

FIITJEE - JEE (Main)

PHYSICS, CHEMISTRY & MATHEMATICS
BATCHES: PANINI426-G1 & PANINI426XII-1
PHASE TEST – VI
Q.P. CODE: 101074

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

- Attempt ALL the questions. Answers have to be marked on the OMR sheets.
- This question paper contains **Three Sections**.
- Section-I** is Physics, **Section-II** is Chemistry and **Section-III** is Mathematics.
- Each **Section** is further divided into **Two Parts: Part-A & B** in the OMR.
- Rough spaces are provided for rough work inside the question paper. No additional sheets will be provided for rough work.
- 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:

- Ensure matching of OMR sheet with the Question paper before you start marking your answers on OMR sheet.
- 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.
- OMR sheet contains alphabets, numerals & special characters for marking answers.
- Do not fold or make any stray marks on the Answer Sheet.**

C. Marking Scheme for All Two Parts:

- 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.
- Part-B (01-05)** contains five (05) Numerical based questions, the answer of which may be positive or negative numbers or decimals. If the answer has more than two decimal places, truncate/round off the value to **Two decimal Places** (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

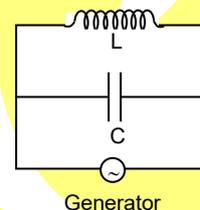
PART – A

Straight Objective Type

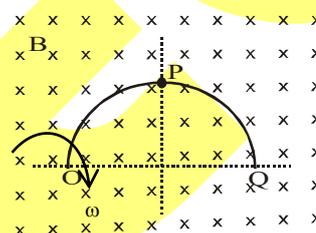
This part contains **20 multiple choice questions**. Each question has 4 choices (A), (B), (C) and (D), out of which **ONLY ONE** is correct.

1. Lenz's law is a consequence of
 (A) conservation of momentum (B) conservation of current
 (C) conservation of charge (D) conservation of energy

2. For the circuit shown in the figure, the current through the inductor is 0.6 A, while the current through the capacitor is 0.4 A. The current drawn from the generator is
 (A) 1.0 A (B) 0.4 A
 (C) 0.6 A (D) 0.2 A



3. The figure shows a semi-circular conducting ring of radius a , which is rotated with constant angular velocity ω about an axis passing through O and parallel to field B as shown. Identify the correct value of potential difference



(A) $V_P - V_Q = \frac{1}{2} B\omega a^2$

(B) $V_Q - V_O = 2B\omega a^2$

(C) $V_P - V_O = \frac{1}{4} B\omega a^2$

(D) The maximum value of $|V_P - V_Q| = \frac{\pi a^2 \omega B}{2}$

4. Magnetic flux through a circuit of resistance R changes by an amount $\Delta\phi$ in a time Δt . Total quantity of electric charge Q that passes any point in the circuit during the time Δt is represented by

(A) $Q = \frac{1}{R} \frac{\Delta\phi}{\Delta t}$

(B) $Q = \frac{\Delta\phi}{R}$

(C) $Q = \frac{\Delta\phi}{\Delta t}$

(D) $Q = R \frac{\Delta\phi}{\Delta t}$

5. (a) The wavelength of microwaves is greater than that of UV waves.
 (b) The wavelength of IR ray is lesser than that of UV rays.
 (c) The wavelength of microwaves is lesser than that of IR rays.
 (d) Gamma rays have the shortest wavelength in the electromagnetic spectrum.

(A) (a) and (b) are true

(B) (b) and (c) are true

(C) (c) and (d) are true

(D) (a) and (c) are true

6. A charged particle moves through a magnetic field perpendicular to its direction then:

(A) The momentum changes but the kinetic energy is constant

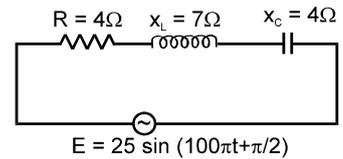
(B) Both momentum and kinetic energy of the particle are not constant

(C) Both momentum and kinetic energy of the particle are constant

(D) Kinetic energy changes but the momentum is constant.

