries **+4 marks** for correct answer and **there will be no negative marking**.

1. For the reaction, $A(g) + B(g) \longrightarrow C(g) + D(g)$. The rate constant data versus temperature are given below
- | | | | |
|---|-------|-------|-------|
| $k \times 10^4$ ($\text{mol}^{-1} \text{L s}^{-1}$) | 0.503 | 3.68 | 67.1 |
| T(K) | 289 | 305.2 | 332.9 |
- If the activation energy of the reaction in Kcal mol^{-1} unit is expressed in nearest whole number as: $(7x)$, the value of x is [$\ln 7.316 = 1.99$, $\ln 18.23 = 2.9$]
2. A container contains 400 mL of 0.5 M CH_3COOH . The pH of the solution is 'x'. Now 4 g of NaOH was added to the container. The pH of the resulting solution becomes 'y'. What is the value of $(y - x)$? [Assume $1 - \alpha = 1$]
[Assume: No change in volume of the solution after addition of NaOH]
(K_a of $\text{CH}_3\text{COOH} = 10^{-5}$) [$\log 0.5 = -0.3$]
3. For the reaction, $nA(g) \longrightarrow \text{Product}$. The rate equation is $r = k[A]^n$. The relationship between $t_{1/2}$ and initial concentration of A, i.e. $[A]_0$ is

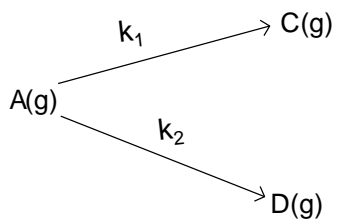
$$\log t_{1/2} = \log \frac{2^{n-1} - 1}{(n-1)k} - (n-1) \log [A]_0$$



What is the order of the reaction obtained from the graph?

Space For Rough Work

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- What is the pH of a solution which contains 4 g of NaOH and 58.5 g of NaCl per litre of solution?
 - The activation energy (E_a) of a chemical reaction is zero. What is the value of its temperature coefficient?
 - For the first order reactions



$$k_1 = 2 \times 10^{-2} \text{ s}^{-1}, k_2 = 4 \times 10^{-2} \text{ s}^{-1}$$

What is the half-life period of A(g) in sec unit?

Space For Rough Work

SECTION – III : MATHEMATICS**(PART – A)****(Single Correct Answer Type)**

This section contains **4 multiple choice questions**. Each question has four choices (A), (B), (C) and (D) out of which **ONLY ONE is correct**.

1. If $a_k = 2^{2^k} + 2^{-2^k}$ then find $\prod_{k=1}^{\infty} \left(1 - \frac{1}{a_k}\right)$
- (A) $\frac{5}{7}$ (B) $\frac{4}{7}$
(C) $\frac{4}{5}$ (D) $\frac{3}{5}$
2. The mean and variance of 5 observations of an experiment are 4 and 5.2 respectively. If from these observations three are 1, 2 and 6, then the remaining will be
(A) 2, 9 (B) 5, 6
(C) 4, 7 (D) 3, 8
3. The sum of the real roots of the polynomial $\prod_{k=1}^{100} (x^2 - 11x + k) = 0$.
(A) 320 (B) 340
(C) 350 (D) 330
4. For polynomial $f(x) = ax^2 + bx + c$ the equation $f(x) = x$ has no real solutions, then number of real solutions of the equation $f(f(x)) = x$ is/are
(A) 4 (B) 0
(C) 3 (D) 2

Space For Rough Work

(One or More Than One Options Correct Type)

This section contains **8 multiple choice questions**. Each question has 4 choices (A), (B), (C) and (D), out of which **ONE or MORE THAN ONE is correct**.

5. A parabola touches the x-axis at A(2,0) and the y-axis at B(0,1) then
- (A) Focus of the parabola is $\left(\frac{1}{5}, \frac{2}{5}\right)$ and its directrix is $x + 2y = 0$
- (B) The latus rectum of the parabola is $\frac{8}{5\sqrt{5}}$.
- (C) Focus of the parabola is $\left(\frac{2}{5}, \frac{4}{5}\right)$ and its directrix is $2x + y = 0$
- (D) The latus rectum is $\frac{16}{5\sqrt{5}}$
6. If S_n denotes the sum of first n terms of an Arithmetic progression and a_n denotes the n^{th} term of the same A.P. Given $S_n = n^2 p$; where $k, p, n \in \mathbb{N}$ and $k \neq n$ then
- (A) $a_1 = p$ (B) common difference = $2p$
- (C) $S_p = p^3$ (D) $a_p = 2p^2 - p$
7. The mean square deviation of a set of n observations x_1, x_2, \dots, x_n about a point c is defined as $\frac{1}{n} \sum_{i=1}^n (x_i - c)^2$. The mean square deviation about -2 and 2 are 18 and 10 respectively, then
- (A) Mean of this set of observations is 1
- (B) Arithmetic mean of squares of this set of n observations is 10
- (C) The standard deviation of this set of observations is 2
- (D) The standard deviation of this set of observations is 3
8. For any complex number $w = c + id$, let $\arg(w) \in (-\pi, \pi]$, where $i = \sqrt{-1}$. Let α and β be real numbers such that for all complex numbers $z = x + iy$ satisfying $\arg\left(\frac{z + \alpha}{z + \beta}\right) = \frac{\pi}{4}$, the ordered pair (x, y) lies on the circle $x^2 + y^2 + 5x - 3y + 4 = 0$
- Then which of the following statements is (are) TRUE?
- (A) $\alpha = -1$ (B) $\alpha\beta = 4$
- (C) $\alpha\beta = -4$ (D) $\beta = 4$

