

FIITJEE - JEE (Main)

PHYSICS, CHEMISTRY & MATHEMATICS
BATCHES: NWCM2022X1R, NWCM2022X1W, Y1W,Z1W
PHASE TEST – I
Q.P. CODE:

Time Allotted: 3 Hours

Maximum Marks: 300

- Do not open this Test Booklet until you are asked to do so.
- Please read the instructions carefully. You are allotted 5 minutes specifically for this purpose.

Important 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. Each **Section** is further divided into **Two Parts: Part-A & C** in the OMR. Part-B of OMR to be left unused
5. Rough spaces are provided for rough work inside the question paper. No additional sheets will be provided for rough work.
6. No candidate is allowed to carry any textual material, printed or written, bits of papers, clip boards, log tables, slide rule, calculator, cellular phones, pagers and electronic devices ext. except the Admit Card inside the examination hall / room.

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.
4. **Do not fold or make any stray marks on the Answer Sheet.**

C. Marking Scheme for All Two Parts:

- (i) **Part-A (01-20)** – Contains Twenty (20) multiple choice objective questions which have four (4) options each and only one correct option. Each question carries **+4 marks** which will be awarded for every correct answer and **-1 mark** will be deducted for every incorrect answer.
- (ii) **Part-B (01-05)** contains five (05) 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**.

Name of the Candidate : _____

Batch : _____ Date of Examination : _____

Enrolment Number : _____

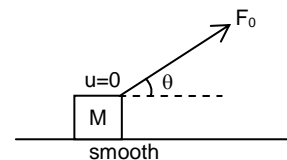
Physics

PART – A

Straight Objective Type

This part contains **20 multiple choice questions**. Each question has 4 choices (A), (B), (C) and (D), out of which **ONLY ONE** is correct.

1. Find the speed of the block when it covers a horizontal distance ℓ . It is given that the block never loses contact with the smooth horizontal surface and the force always acts at an angle θ with the horizontal,



- (A) $\sqrt{\frac{\ell F_0 \cos \theta}{m}}$ (B) $\frac{2\ell F_0 \cos \theta}{m}$
 (C) $\sqrt{\frac{2\ell}{m} F_0 \cos \theta}$ (D) $\frac{\ell F_0 \cos \theta}{m}$

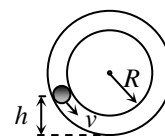
2. A body of mass M is dropped from a height h on a sand floor, If the body penetrates x m into the sand, the average resistance offered by the sand to the body is

- (A) $Mg\left(\frac{h}{x}\right)$ (B) $Mg\left(1 + \frac{h}{x}\right)$ (C) $Mgh + Mgx$ (D) $Mg\left(1 - \frac{h}{x}\right)$

3. An ideal spring with spring-constant k is hung from the ceiling and a block of mass M is attached to its lower end. The mass is released with the spring initially unstretched. Then the maximum extension in the spring is

- (A) $\frac{4Mg}{k}$ (B) $\frac{2Mg}{k}$ (C) $\frac{Mg}{k}$ (D) $\frac{Mg}{2k}$

4. With what minimum speed v must a small ball should be pushed inside a smooth vertical tube from a height h so that it may reach the top of the tube? Radius of the tube is R . (Assume radius of cross-section of tube is negligible in comparison to R)



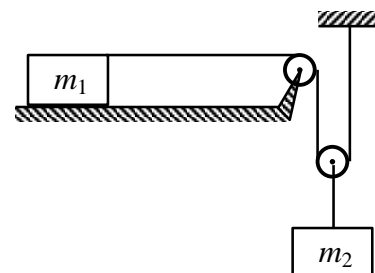
- (A) $\sqrt{2g(h+2R)}$ (B) $\frac{5}{2}R$ (C) $\sqrt{g(5R-2h)}$ (D) $\sqrt{2g(2R-h)}$

5. Two springs A and B ($k_A = 2k_B$) are stretched by applying forces of equal magnitudes at the ends. If the energy stored in A is E , then energy stored in B is