Space For Rough Work

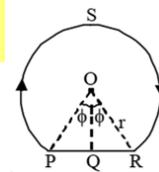
7. In the series LCR circuit as shown in figure, the heat developed in 80 seconds and amplitude of wattless current is:
 (A) 4000 J, 3A (B) 8000 J, 3A
 (C) 4000 J, 4A (D) 8000 J, 5A



8. In an L-C circuit:
 (A) the energy stored in L as well as in C is magnetic energy.
 (B) the energy stored in L is magnetic but in C it is electrical.
 (C) the energy stored in L is electrical but in C it is magnetic.
 (D) the energy stored in L as well as in C is electrical energy.
9. A copper rod is moving with uniform velocity V parallel to a long straight wire carrying a current I . The rod itself is perpendicular to the wire with its ends at distances a and b , from it. Calculate the emf induced in the rod.
 (A) $\frac{\mu_0 i V}{2\pi} \times \frac{b}{a}$ (B) $\frac{\mu_0 i V}{2\pi} \ln \frac{b+a}{a}$ (C) $\frac{\mu_0 i V}{2\pi} \ln \frac{b-a}{a}$ (D) $\frac{\mu_0 i V}{2\pi} \ln \frac{b}{a}$
10. The magnetic field of earth at the magnetic equator is approximately 4×10^{-5} T. The radius of earth is 6.4×10^6 m. Then the dipole moment of the earth will be nearly of the order of
 (A) 10^{10} A m² (B) 10^{20} A m² (C) 10^{12} A m² (D) 10^{16} A m²

11. The total magnetic induction at point O due to curve portion and straight portion in the following figure, will be

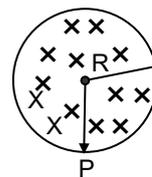
- (A) $\frac{\mu_0 i}{2\pi r} [\pi - \phi + \tan \phi]$
 (B) $\frac{\mu_0 i}{2\pi r}$
 (C) 0
 (D) $\frac{\mu_0 i}{2\pi r} [\pi - \phi - \tan \phi]$



12. If a dc of value of I amp is superimposed on an alternating current $i = I_0 \sin \omega t$ flowing through a wire, the effective value of the resulting current in the circuit is
 (A) $(I^2 + I_0^2)^{1/2}$ (B) $(I^2 + \frac{I_0^2}{2})^{1/2}$ (C) $[I^2 + \frac{1}{2} I_0^2]^{1/2}$ (D) $(I + \frac{I_0}{2})^{1/2}$
13. A plane e.m. wave of frequency 30 MHz travel in free space along the X-direction. The electric field component of the wave at a particular point of space and time is $E = 6$ V/m along Y-direction. Its magnetic field component B at this point would be
 (A) 2×10^{-8} T along Z-direction. (B) 6×10^{-8} T along X-direction.
 (C) 2×10^{-8} T along Y-direction. (D) 6×10^{-8} T along Z-direction.

Space For Rough Work

14. A uniform magnetic field of induction B is confined to a cylindrical region of radius R . The magnetic field is increasing at the rate of $\left(\frac{dB}{dt}\right)$ (tesla/sec). An electron of charge e , placed at point P on the periphery of the field experiences an initial acceleration of

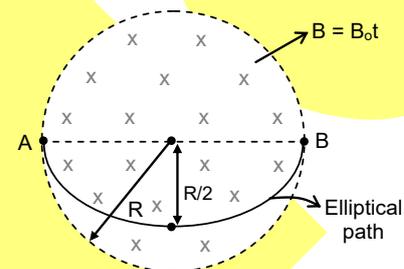


- (A) $\frac{1}{2} \frac{eR}{m} \frac{dB}{dt}$ towards left
 (B) $\frac{1}{2} \frac{eR}{m} \frac{dB}{dt}$ towards right
 (C) $\frac{eR}{m} \frac{dB}{dt}$ towards left
 (D) zero