Space For Rough Work

9. Let $\omega = -\frac{1}{2} + i\frac{\sqrt{3}}{2}$ and S denote the set of all complex numbers in the Argand plane of the form $a + b\omega + c\omega^2$, where $a, b, c \in [0, 1]$, then
- (A) length of the perimeter of region traced by S is $\pi\sqrt{3}$ units.
 (B) area of region traced by S is $\frac{3\sqrt{3}}{2}$ square units
 (C) length of the perimeter of region traced by S is 6-units.
 (D) area of region traced by S is $\frac{\pi\sqrt{3}}{2}$ square units
10. If $a_n = \frac{\alpha^n - \beta^n}{\alpha - \beta}$ where α and β are the roots of the equation $x^2 - x - 1 = 0$ and $b_n = a_{n+1} + a_{n-1}$. Then
- (A) $b_n = \alpha^n + \beta^n$ (B) $\sum_{n=1}^{\infty} \frac{b_n}{10^n} = \frac{8}{89}$
 (C) $\sum_{n=1}^{\infty} \frac{a_n}{10^n} = \frac{10}{89}$ (D) $a_1 + a_2 + a_3 + \dots + a_n = a_{n+2} - 1$
11. If z is any complex number and $z^2 + az + b = 0$ has two roots and each of which has unit modulus, then
- (A) $|a| \leq 2$ (B) $|b| = 1$
 (C) $\frac{a^2}{b}$ is purely real (D) $\frac{a}{b}$ is real
12. If from the vertex A of the parabola $y^2 = 4ax$ a pair of chords AB and AC be drawn at right angles to one another and with these chords as adjacent sides a rectangle ABCD be made, then the locus of the vertex D of the rectangle is
- (A) an equal parabola (B) a parabola with focus at $(8a, 0)$
 (C) a parabola with directrix as $x - 7a = 0$ (D) not a parabola

Space For Rough Work

(PART – B)**(Integer Type)**

Part-C (01-06) contains six (06) Numerical based questions, the answer of which maybe positive or negative numbers or decimals (e.g. 6.25, 7.00, -0.33, -.30, 30.27, -127.30) and each question carries **+4 marks** for correct answer and **there will be no negative marking**.

1. The value of $\log_2 \left(\sqrt[3]{20 + 14\sqrt{2}} + \sqrt[3]{20 - 14\sqrt{2}} \right)$ is _____
2. The given parabola $y = ax^2 + bx + c$ doesn't intersect the x-axis and passes through the points $A(-2,1)$ and $B(2,9)$. If range of values that x-coordinate of the vertex takes be (k_1, k_2) , then the product $k_1 k_2$ equals
3. Let z_1, z_2, z_3 be complex numbers such that $|z_1| = |z_2| = |z_3| = |z_1 + z_2 + z_3| = 2$ and $|z_1 - z_2| = |z_1 - z_3|$, where $(z_2 \neq z_3)$ then the value of $|z_1 + z_2| \cdot |z_1 + z_3|$ is -----
4. The sum of the infinite series $\frac{1}{2} + \frac{1}{4} + \frac{2}{8} + \frac{3}{16} + \frac{5}{32} + \frac{8}{64} + \frac{13}{128} + \frac{21}{256} + \frac{34}{512} + \dots$ is _____
5. If the normal of the parabola $y^2 = 4x$ drawn at the ends of its latus rectum are tangents to the circle $(x - 3)^2 + (y - 2)^2 = r^2$ then the value r^2 is _____ .
6. If $\sum_{n=1}^{49} \frac{1}{\sqrt{n} + \sqrt{n^2 - 1}} = a + b\sqrt{2}$ for some positive integers a and b then the value of $(a - b)$ is _____

Space For Rough Work

FIITJEE INTERNAL TEST

BATCHES: NWCM2024O1S & O2S_PT-2

PHASE TEST-2: PAPER-1

Code: 100039

JEE ADVANCED LEVEL

ANSWER KEY

ANSWER KEYS

Physics

PART – A

- | | | | |
|---------|--------|--------|--------|
| 1. D | 2. C | 3. A | 4. D |
| 5. BCD | 6. ABD | 7. AD | 8. BCD |
| 9. ABCD | 10. BC | 11. AC | 12. BD |

PART – B

- | | | | |
|---------|----------|---------|------|
| 1. 5 | 2. 5 | 3. 0.06 | 4. 4 |
| 5. 1.60 | 6. 25.12 | | |

Chemistry

PART – A

- | | | | |
|--------|---------|---------|--------|
| 1. D | 2. B | 3. A | 4. C |
| 5. AB | 6. BC | 7. AB | 8. BC |
| 9. ACD | 10. ABC | 11. ACD | 12. AB |

PART – B

- | | | | |
|------|----------|------|-------|
| 1. 3 | 2. 2.35 | 3. 2 | 4. 13 |
| 5. 1 | 6. 11.55 | | |

Mathematics

PART – A

- | | | | |
|-------|---------|---------|--------|
| 1. A | 2. C | 3. D | 4. B |
| 5. CD | 6. ABCD | 7. ABD | 8. BD |
| 9. BC | 10. ACD | 11. ABC | 12. AC |

PART – B

- | | | | |
|------|------|------|------|
| 1. 2 | 2. 4 | 3. 8 | 4. 2 |
| 5. 2 | 6. 2 | | |