- (A) $\frac{E}{2}$ (B) $2E$ (C) E (D) $\frac{E}{4}$

6. In the arrangement shown in figure. If the surface is smooth, the acceleration of the block m_2 will be

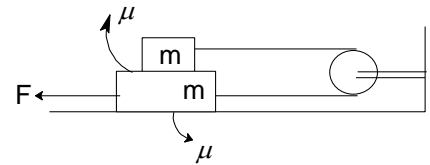
- (A) $\frac{m_2 g}{4m_1 + m_2}$ (B) $\frac{2m_2 g}{4m_1 + m_2}$
 (C) $\frac{2m_2 g}{m_1 + 4m_2}$ (D) $\frac{2m_1 g}{m_1 + m_2}$



7. The position of an object moving along x-axis is given by $x = at^3 + bt + 3$, where x is in metres and t in seconds. If velocity at $t = 1$ s and $t = 4$ s is 0.3 m/s and 27.3 m/s respectively, the value of a and b will be
- (A) $0.6 \text{ m/s}^3, +1.5 \text{ m/s}$ (B) $0.6 \text{ m/s}^3, -1.5 \text{ m/s}$
 (C) $1.6 \text{ m/s}^3, -1.5 \text{ m/s}$ (D) none of these

8. The ratio of radii of curvature at the point of projection and highest point for maximum horizontal range is:
- (A) 1 (B) $2\sqrt{2}$ (C) $\frac{1}{2}$ (D) $\frac{1}{\sqrt{2}}$

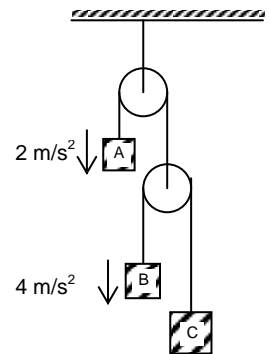
9. A horizontal force F acts on the lower block which is connected with another block kept on it. The two blocks are connected by a light, smooth inextensible string that passes over a fixed pulley. If the co-efficient of friction between all contact surfaces is μ , then minimum value of F so that the block starts moving.
- (A) μmg (B) $2\mu mg$ (C) $3\mu mg$ (D) $4\mu mg$



10. A man moves due east through a distance of 6m, then heads towards north moving through a distance of 8 m and finally climbs a pillar of 10 m. The ratio of magnitude of the displacement to the distance covered is
- (A) 1 : 1 (B) 1 : 2 (C) $1 : \sqrt{2}$ (D) none of these

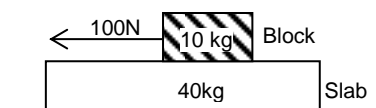
11. If $\vec{A} = 2\hat{i} + 3\hat{j} - \hat{k}$ and $\vec{B} = -\hat{i} + 3\hat{j} + 4\hat{k}$, then projection of \vec{A} on \vec{B} will be
- (A) $\frac{3}{\sqrt{13}}$ (B) $\frac{3}{\sqrt{26}}$ (C) $\sqrt{\frac{3}{26}}$ (D) $\sqrt{\frac{3}{13}}$

12. In the figure shown acceleration of blocks A and B are as shown. The acceleration of block C is
- (A) 8 m/s^2 upward (B) 4 m/s^2 upward
 (C) 2 m/s^2 downward (D) zero



13. A boat which has a speed of 5 km/h in still water crosses a river of width 1 km along the shortest possible path in 15 min. The velocity of the river water in km/h is
- (A) 1 (B) 3
 (C) 4 (D) $\sqrt{41}$

14. A 40kg slab rests on a frictionless floor. A 10kg block rests on top of the slab. The static coefficient of friction between the block and the slab is 0.70 while the kinetic coefficient is 0.50. The 10 kg block is acted upon by a horizontal force of 100N, the resulting acceleration of the slab will be
- (A) 1.00 m/s^2 (B) 1.25 m/s^2
 (C) 1.75 m/s^2 (D) 2.00 m/s^2