15. A proton has kinetic energy $E=100$ keV which is equal to that of a photon. The wavelength of photon is λ_2 and that of proton is λ_1 . The ratio of λ_2/λ_1 is proportional to

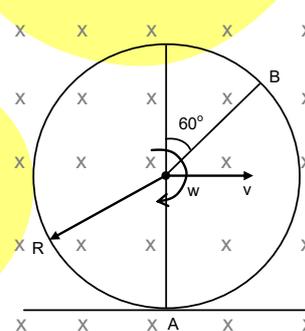
- (A) E^2 (B) $E^{1/2}$ (C) E^{-1} (D) $E^{-1/2}$

16. There is a uniform time varying magnetic field in a circular region as shown in the figure. Find out the potential difference across 2 point along an elliptical path as shown in figure.



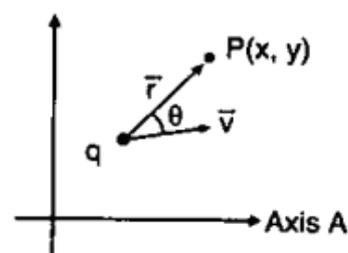
- (A) $\frac{\pi R^2}{2} B_0$
 (B) $\frac{\pi R^2}{3} B_0$
 (C) $\frac{\pi R^2}{4} B_0$
 (D) $\frac{\pi R^2}{5} B_0$

17. A conducting wheel is rolling on the ground in a uniform magnetic field B_0 then the emf induced between points A and B; $V_A - V_B$ will be



- (A) $B_0 w^2 (\sqrt{3} R)$
 (B) $-B_0 w^2 \sqrt{3} R$
 (C) $B_0 w^2 \sqrt{2} R$
 (D) $-B_0 w^2 \left(\frac{\sqrt{5}}{2}\right) R$

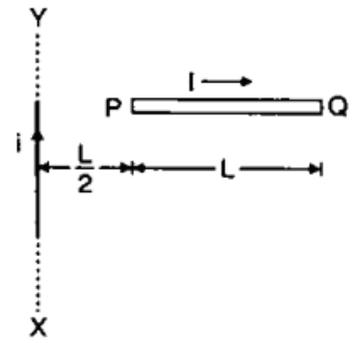
18. A point charge q is in motion with velocity \vec{v} relative to an inertial axis "A". The instantaneous location of q with respect to a fixed observation point P is shown. \vec{B} , the magnetic field at point P is given by



- (A) $\vec{B} = \frac{\mu_0 q (\vec{r} \times \vec{v})}{4\pi r^3}$
 (B) $\vec{B} = \frac{\mu_0 q (\vec{v} \times \vec{r})}{2\pi r^3}$
 (C) $\vec{B} = \frac{\mu_0 q (\vec{v} \times \vec{r})}{4\pi r^3}$
 (D) ZERO

Space For Rough Work

19. A conductor PQ of length L, carries a current I. PQ is placed perpendicular to a long straight conductor XY carrying a current i as shown. The force acting on PQ is F.



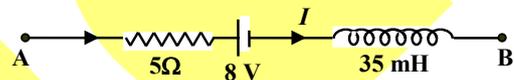
- (A) $F = \frac{\mu_0 i I}{2\pi} \ln 2$; upwards
 (B) $F = \frac{\mu_0 i I}{2\pi} \ln 2$; downwards
 (C) $F = \frac{\mu_0 i I}{2\pi} \ln 3$; upwards
 (D) $F = \frac{\mu_0 i I}{2\pi} \ln 3$; downwards

20. A long straight wire along the z-axis carries a current I in the negative z-direction. The magnetic vector field \vec{B} at a point having coordinates (x, y) in the z = 0 plane is

