FIITJEE - JEE (Main)

PHYSICS, CHEMISTRY & MATHEMATICS
BATCH: NWCMPA223A1
PHASE TEST – I
Q.P. CODE: 100054

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 & B** in the OMR.
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 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 :_____

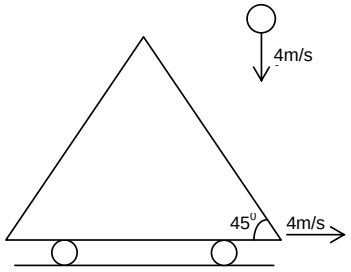
Physics

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. A small ball falling vertically downward with constant velocity 4 m/s strikes elastically a massive wedge moving with velocity 4 m/s horizontally as shown. The velocity of the rebound of the ball is



(A) $4\sqrt{2}$ m/s

(B) $4\sqrt{3}$ m/s

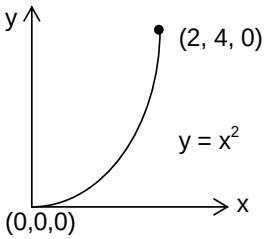
(C) 4 m/s

(D) $4\sqrt{5}$ m/s

2. Three particles ABC starts moving on the periphery of an equilateral triangle of side a with velocity v. The velocity of approach of A towards B at time t = $\frac{a}{2v}$ is

(A) Zero
(B) 2v sin 60
(C) 3v cos 60^0
(D) 2v sin 30

3. By applying a force $\vec{F} = (3xy - 5z)\hat{j} + 4z\hat{k}$ a particle is moved along the path $y = x^2$ from point (0, 0, 0) to (2, 4, 0). The work done by the force F on the particle is



(A) $\frac{280}{5}$ unit
(B) $\frac{140}{5}$ unit
(C) $\frac{232}{5}$ unit
(D) $\frac{192}{5}$ unit

4. A particle has an initial velocity of $3\hat{i} + 4\hat{j}$. and an acceleration of $0.4\hat{i} + 0.3\hat{j}$. Its speed after 10 s is

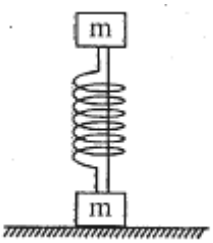
(A) 10 units
(B) 7 units
(C) $7\sqrt{2}$ units
(D) 8.5 units

5. In projectile motion power of the gravitational force

(A) is constant throughout
(B) is –ve through out
(C) varies linearly with time
(D) is positive for complete path

Space For Rough Work

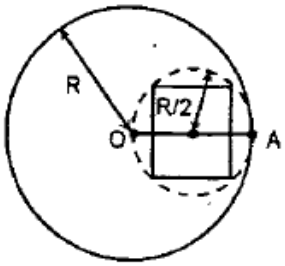
6. A system consists of two identical cubes, each of mass m, linked together by a compressed weightless spring of force constant k. The cubes are also connected by a thread which is burnt at a certain moment. The minimum value of initial compression x_0 of the spring for which lower cube bounce up after the thread is burnt is :-



(A) $\frac{2mg}{k}$ (B) $\frac{3mg}{k}$

(C) $\frac{3mg}{2k}$ (D) $\frac{6mg}{2k}$

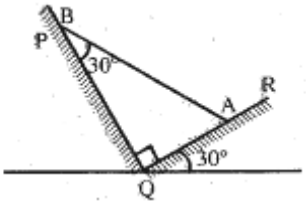
7. There is a thin uniform disc of radius R and mass per unit area σ, in which a hole of radius Rl2 has been cut out as shown in the figure. Inside the hole a square plate of same mass per unit area σ is inserted so that its comers touch the periphery of the hole. Find centre of mass of the system.



(A) $\frac{R[2-\pi]}{2[3\pi+2]}$ (B) $\frac{R[1-\pi]}{2[2\pi+1]}$

(C) $\frac{2R\pi}{2[3\pi+2]}$ (D) $\frac{3R\pi}{2[2\pi+1]}$

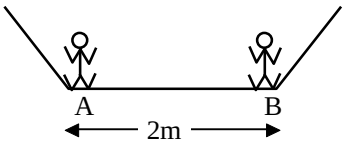
8. A rod of length L is sliding on a frictionless surface as shown in the figure. Velocity of end A is 4 m/s along the wall. Find the velocity of end B, when end B makes 30° with wall PQ.