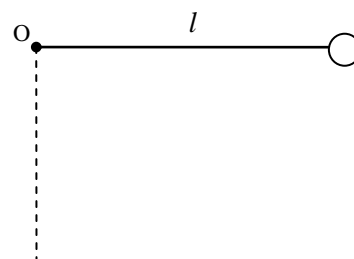
15. Power applied to a particle varies with time as $P = (3t^2 - 2t + 1)$ watt, where t is in second. Find the change in its kinetic energy between $t = 2$ sec and $t = 4$ sec
 (A) 32J (B) 46J
 (C) 61J (D) 100J

16. Velocity of particle moving along x-axis is given as $v = (x^3 - x^2 + 2)$ m/sec. Find the acceleration of particle at $x = 2$ meter.
 (A) 48 m/s² (B) 16 m/s²
 (C) 32 m/s² (D) 8 m/s²

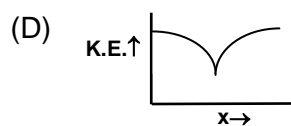
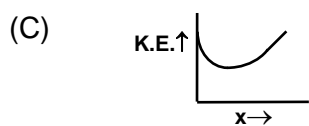
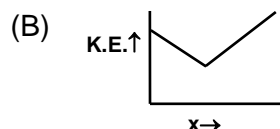
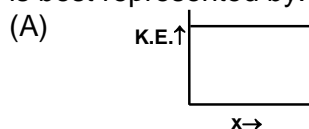
17. A projectile is projected from horizontal plane with velocity u at an angle θ with horizontal. Find out radius of curvature of particle motion when its velocity makes angle $\frac{\theta}{2}$ with horizontal, ($u = 15$ m/s, $\theta = 60^\circ$)
 (A) $5\sqrt{3}$ m (B) $\frac{5}{\sqrt{3}}$ m
 (C) $\frac{45}{8}$ m (D) none of these

18. The unit vector perpendicular to $\vec{i} - 2\hat{j} + \hat{k}$ and $3\vec{i} + \hat{j} - 2\hat{k}$ is
 (A) $\frac{5\vec{i} + 3\hat{j} + 7\hat{k}}{\sqrt{83}}$ (B) $\frac{3\vec{i} + 5\hat{j} + 7\hat{k}}{\sqrt{83}}$
 (C) $\frac{5\vec{i} + 3\hat{j} - 7\hat{k}}{\sqrt{83}}$ (D) $\frac{3\vec{i} - 5\hat{j} + 7\hat{k}}{\sqrt{83}}$

19. A particle is attached to one end of a string whose other end is fixed at point 'O' in the vertical plane. The particle is released from rest when the string is horizontal. Then, the angle made by the string with the vertical when the net acceleration of particle is horizontal
 (A) $\tan^{-1}(\sqrt{2})$ (B) $\tan^{-1}\left(\frac{1}{\sqrt{2}}\right)$
 (C) $\tan^{-1}(2)$ (D) $\tan^{-1}\left(\frac{1}{2}\right)$



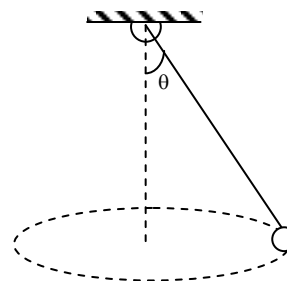
20. A ball is thrown up with a certain velocity at an angle θ to the horizontal. The variation of its kinetic energy K.E. with respect to the horizontal displacement 'X' from the point of projection is best represented by:



PART-B
Numerical Type

1. A person is moving a block of mass $m = 1$ kg with constant speed $v = 1$ m/s. Block is placed on a rough horizontal surface. Coefficient of friction between block and surface is $\mu = 0.5$, if power delivered by man is P watt. Find $\frac{P}{4}$.
2. A passenger is standing 20m behind from a bus. The bus begins to move with constant acceleration 0.9m/s^2 . To catch the bus, the passenger runs at a constant speed v towards the bus. What must be the minimum speed (in m/s) of the passenger so that he may catch the bus?
3. Two particles having position vectors $\vec{r}_1 = (3\hat{i} + 5\hat{j})$ metres and $\vec{r}_2 = (-5\hat{i} - 3\hat{j})$ metres are moving with velocities $\vec{v}_1 = (4\hat{i} + 3\hat{j})$ and $\vec{v}_2 = (a\hat{i} + 7\hat{j})$ m/s. If they collide after 2 seconds, the value of $\frac{a}{5}$ is