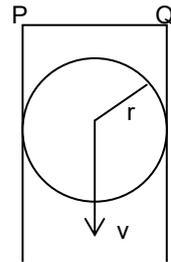
- (A) $\frac{\mu_0 I (y\hat{i} - x\hat{j})}{2\pi(x^2 + y^2)}$ (B) $\frac{\mu_0 I (x\hat{i} + y\hat{j})}{2\pi(x^2 + y^2)}$ (C) $\frac{\mu_0 I (x\hat{j} - y\hat{i})}{2\pi(x^2 + y^2)}$ (D) $\frac{\mu_0 I (x\hat{i} - y\hat{j})}{2\pi(x^2 + y^2)}$

PART-B
Numerical Type

1. The network shown in Figure is part of a complete circuit. If at a certain instant the current (I) is 5A, and is decreasing at a rate of 10^3 A/s, then $V_B - V_A =$



2. A vertical ring of radius 'r' and resistance 'R' slips vertically between two frictionless and resistance less vertical rails. The rails which are joined at top there is uniform magnetic field B perpendicular to plane of ring and the rails.



When speed of ring is v, current induced in section PQ is $\frac{nBv}{R}$ find n

3. A coil, a capacitor and an AC source of rms voltage 24 V are connected in series. By varying the frequency of the source, a maximum rms current of 6A is observed. If coil is connected to a battery of emf 12 volt and internal resistance 4Ω , then current through it in steady state in Amperes is _____
4. An LCR series circuit with 100Ω resistance is connected to an ac source of 200 V and angular frequency 300 rad/s. When only capacitance is removed, the current lags behind the voltage by 60° , when only the inductance is removed the current leads the voltage by 60° , then the power dissipated in the LCR circuit is _____ watts.
5. An inductor of inductance 2 mH is connected across a charged capacitor of capacitance $5 \mu\text{F}$ and the resulting LC circuit is set oscillating at its natural frequency. Let Q denote the instantaneous charge on the capacitor and I the current in the circuit. It is found that the maximum value of charge is $200 \mu\text{C}$. When charge = $100 \mu\text{C}$ the value of $\left| \frac{dI}{dt} \right|$ is 10^n As^{-1} . Find the value of 'n/5'.

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.

- In a primitive cubic unit cell of a metal, the metal atoms are present at the
 (A) corners (B) corners and face centres
 (C) corners and body centre (D) face centre and body centre
- The boiling point of four liquids follows the order:
 $P > Q > R > S$
 The vapour of which liquid will be present in maximum amount in the saturated vapour of the mixture of the liquids?
 (A) P (B) Q (C) R (D) S
- $\text{NH}_3 + \text{O}_2 \xrightarrow[700^\circ\text{C}]{\text{Pt}} \text{Product}$
 The nitrogen containing product formed in the above reaction is:
 (A) NO (B) N_2 (C) N_2O (D) NH_2NH_2
- Which of the following property of group-15 elements increases on moving down the group?
 (A) Basic strength of hydrides (B) Stability of +3 oxidation state
 (C) Acidic nature of oxides (D) Bond energy of trifluorides
- Which of the following substance does not produce O_2 gas on heating?
 (A) O_3 (B) SO_3 (C) H_2SO_4 (D) H_2SO_3
- Which can easily form nascent oxygen atom on heating?
 (A) HClO (B) HClO_2 (C) HClO_3 (D) HClO_4
- The strongest acid out of the following is:
 (A) HF (B) HCl (C) HBr (D) HI
- What is the coordination number of a metallic crystal having FCC unit cell?
 (A) 6 (B) 8 (C) 12 (D) 10
- 100 mL of 0.2 M CaCl_2 solution is isotonic with [Assume complete dissociation of salts]
 (A) 100 mL of 0.2 M $\text{C}_6\text{H}_{12}\text{O}_6$ solution (B) 200 mL of 0.3 M NaCl solution
 (C) 100 mL of 0.3 M KCl solution (D) 200 mL of 0.1 M $\text{Al}_2(\text{SO}_4)_3$ solution
- Which of the following does not contain lone pair(s) on central atom?
 (A) XeF_6 (B) XeO_4 (C) XeO_3 (D) XeF_4
- Which of the following behaves as a bleaching agent in moist condition?
 (A) SO_2 (B) H_2S (C) SO_3 (D) Na_2S
- The crystal having no empty voids is
 (A) NaCl (B) ZnS (C) Na_2O (D) none of these