(A) 8 m/s (B) $2\sqrt{3}$ m/s

(C) $4\sqrt{3}$ m/s (D) $\frac{4}{\sqrt{3}}$ m/s

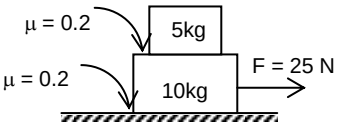
9. Two persons A and B of weight 80 kg and 50 kg respectively are standing at opposite ends of a boat of mass 70 kg and length 2m, at rest. When they interchange their positions then displacement of the centre of mass of the boat will be



(A) 60 cm towards left (B) 30 cm towards right

(C) 30 cm towards left (D) stationary

10. Two blocks of masses 10 kg and 5 kg are placed one over the other on a horizontal plane as shown in the figure. If co-efficient of friction is μ = 0.2, and an external force F = 25 N is applied horizontally on the lower blocks, then, the force of friction between the two blocks is

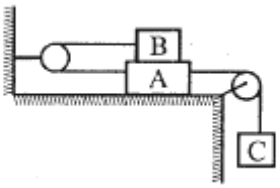


(A) 30 N (B) 25 N

(C) zero (D) 20 N

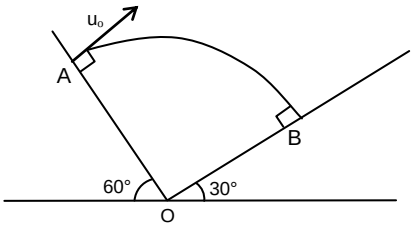
Space For Rough Work

11. For the arrangement shown in figure, the masses of the blocks are rn_A = 2kg, m_B = 1kg, m_C = 1kg. The frictional force between the blocks A and B and the tension in string connecting A and B are respectively (coefficient of friction between any two surfaces is 0.5)



(A) 0, 5 N (B) 0, 0
(C) 10 N, 5 N (D) 5 N, 0

12. A projectile is thrown from one inclined plane in a direction perpendicular for this plane. It is observed that this projectile hits the other incline plane perpendicular to that plane, then the ratio $\frac{OA}{OB}$ will be

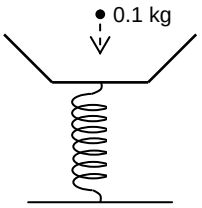


(A) $2\sqrt{3}$ (B) $\frac{1}{2\sqrt{3}}$ (C) $\sqrt{3}$ (D) $\frac{1}{\sqrt{3}}$

13. A spring has a length $l_1$when tension in it is n_1(in N). It has a length l_2 when tension is n_2 (in N). Find its spring constant:

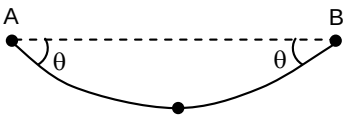
(A) $\frac{(n_2l_2 - n_1l_1)}{(l_1 - l_2)}$ (B) $\frac{(n_1 - n_2)}{(l_1 - l_2)}$ (C) $\frac{(n_2 - n_1)}{(l_1 - l_2)}$ (D) $\frac{(n_1l_1 - n_2l_2)}{(l_1 - l_2)}$

14. A massless platform is kept on a light elastic spring, as shown in the figure. When sand particles of 0.1 kg mass is dropped on the pan from a height of 0.24 m, the particle strikes the pan and the spring is compressed by 0.01 m. From what height should the particle be dropped to cause a compression of 0.04 m?



(A) 0.96 m (B) 2.96 m
(C) 3.96 m (D) 0.48 m

15. A rope of mass m hangs between two fixed points A and B at the same level, as shown in figure. The tension at the mid point of the chain



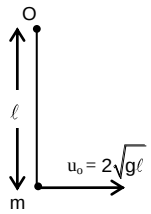
(A) mg (B) mg cot θ
(C) 2mg cot θ (D) $\frac{mg\cot\theta}{2}$

16. A particle moves in x-y plane such that it's velocity $\vec{v}$ is given by: $\vec{v} = k(y\hat{i} + x\hat{j})$, equation of it's path will be

(A) $y = x^2$ + constant (B) $y^2 = x$ + constant
(C) xy = constant (D) $y^2 = x^2$ + constant