4. In the conical pendulum, half of centripetal force (in N) will be ($\theta = 45^\circ$, $m = 0.1$ kg, $g = 10$ m/s²)



5. If $\vec{A} = 4\hat{i} - 2\hat{j} + 6\hat{k}$ and $\vec{B} = -\hat{i} + 2\hat{j} + 3\hat{k}$, find the $\frac{\vec{A} \cdot \vec{B}}{4}$.

Space For Rough Work

Chemistry

PART – A

Straight Objective Type

This part contains **20 multiple choice questions**. Each question has 4 choices (A), (B), (C) and (D), out of which **ONLY ONE** is correct.

- ' a_0 ' is the radius of first orbit of hydrogen atom
' a_1 ' is the radius of second orbit of hydrogen atom
' a_2 ' is the radius of third orbit of hydrogen atom
What is the value of $(a_2 - a_1)$ in terms of a_0 .

(A) $2a_0$ (B) $4a_0$
(C) $5a_0$ (D) $a_0/2$

1. C
- What is the equivalent mass of H_3PO_3 in the following reaction?
 $4H_3PO_3 \xrightarrow{\Delta} 3H_3PO_4 + PH_3$
 [M = Molar mass of H_3PO_3]

(A) $\frac{M}{6}$ (B) $\frac{M}{1.5}$
(C) $1.5 M$ (D) $\frac{M}{4}$

2. B
- The ionic radius of fluoride(F^-) ion is

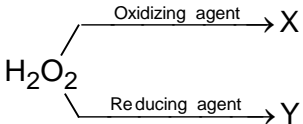
(A) smaller than that of Na^+ (B) greater than that of C^{4-}
(C) greater than that of Al^{3+} (D) smaller than that of Be^{2+}

3. C
- Which of the following is a planar molecule?

(A) PCl_3 (B) BCl_3
(C) NCl_3 (D) ICl_3

4. B
- A container of volume V litre holds an ideal gas at room temperature and pressure. Choose the correct statement.

(A) The number of moles of the gas is $\frac{V}{22.4}$.
(B) The gas present in the container is monoatomic nitrogen gas(N).
(C) The gas may be O_2 and the number of moles of the gas is $\frac{V}{24.4}$.
(D) The gas in the container does not obey the equation $PV = \frac{1}{3}mnc^2$

5. C
- 

In above reaction, X and Y respectively are:

(A) O_2 and H_2O (B) H_2O and O_2
(C) H_2 and O_2 (D) O_2 and H_2

6. A

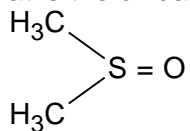
7. Which of the following container can't be used to store NaOH solution?
(A) Plastic (B) Glass
(C) Aluminium (D) Steel
7. C
8. Which of the following atom contains maximum number of electrons with $\ell = 0$?
 ℓ = Azimuthal quantum number
(A) Cr (B) Fe
(C) Cu (D) K
8. B
9. In which of the following molecule the lone pair of central atom is strongly attracted by its nucleus?
(A) NH_3 (B) PH_3
(C) H_2S (D) H_2O
9. B
10. 400 mL of 1 M HCl solution is heated till its volume reduces to 250 mL. In this process 9.125 g of HCl is escaped from the solution. What is the molarity of the remaining solution?
(A) 0.8 M (B) 3 M
(C) 0.6 M (D) 2 M
10. C
11. At constant temperature and number of moles an ideal gas exert 400 mm pressure in a container of volume V_1 mL and 600 mm pressure in container of V_2 mL. What pressure will the gas exert if both the container are connected?
(A) 260 mm (B) 320 mm
(C) 480 mm (D) 372 mm
11. C
12. Which of the following characteristic of normal elements of the periodic table remains constant along a period from left to right?
(A) Effective nuclear charge
(B) Shielding due to inner electrons
(C) Nuclear charge
(D) Azimuthal quantum number of valence electrons
12. B
13. Which is a property of H_2O_2 ?
(A) It blackens the white paint formed with $\text{Ca}(\text{OH})_2$.
(B) It dechlorinates water containing excess of chlorine.
(C) It absorbs CO_2 gas when exposed to atmosphere.
(D) It turns acidified KMnO_4 solution from pink to yellow.
13. B
14. What is the wavelength of the second line of Lyman series of hydrogen spectrum?
(A) $\frac{8}{9R}$ cm (B) $\frac{9}{8R}$ cm
(C) $\frac{9R}{8}$ cm (D) $\frac{8R}{9}$ cm
14. B
15. What is the oxidation number of sulphur in $(\text{NH}_4)_2\text{S}_2\text{O}_8$?
(A) +4 (B) +6
(C) +7 (D) +5