Space For Rough Work

13. Which interhalogen compound does not exist?
 (A) IF_3 (B) FCl_3 (C) BrF_3 (D) ClF_3
14. What is the co-ordination no. of Na^+ ions in NaCl crystal?
 (A) 4 (B) 6 (C) 3 (D) 8
15. The vapour pressure of a mixture of liquids P and Q is expressed in the following way.
 $V.P = (240 + 120 X_P)$ mm of Hg
 Where X_P is the mole fraction of P
 Which of the following pure liquid has the highest vapour pressure?
 (A) P (B) Q
 (C) Both have same V.P (D) Unpredictable
16. Which of the following substance produces N_2 gas on heating?
 (A) $(\text{NH}_4)_2\text{Cr}_2\text{O}_7$ (B) BaN_3 (C) NH_4NO_2 (D) All are correct
17. The correct hydrolysis order of the following compounds is
 (A) $\text{XeF}_2 > \text{XeF}_4 > \text{XeF}_6$ (B) $\text{XeF}_4 > \text{XeF}_6 > \text{XeF}_2$
 (C) $\text{XeF}_6 > \text{XeF}_4 > \text{XeF}_2$ (D) $\text{XeF}_2 = \text{XeF}_4 = \text{XeF}_6$
18. In ZnS unit cell, the sum of the coordination numbers of Zn^{2+} and S^{2-} ions is
 (A) 12 (B) 8 (C) 6 (D) 10
19. The van't Hoff factor of a salt MX which ionizes as $\text{M}^+(\text{aq})$ and $\text{X}^-(\text{aq})$ ions will be highest if its degree of dissociation is
 (A) 0.04 (B) 0.8 (C) 0.6 (D) 0.02
20. Which ore undergoes self-reduction during heating with O_2 ?
 (A) MnO_2 (B) PbS (C) ZnCO_3 (D) AgNO_3

PART-B
Numerical Type

1. What is the atomic number of the metal which can be extracted from malachite?
2. Roasting of zinc blend converts zinc into ZnO and evolves as gas(X). What is the molar mass of (X) in g mol^{-1} unit?
3. How many electrons are present in the outermost orbit of the inert gas which gets easily adsorbed on coconut charcoal?
4. Cl^- , F^- , CO_3^{2-} , SO_4^{2-} , PO_4^{3-} , Na^+ , Mg^{2+}
 What is the ionic mass of the ion in g mol^{-1} unit which is required by minimum quantity to coagulate a positively charged colloid?
5. According to Freundlich adsorption isotherm what should be the value of $\frac{1}{n}$ (n is an empirical constant in $\frac{x}{m} = Kp^{1/n}$) so that adsorption will be directly proportional to pressure?

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.

- The value of $\int \frac{dx}{(e^x + 1)(2e^x + 3)}$ is equal to

(A) $x + \ln(e^x + 1) - \frac{2}{3} \ln(2e^x + 3) + c$ (B) $\frac{1}{3}x - \ln(e^x + 1) + \frac{2}{3} \ln(2e^x + 3) + c$
 (C) $x - \frac{2}{3} \ln(e^x + 1) + \ln(2e^x + 3) + c$ (D) $\frac{1}{3}x + \ln(e^x + 1) - \frac{2}{3} \ln(2e^x + 3) + c$
- Let $f(x) = \int_1^x \sqrt{2-t^2} dt$. Then the real roots of the equation $x^2 - f'(x) = 0$ are

(A) (0, 1) (B) $\pm \frac{1}{\sqrt{2}}$ (C) $\pm \frac{1}{2}$ (D) ± 1
- $\int \frac{xe^x}{(x+1)^2} dx$ is equal to