Space For Rough Work

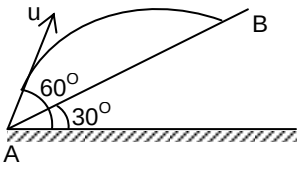
17. Figure shows a bob hanging from a point "O" through a string of length "ℓ". The bob is given a velocity $u_o = 2\sqrt{g\ell}$ as shown. The maximum height raised by bob above lowest point will be



(A) 2ℓ (B) $\frac{48\ell}{27}$

(C) $\frac{50\ell}{27}$ (D) $\frac{52\ell}{27}$

18. The time taken by the projectile to reach from A to B is t. Then the distance AB is equal to



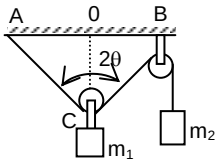
(A) $\frac{ut}{\sqrt{3}}$ (B) $\frac{\sqrt{3}\ ut}{2}$

(C) $\sqrt{3}\ ut$ (D) 2 ut

19. Starting from rest a particle moves in a straight line with acceleration $a = \ 2 + |t - 2|$ m/s^2. Velocity of particle at the end of 4 sec will be

(A) 16 m/s (B) 20 m/s (C) 8 m/s (D) 12 m/s

20. In the arrangement shown in the figure, if v_1 and v_2 are the instantaneous velocities of masses m_1 and m_2, respectively, and angle ACB is 2θ at the instant, then



(A) $\theta = \cos^{-1}\left(\frac{v_1}{2v_2}\right)$ (B) $\theta = \cos^{-1}\left(\frac{v_2}{2v_1}\right)$

(C) $\theta = \tan^{-1}\left(\frac{v_1}{2v_2}\right)$ (D) $\theta = 5\sin^{-1}\left(\frac{v_1}{v_2}\right)$

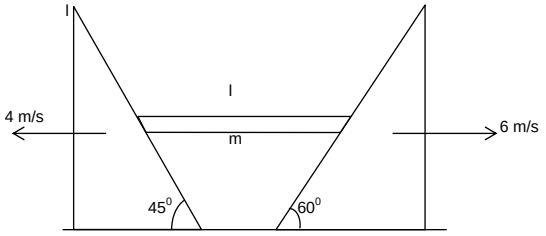
PART-B
Numerical Type

1. Velocity of a particle at any instant is given by the equation $\vec{V} = (3\hat{i} + 2t^2\hat{j})m/s$. Tangential acceleration of the particle at t = 2s is

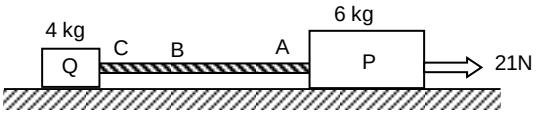
Space For Rough Work

2. A plank of mass 30 kg of square shaped of side 50 m is placed on the ice slab. The coefficient of friction between them is zero. Four person of masses 40 kg, 50 kg, 60 kg and 70 kg are standing at adjacent corners of the plank in the given order. If they meet at the centre then the magnitude of the displacement of the plank in meter

3. A rod of mass m and length ℓ is placed on two moving wedges as shown in figure. All surfaces are smooth. It's given that rod is neither rotating nor leaving contact with wedges. It's given that velocity of rod along vertically downward direction is



4. Two blocks of masses 6 kg and 4 kg connected by a rope of mass 4 kg are resting on frictionless floor as shown. If a constant force of 21 Newton is applied to 6 kg block, tension (In N) in the rope at point B is (CB : BA = 1 : 3)



5. Potential energy of a particle moving along x-axis is given by U = $\frac{x^3}{3}-\frac{9x^2}{2}+20x$. Find out position of unstable equilibrium state.

Space For Rough Work

Chemistry

PART – A

Straight Objective Type

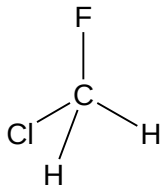
This part contains **20 multiple choice questions.** Each question has 4 choices (A), (B), (C) and (D), out of which **ONLY ONE** is correct.

1. If the energy of first orbit of hydrogen atom is –x eV, how much energy will be required to excite the electron of hydrogen atom form ground state to the first excited state?