15. B
16. Which of the following is a paramagnetic substance?
 (A) $(\text{CH}_3)_3\overset{\delta+}{\text{N}}\longrightarrow\overset{\delta-}{\text{B}}\text{F}_3$ (B) $\text{O}_2^+\text{BF}_4^-$
 (C) BaO_2 (D) $(\text{CH}_3)_2\overset{\delta+}{\text{O}}\longrightarrow\overset{\delta-}{\text{B}}\text{Cl}_3$
16. B
17. The first ionization enthalpy of
 (A) oxygen atom is higher than nitrogen atom
 (B) O^+ ion is higher than N^+ ion
 (C) oxygen atom is higher than N^+ ion
 (D) N^+ ion is higher than oxygen atom
17. D
18. The rate of effusion of an ideal gas increases with increase in
 (A) $(\Delta P \times \sqrt{P})$ (B) $\frac{\Delta P}{\sqrt{T}}$
 (C) $\frac{T}{\Delta P}$ (D) $\frac{\sqrt{T}}{\Delta P}$
18. B
19. Which substance on electrolysis forms H_2O_2 ?
 (A) $(\text{NH}_4)_2\text{SO}_3$ (B) $(\text{NH}_4)_2\text{SO}_4$
 (C) $(\text{NH}_4)_2\text{CO}_3$ (D) NH_4NO_3
19. B
20. Addition of calcium hydroxide to sea water forms different compounds. Which compound can be easily separated from the reaction mixture?
 (A) NaOH (B) $\text{Mg}(\text{OH})_2$
 (C) KOH (D) CaSO_4
20. B

PART-B Numerical Type

1. How many moles of Fe^{2+} can be completely oxidized by 400 mL of 0.4 M acidified MnO_4^- solution?
 1. 0.8
2. A hydrocarbon upon combustion with excess O_2 produces CO_2 and H_2O . After complete combustion the reaction mixture was found to contain eight moles of CO_2 , two moles of O_2 and six moles of water. How much moles of oxygen is consumed in the reaction?
 2. 11
3. If a hydrogen atom is supplied with energy of 13.6 eV the electron will move to somewhere. What will be the energy of the electron at that place?
 3. Zero
4. The root mean square velocity of nitric oxide(NO) at temperature T_1 is equal to the most probable velocity of helium at T_2 . If the simple ratio of T_1 to T_2 is expressed as x: y, then the value of (x + y) is
 4. 6

5. What is the oxidation number of sulphur in the given compound



5. Zero

Space For Rough Work

Mathematics

PART – A

Straight Objective Type

This part contains **20 multiple choice questions**. Each question has 4 choices (A), (B), (C) and (D), out of which **ONLY ONE** is correct.