(A) $\frac{2e^x}{x+1} + c$ (B) $\frac{e^x}{(x+1)^2} + c$ (C) $-\frac{e^x}{(x+1)^3} + c$ (D) $\frac{e^x}{x+1} + c$
- $\int \sin 2x \cdot \log \cos x dx$ is equal to

(A) $\cos^2 x \left(\frac{1}{2} + \log \cos x \right) + k$ (B) $\cos^2 x \log \cos x + k$
 (C) $\cos^2 x \left(\frac{1}{2} - \log \cos x \right) + k$ (D) $\sin^2 x \log \cos x + k$
- If $f(x) = f(a-x)$; then $\int_0^a x f(x) dx$ equals

(A) $\frac{a}{2} \int_0^a f(x) dx$ (B) $a \int_0^a f(x) dx$ (C) $\int_0^a f(x) dx$ (D) $2a \int_0^a f(x) dx$
- The acute angle between curves $y = |x^2 - 1|$ and $y = |x^2 - 3|$ with abscissa x greater than 0 is (at intersection point)

(A) $\tan^{-1} \left(\frac{\sqrt{2}}{7} \right)$ (B) $\tan^{-1} \left(\frac{-1}{7} \right)$ (C) $\tan^{-1} \left(\frac{4\sqrt{2}}{7} \right)$ (D) not finite

Space For Rough Work

7. If m is the slope of common tangent to $y = x^2 - x + 1$, and $y = x^2 - 3x + 1$ then m is
 (A) 2 (B) $-\frac{1}{2}$ (C) -2 (D) $\frac{1}{2}$
8. The least natural number a for which $x + ax^{-2} > 2$ for all $x \in \mathbb{R}^+$
 (A) 1 (B) 2 (C) 5 (D) 9
9. If m and n are positive integers and $f(x) = \int_1^x (t-a)^{2n} (t-b)^{2m+1} dt$, $a \neq b$, then
 (A) $x = b$ is a point of local minimum (B) $x = b$ is a point of local maximum
 (C) $x = a$ is a point of local minimum (D) $x = a$ is a point of local maximum
10. $\int_{1/4}^4 \frac{1}{x} \sin\left(x - \frac{1}{x}\right) dx =$
 (A) $-\sin\left(\frac{15}{4}\right)$ (B) $\sin\left(\frac{15}{4}\right)$ (C) $\frac{15}{4}$ (D) 0
11. Angle between two curves $x^2y = 1$ and $y = x^2$ is
 (A) $\tan^{-1}\frac{3}{4}$ (B) $\tan^{-1}\frac{4}{3}$ (C) $\tan^{-1}\frac{5}{12}$ (D) none of these
12. If $f(x) = x^5 - 5x^4 + 5x^3 - 10$ has local maximum and minimum at $x = p$ and $x = q$, respectively, then (p, q) is equal to
 (A) (0, 1) (B) (1, 3) (C) (1, 0) (D) none of these
13. Let f be differentiable for all x . If $f(1) = -2$ and $f'(x) \geq 2$ for all $x \in [1, 6]$, then
 (A) $f(6) < 7$ (B) $f(6) \geq 8$ (C) $f(6) \geq 5$ (D) $f(6) \leq 5$
14. Let $f(x)$ be an increasing function defined on $(0, \infty)$. If $f(2a^2 + a + 1) > f(3a^2 - 4a + 1)$, then the number of possible integers in the range of a is
 (A) 1 (B) 2 (C) 3 (D) 4
15. $\int \frac{\cos 4x + 1}{\cot x - \tan x} dx = p \cos 4x + c$ is possible for:
 (A) $p = \frac{-1}{2}$ (B) $p = \frac{-1}{4}$ (C) $p = \frac{-1}{8}$ (D) No real p
16. The value of the definite integral, $\int_0^{\pi/2} \frac{\sin 5x}{\sin x} dx$ is
 (A) 0 (B) $\frac{\pi}{2}$ (C) π (D) 2π