   (A) $\frac{2x}{3}$eV (B) $\frac{x}{4}$eV

   (C) $\frac{3x}{4}$eV (D) $\frac{x}{3}$eV

2. The largest bond angle observed in the following molecules is:



   (A) ∠HCF (B) ∠FCCl

   (C) ∠HCCl (D) ∠HCH

3. What will be the pH of aqueous NaCl solution at 80°C?

   (A) Greater than seven (B) Less than seven

   (C) Equal to seven (D) Depends on the concentration of solution

4. When a solid substance(P) is exposed to air, it first changes to a solution of (P) and then changes to a solid(Q). (P) and (Q) in the above reaction are respectively.

   (A) $Na_2S_2O_3$ and Na_2SO_4 (B) $NaNO_3$ and Na_2CO_3

   (C) NaOH and Na_2CO_3 (D) Na_2CO_3 and $Na_2C_2O_4$

5. Which new compound is formed by heating hard water?

   (A) Mg_2C_3 (B) $CaCO_3$

   (C) MgS (D) $CaSO_3$

6. How many maximum number of electron transitions between the second and third orbit is/are allowed for H^- ions?

   (A) 4 (B) 1

   (C) 3 (D) 2

Space For Rough Work

7. Which of the following relation is correct regarding the electronegativity of the fluorine atoms in PF_5?
$F_a \rightarrow$ Axial fluorine atom
$F_e \rightarrow$ Equatorial fluorine atom
(A) $F_a > F_e$ (B) $F_e > F_a$
(C) $F_a = F_e$ (D) unpredictable

8. $X(g) + 2Y(g) + Z(g) \longrightarrow$ Product
The rate equation of the above reaction is given as:

$$\text{Rate} = k\frac{[X]^{1.5}[Y]^{2}}{[Z]^{1}}$$

What is the overall order of the reaction?
(A) 3.5 (B) 2.5
(C) 4.5 (D) 2

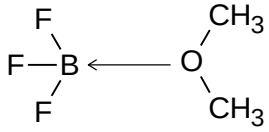
9. $CaCO_3(s) \rightleftharpoons CaO(s) + CO_2(g)$
Decomposition of $CaCO_3$ according to above reaction is favoured by
(A) increasing pressure (B) increasing the volume of reaction vessel
(C) adding more CaO (D) adding inert gas at constant volume

10. Which of the following mixture of aqueous solutions shows common ion effect?
(A) $H_2CO_3 + CaC_2 + KNO_3$ (B) $CH_3COONa + KOH + NaOH$
(C) $KH + H_2S + KCl$ (D) $KCN + HCN + NaCl$

11. Which of the following is most reactive towards H_2?
(A) N_2 (B) O_2
(C) F_2 (D) Cl_2

12. The electronic configuration of chromium atom is: Cr $\rightarrow$ $[Ar]_{18}4s^1 3d^5$. Which electron of chromium will have the highest value of orbital angular momentum?
(A) 4th electron (B) 14th electron
(C) 22nd electron (D) 11th electron

13. What is the hybridization of boron in the following compound?



(A) sp^3d (B) sp^3
(C) sp^2 (D) sp^3d^2

Space For Rough Work

14. $Ni(s)+4CO(g)\rightleftharpoons\left[Ni(CO)_4\right](s);K_P$

If the partial pressure of CO at above equilibria is 2 atm, what will be the value of K_P ?

(A) $\left(\frac{8}{6}\right)^{-4}$ atm^{-4} (B) $\frac{1}{16}$atm^{-4}

(C) $\frac{1}{4096}$atm^{-4} (D) $\left(\frac{8}{6}\right)^{-4}$ atm^{4}

15. Which of the following does not produce any gas when reacts with water?

(A) KO_2 (B) Na

(C) CaO (D) Mg_3N_2

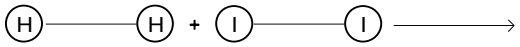
16. For which of the following element, the spin value of its atoms and diatomic molecules are identical?

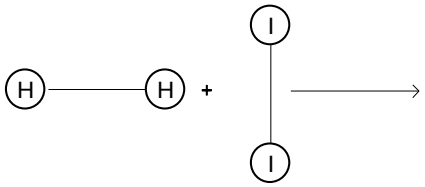
(A) Oxygen (B) Nitrogen

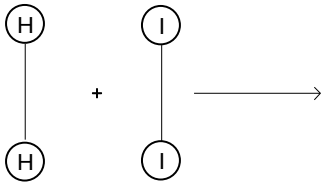
(C) Fluorine (D) Hydrogen

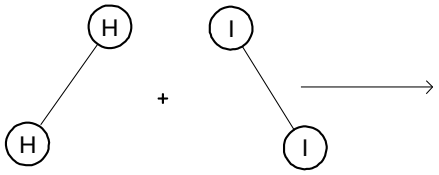
17. $H_2(g)+I_2(g)\longrightarrow 2HI(g)$

What should be the proper orientation of H_2 and I_2 molecules so that an effective collision between them results in the formation of products?