1. The number of real solutions of the equation $|x|^2 - 3|x| + 2 = 0$ are:
 (A) 1 (B) 2
 (C) 3 (D) 4
1. D
2. The length of the diameter of the circle which touches x – axis at the point (1, 0) and passes through the point (2, 3) is:
 (A) $\frac{6}{5}$ (B) $\frac{5}{3}$
 (C) $\frac{10}{3}$ (D) $\frac{3}{5}$
2. C
3. The value of $7\log_{10} \frac{16}{15} + 5\log_{10} \frac{25}{24} + 3\log_{10} \frac{81}{80}$ is
 (A) $\log_{10} 2$ (B) $\log_{10} 3$
 (C) $\log_{10} 5$ (D) 0
3. A
4. The equation of the image of the circle $(x - 3)^2 + (y - 2)^2 = 1$ by the mirror $x + y = 19$ is:
 (A) $(x - 14)^2 + (y - 13)^2 = 1$ (B) $(x - 15)^2 + (y - 14)^2 = 1$
 (C) $(x - 16)^2 + (y - 15)^2 = 1$ (D) $(x - 17)^2 + (y - 16)^2 = 1$
4. D
5. The numerical value of $\tan 20^\circ \cdot \tan 80^\circ \cdot \cot 50^\circ$ is equal to
 (A) $\sqrt{3}$ (B) $\frac{1}{\sqrt{3}}$
 (C) $2\sqrt{3}$ (D) $\frac{1}{2\sqrt{3}}$
5. A
6. If $3a - 2b + 5c = 0$, family of straight lines $ax + by + c = 0$ are always concurrent at a point whose co – ordinate is:
 (A) $\left(\frac{3}{5}, \frac{2}{5}\right)$ (B) $\left(-\frac{3}{5}, \frac{2}{5}\right)$
 (C) $\left(\frac{3}{5}, -\frac{2}{5}\right)$ (D) $\left(-\frac{3}{5}, -\frac{2}{5}\right)$
6. C

7. If the point (a^2, a) and $(3, -2)$ lie on opposite side of the line $x + y + 1 = 0$ then a belongs to the interval
 (A) $(-\infty, 1)$ (B) $(1, \infty)$
 (C) $(0, 1)$ (D) none of these

7. **D**

8. Maximum value of the expression $2\sin x + 4\cos x + 3$ is
 (A) $2\sqrt{5} + 3$ (B) $2\sqrt{5} - 3$
 (C) $\sqrt{5} + 3$ (D) none of these

8. **A**

9. $\int \left(x^2 + \frac{1}{x} + 5\sqrt{x} \right) dx =$
 (A) $x^3 + x^2 + \frac{5}{\sqrt{x}} + c$ (B) $\frac{x^3}{3} + \ln x + \frac{10}{3}x^{3/2} + c$
 (C) $\frac{x^3}{3} + \frac{x^2}{2} + \frac{10}{3}x^{3/2} + c$ (D) $\frac{x^3}{3} + \ln x + 10\sqrt{x} + c$

9. **C**

10. If $A + B + C = 180^\circ$ then $\sin^2 A + \sin^2 B + \sin^2 C =$
 (A) $1 + \cos A \cos B \cos C$ (B) $2 + 2 \cos A \cos B \cos C$
 (C) $2 - 2 \cos A \cos B \cos C$ (D) None of these

10. **B**

11. Value of $\cos \frac{\pi}{7} \cos \frac{2\pi}{7} \cos \frac{4\pi}{7}$ be
 (A) $\frac{1}{8}$ (B) $\frac{-1}{16}$
 (C) $\frac{1}{16}$ (D) $\frac{-1}{8}$

11. **D**

12. $\lim_{x \rightarrow 0} \frac{\sin(-x)}{x}$
 (A) 0 (B) 1
 (C) -1 (D) does not exist

12. **C**

13. The set of solution $|x^2 + x| = x^2 + x$ is given by
 (A) $(-\infty, -1)$ (B) $[0, \infty)$
 (C) $[-1, 0]$ (D) $(-\infty, -1] \cup [0, \infty)$