Space For Rough Work

17. If $f'(x) = f(x) + \int_0^1 f(x) dx$ and given $f(0) = 1$, then $\int f(x) dx$ is equal to:
- (A) $\frac{2}{3-e} e^x + \left(\frac{3-e}{1-e}\right)x + C$ (B) $\frac{2}{3-e} e^x + \left(\frac{1-e}{3-e}\right)x + C$
 (C) $\frac{3}{2-e} e^x + \left(\frac{1+e}{3+e}\right)x + C$ (D) $\frac{2}{2-e} e^x + \left(\frac{1-e}{3+e}\right)x + C$
18. If $\int \frac{\operatorname{cosec}^2 x - 2010}{\cos^{2010} x} dx = -\frac{f(x)}{(g(x))^{2010}} + C$; where $f\left(\frac{\pi}{4}\right) = 1$; then the number of solutions of the equation $\frac{f(x)}{g(x)} = \{x\}$ in $[0, 2\pi]$ is/are : (where $\{.\}$ represents fractional part function)
- (A) 0 (B) 1 (C) 2 (D) 3
19. Let a function $f : \mathbb{R} \rightarrow \mathbb{R}$ be defined as $f(x) = x + \sin x$. Then value of $\int_0^{2\pi} f^{-1}(x) dx$ will be :
- (A) $2\pi^2$ (B) $2\pi^2 - 2$ (C) $2\pi^2 + 2$ (D) π^2
20. If $\lim_{a \rightarrow \infty} \frac{1}{a} \int_0^{\infty} \frac{x^2 + ax + 1}{1 + x^4} \cdot \tan^{-1}\left(\frac{1}{x}\right) dx$ is equal to $\frac{\pi^2}{k}$ where $k \in \mathbb{N}$ equals
- (A) 4 (B) 8 (C) 16 (D) 32

PART-B
Numerical Type

1. Let $F(x) = f(x) + f(1/x)$, where $f(x) = \int_1^x \frac{\ln t}{(1+t)} dt$, then $F(e)$ is equal to
2. Number of critical points of $f(x) = \frac{x}{1+x^2}$ is
3. If $x + 4y = 14$ is normal to curve $y^2 = \alpha x^3 - \beta$ at $P(2, 3)$ then value of $\alpha + \beta =$
4. $\lim_{x \rightarrow 0} \int_0^x \frac{t^2 dt}{(x - \sin x)\sqrt{a+t}} = 1$, then the value of $5 + [\sin^{-1} \sin a]$ is (where $[]$ denotes greatest integer function)
5. Let $f : \mathbb{R} \rightarrow \mathbb{R}$, $f(x) = \begin{cases} |x - [x]|, & [x] \text{ is odd} \\ x - [x + 1], & [x] \text{ is even} \end{cases}$ where $[]$ denotes greatest integer function, then $\int_{-2}^4 f(x) dx$ is equal to

Space For Rough Work

FIITJEE INTERNAL TEST

BATCHES: PANINI426-G1 & PANINI426XII-1

Phase – VI

PHYSICS, CHEMISTRY & MATHEMATICS

JEE MAIN-PHASE
ANSWER KEY

Paper Code
101074

SECTION – I

(PHYSICS)

PART – A

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

PART – B

- | | | | |
|--------|------|---------|--------|
| 1. 2 | 2. 8 | 3. 1.50 | 4. 400 |
| 5. 0.8 | | | |

SECTION – II

(CHEMISTRY)

PART – A

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

PART – B

- | | | | |
|-------|-------|------|-------|
| 1. 29 | 2. 64 | 3. 8 | 4. 95 |
| 5. 1 | | | |

SECTION – III
(MATHEMATICS)

PART – A

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

PART – B

- | | | | |
|--------|------|------|------|
| 1. 0.5 | 2. 2 | 3. 9 | 4. 4 |
| 5. 0 | | | |