(A) 

(B) 

(C) 

(D) 

18. $NH_4^+ + H_2O \rightleftharpoons NH_4OH + H^+$

What will be the hydrolysis constant of above system if p^{K_b} of NH_4OH is 5?

(A) 10^{-14} (B) 10^{-5}

(C) 10^{-9} (D) 10^{-10}

19. Plaster of paris is a/an

(A) hydrated salt of $CaSO_4$ (B) anhydrous salt of $CaSO_4$

(C) hydride of calcium (D) carbide of calcium

Space For Rough Work

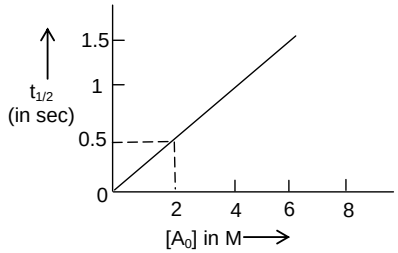
20. Which compound of magnesium forms a hydrocarbon on treatment with water?
(A) Magnesium carbonate (B) Magnesium carbide
(C) Magnesium bicarbonate (D) Magnesium oxalate

PART-B
Numerical Type

1. How many atomic orbitals of chloride ions(Cl^-) are completely occupied with electrons?

2. What is the bond order of N_2 molecule?

3. What is the pH of 0.001 M CH_3COONa solution?
[K_a of $CH_3COOH = 10^{-5}$]

4. 

What will be the rate constant k in mol $L^{-1}s^{-1}$ unit for the reaction which graph is given above?

5. In aqueous solution, $BeSO_4$ exists as $[Be(H_2O)_x]SO_4$. What is the value of' 'x'?

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 equation $x^3 + 2x^2 + 5x + 2\cos x = 0$ in interval [0, 2π] has
   (A) only one root
   (B) only two roots
   (C) only three roots
   (D) no root

2. The value of $\int \frac{dx}{\left(e^x+1\right)\left(2e^x+3\right)}$ is equal to
   (A) $x + \ln\left(e^x+1\right) - \frac{2}{3}\ln\left(2e^x+3\right) + c$
   (B) $\frac{1}{3}x - \ln\left(e^x+1\right) + \frac{2}{3}\ln\left(2e^x+3\right) + c$
   (C) $x - \frac{2}{3}\ln\left(e^x+1\right) + \ln\left(2e^x+3\right) + c$
   (D) $\frac{1}{3}x + \ln\left(e^x+1\right) - \frac{2}{3}\ln\left(2e^x+3\right) + c$

3. Domain of $f(x) = \frac{1}{\sqrt{|[|x|-1]|-5}}$, (where [·] denotes greatest integer function) is
   (A) [0, 7)
   (B) $(-\infty, -7] \cup [7, \infty)$
   (C) (0, 1)
   (D) (–2, 5)

4. Period of $f(x) = \tan(3x+2)$ is:
   (A) π
   (B) $\frac{2\pi}{3}$
   (C) $\frac{\pi}{3}$
   (D) None of these

5. 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

Space For Rough Work

6. $\int \frac{xe^x}{(x+1)^2} dx$ 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) $\frac{e^x}{x+1} + c$

7. $\int \sin 2x . \log\cos x \, dx$ 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) $\sin^2 x \log\cos x + k$

8. The value of k which makes $f(x) = \begin{cases} \sin\left(\frac{1}{x}\right) & : x \neq 0 \\ k & : x = 0 \end{cases}$ continuous at x = 0 is:

(A) 8 (B) 1

(C) –1 (D) None

9. If $x = 3\cos\theta - 2\cos^3\theta$ and $y = 3\sin\theta - 2\sin^3\theta$, then $\frac{dy}{dx} =$

(A) $\sin\theta$ (B) $\cos\theta$

(C) $\tan\theta$ (D) $\cot\theta$

10. Equation of normal to the curve $y = x(2 - x)$ at the point (2, 0) is:

(A) $x - 2y = 2$ (B) $2x + y = 4$

(C) $x - 2y + 2 = 0$ (D) None of these

11. The value of $\lim_{x\to 0}\left(\frac{1+5x^2}{1+3x^2}\right)^{1/x^2}$ is:

(A) e (B) e^2

(C) –1 (D) 0

Space For Rough Work

12. If $y = a\log|x| + bx^2 + x$ has its extremum values at $x = -1$ and $x = 2$, then:

(A) $a = 2, b = -1$ (B) $a = 2, b = \frac{-1}{2}$

(C) $a = -2, b = \frac{1}{2}$ (D) None of these

13. The least natural number a for which $x + ax^{-2} > 2$ for all $x \in R^+$

(A) 1 (B) 2

(C) 5 (D) 9

14. If maximum value of $a\sin x + 2\cos\left(x + \frac{\pi}{3}\right)$ be 1, then the value of a is

(A) $\sqrt{2}$ (B) $\sqrt{3}$

(C) 1 (D) 2

15. 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

16. If $y = \sqrt{e^{\ln x}} + \frac{1}{\sqrt{e^{\ln x}}}$, then $2x\frac{dy}{dx} + y$ is equal to

(A) 2x (B) $2\sqrt{x}$

(C) $-2\sqrt{x}$ (D) –2x

17. The function $f(x) = x^3 - 6x^2 + 9x + 1$ is monotonically decreasing for:

(A) $1 < x < 3$ (B) $x < 3$

(C) $x > 1$ (D) $x > 3$ or $x < 1$

18. If $f : R \to R$ satisfies $f(x+y) = f(x) + f(y)$, for all $x, y \in R$ and $f(1) = 7$, then $\sum_{r=1}^{n} f(r)$ is:

(A) $\frac{7(n+1)}{2}$ (B) $7n(n+1)$

(C) $\frac{7n(n+1)}{2}$ (D) $\frac{7n}{2}$

Space For Rough Work

19. The range of the function $f(x)=\frac{2+x}{2-x}, x\neq 2$ is:

(A) R (B) $R-\{-1\}$

(C) $R-\{1\}$ (D) $R-\{2\}$

20. The value of $\int\frac{(\sin x+\cos x)dx}{\sqrt{\sin 2x}}$

(A) $\sin^{-1}(\sin x+\cos x)+C$ (B) $\sin^{-1}(\sin x-\cos x)+C$

(C) $\sin^{-1}(\cos x-\sin x)+C$ (D) None of these

PART-B
Numerical Type

1. If $f(x)=2x^3-3x^2-12x+5$ on [–2, 4] then absolute maximum occurs at x =

2. If $f(x)=\begin{cases}x+\lambda & : \ -1<x<3\\ 4 & : \ x=3\\ 3x-5 & : \ x>3\end{cases}$ is continuous at x = 3, then λ is equal to

3. If $f(x)=\begin{cases}\left(\frac{1}{x}-\frac{2}{e^{2x}-1}\right), & x\neq 0\\ k, & x=0\end{cases}$ be a continuous functions at x = 0, then k is equal

4. Let $f\left(\frac{x+y}{2}\right)=\frac{f(x)+f(y)}{2}$, for all real x and y. Also f'(0 = -1 & f(0) = 1 then f(2) is equal to

5. Let $f:\mathbf{R}\to\mathbf{R}$ be a positive increasing function with $\lim\limits_{x\to\infty}\frac{f(3x)}{f(x)}=1$. Then $\lim\limits_{x\to\infty}\frac{f(2x)}{f(x)}=$

Space For Rough Work

FIITJEE INTERNAL TEST

BATCHES: NWCMPA223A1_JEEM

PHASE TEST – I

PHYSICS, CHEMISTRY & MATHEMATICS

ANSWER KEY

Paper Code 100054

SECTION – I

(PHYSICS)

PART – A

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

PART – B

1.	8.20 (range 8.00 to 8.50)	2.	4
3.	6.33 (range: 6.30 to 6.40)	4.	7.50 (range: 7.40 to 7.60)
5.	4		

SECTION – II

(CHEMISTRY)

PART – A

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

PART – B

1.	9	2.	3	3.	8	4.	2
5.	4						

SECTION – III
(MATHEMATICS)

PART – A

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

PART – B

1.	4	2.	1	3.	1	4.	–1
5.	1						