13. **D**

14. Let $y = e^{2x}$. Then $\left(\frac{d^2y}{dx^2}\right)\left(\frac{d^2x}{dy^2}\right)$ is equal to
- (A) 1 (B) e^{-2x}
 (C) $2e^{-2x}$ (D) $-2e^{-2x}$
14. D
15. The angle between the pair of lines joining origin to the points of intersection of $7x^2 + 8y^2 - 4xy + 2x - 4y - 8 = 0$ and $3x - y = 2$ is
- (A) $\tan^{-1}\sqrt{2}$ (B) $\frac{\pi}{3}$
 (C) $\frac{\pi}{4}$ (D) $\frac{\pi}{2}$
15. D
16. The perpendicular bisectors $x + y + 2 = 0$ and $x - y - 1 = 0$ of sides AB and AC of a triangle ABC intersect them at $(-1, -1)$ and $(2, 1)$ respectively. If the midpoint of side BC is P, then the distance of P from the orthocenter of triangle ABC is
- (A) $\sqrt{85}$ (B) $\sqrt{41}$
 (C) $\sqrt{13}$ (D) none of these
16. C
17. A point P (x, y) moves so that the sum of the distances from P to the coordinate axes is equal to the distance from P to the point A $(1, 1)$. The equation of the locus of P in the first quadrant is
- (A) $(x+1)(y+1) = 1$ (B) $(x+1)(y+1) = 2$
 (C) $(x-1)(y-1) = 1$ (D) $(x-1)(y-1) = 2$
17. B
18. The co-ordinates of the orthocentre of the triangle bounded by the lines, $4x - 7y + 10 = 0$; $x + y = 5$ and $7x + 4y = 15$ is:
- (A) $(2, 1)$ (B) $(-1, 2)$
 (C) $(1, 2)$ (D) $(1, -2)$
18. C
19. The expression $\frac{1 + \sin 2\alpha}{\cos(2\alpha - 2\pi) \cdot \tan\left(\alpha - \frac{3\pi}{4}\right)} - \frac{1}{4} \sin 2\alpha \left[\cos \frac{\alpha}{2} + \cot\left(\frac{3\pi}{2} + \frac{\alpha}{2}\right) \right]$ which simplified reduces to
- (A) 1 (B) 0
 (C) $\sin^2 \frac{\alpha}{2}$ (D) $\sin^2 \alpha$
19. C
20. Exact value of $\sec 10^\circ - \tan 10^\circ - \tan 40^\circ$ is equal to
- (A) $\sqrt{3}$ (B) 2
 (C) 0 (D) $\frac{-1}{\sqrt{3}}$
20. C

PART-B
Numerical Type

21. If $\frac{x}{\cos \theta} = \frac{y}{\cos(\theta - 120^\circ)} = \frac{z}{\cos(\theta + 120^\circ)}$, then $x + y + z$ is equal to

21. **0**

22. Two vertices of triangle $(3, -2)$ and $(-2, 3)$ and its orthocentre is $(-6, 1)$. If third vertex is $(-1, k)$ then k is

22. **6**

23. The number of possible straight lines, passing through $(2, 3)$ and forming a triangle with coordinate axes, whose area is 12 sq. units, is

23. **3**

24. Let $\int_0^1 \frac{e^{\sqrt{x}}}{\sqrt{x}} dx = \lambda(e - 1)$. The value of λ is

24. **2**

25. If ratio of the greatest value of $2 - \cos x + \sin^2 x$ to its least value is k , then $4k-7$ is equal to

25. **6**

Space For Rough Work

FIITJEE INTERNAL TEST

BATCHES: NWCM2022X1R, NWCM2022X1W, Y1W,Z1W

PHYSICS, CHEMISTRY & MATHEMATICS

JEE MAIN-PHASE-I

Paper Code

ANSWER KEY

SECTION – I

(PHYSICS)

PART – A

1. C	2. B	3. B	4. D
5. B	6. A	7. B	8. B
9. C	10. D	11. B	12. A
13. B	14. B	15. B	16. A
17. A	18. B	19. A	20. C

PART – B

1. 1.25	2. 6	3. 1.60	4. 0.50
5. 2.50			

SECTION – II

(CHEMISTRY)

PART – A

PART – B

SECTION – III
(MATHEMATICS)

PART – A

PART – B