FIITJEE - JEE (Main)

PHYSICS, CHEMISTRY & MATHEMATICS
BATCHES: Two Year CRP426(R & W)
PHASE TEST – IV
Q.P. CODE: 101038

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. 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 :_____

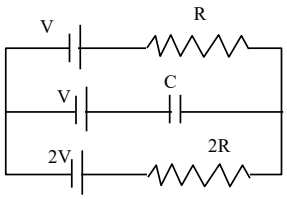
Physics

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. In the given circuit, with steady current, find the potential drop across the capacitor.

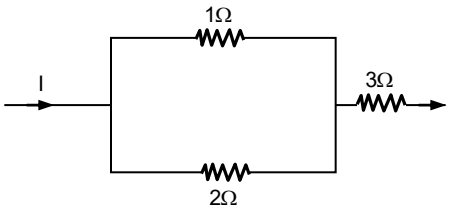


(A) V/3
(B) V/5
(C) 2V/9
(D) 4V/3

2. The electric field in a region is givne by the vector $\vec{E} = (4\hat{i} + 1\hat{j})\left(\frac{N}{C}\right)$. The maximum drop in potential will be along:

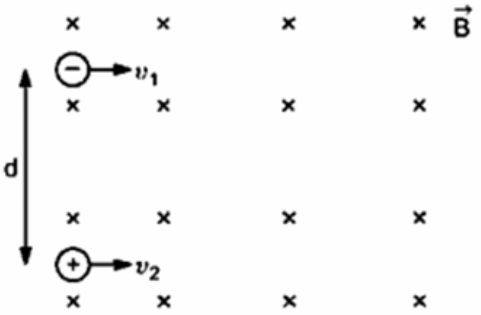
(A) X-axis
(B) Y-axis
(C) the line 4y = x
(D) the line 3y = 4x

3. In the circuit shown in the figure, power developed across 1 Ω, 2 Ω and 3 Ω resistance are in the ratio:



(A) 1 : 2 : 3
(B) 4 : 2 : 27
(C) 6 : 4 : 9
(D) 2 : 1 : 27

4. Two identical particle haivng the same mass m and charges +q and –q separated by a distance d enter in a uniform magnetic field B directed perpendicular to paper inward with speed v_1 and v_2 as shown in figure. The particles will not collide if: (consider only magnetic force due to external magnetic field)



(A) $d > \frac{m}{Bq}(v_1 + v_2)$

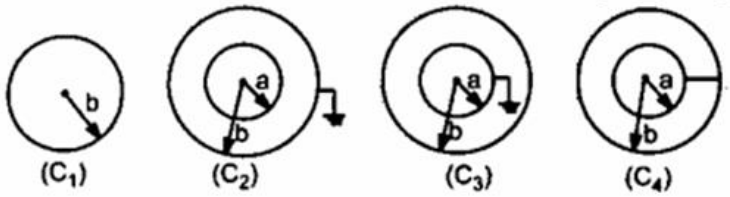
(B) $d < \frac{m}{Bq}(v_1 + v_2)$

(C) $d > \frac{2m}{Bq}(v_1 + v_2)$

(D) $v_1 = v_2$

Space For Rough Work

5. Consider the following four arangement of spherical shells of radius 'a' and 'b' (a << b).



Then which of the followng holds good for the value of thier capacitances:

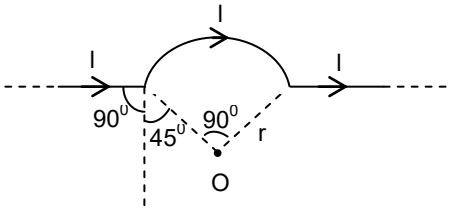
(A) $C_3 > C_2 > C_1 = C_4$ (B) $C_3 > C_1 = C_4 > C_2$

(C) $C_2 > C_3 > C_1 > C_4$ (D) $C_2 > C_1 = C_4 > C_3$

6. A loop of magnetic moment M is placed in the orientation of unstable equilibrium position in a uniform magnetic field B. The external work done in rotationg it through an angle θ is

(A) –MB (1 – cos θ) (B) –MB cos θ (C) MB cos θ (D) MB (1 – cos θ)

7. The magnetic field at the centre O of the arc in figure is (r is the radius of circular arc)



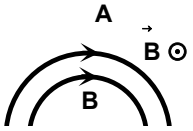
(A) $\frac{\mu_0 I}{4\pi \times r}\left[\sqrt{2}+\pi\right]$

(B) $\frac{\mu_0 I}{2\pi r}\left[\frac{\pi}{4}+1\left(\sqrt{2}-1\right)\right]$

(C) $\frac{\mu_0}{4\pi}\times\frac{I}{r}\left[\sqrt{2}+r\right]$

(D) $\frac{\mu_0}{4\pi}\times\frac{I}{r}\left[\sqrt{2}+\frac{\pi}{4}\right]$

8. Two particles A and B of masses m_A and m_B respectively and having the same charge are moving in a plane. A uniform magnetic field exists perpendicular to this plane. The speeds of the particles are v_A and v_B respectively and the trajectories are as shown in the figure. Then



(A) $m_A v_A < m_B v_B$ (B) $m_A v_A > m_B v_B$

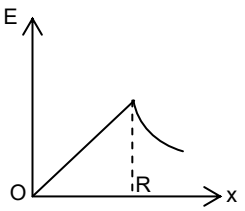
(C) $m_A < m_B$ and $v_A < v_B$ (D) $m_A = m_B$ and $v_A = v_B$

9. The electric flux from a cube of edge l is ϕ. What will be its value if edge of cube is made 2l and charge enclosed is halved?

(A) 4ϕ (B) 2ϕ (C) $\phi/2$ (D) ϕ

Space For Rough Work

10. A sphere has a positive charge. Figure shows variation of electric field (E) with distance x from its centre. Which of the following statements is incorrect?

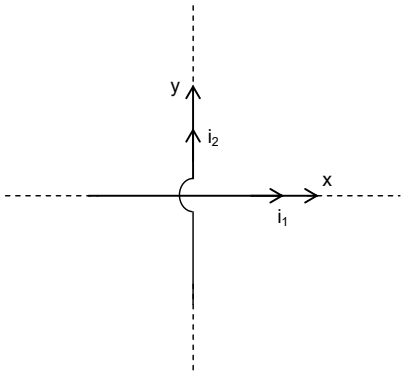


(A) Sphere is made of a non conducting materials
(B) Diameter of sphere is equal to R/2
(C) Electric potential, due to sphere, is maximum at its centre
(D) Density of charge is uniform throughout the volume of sphere

11. In a regular polygon of n sides, each corner is at a distance r from the centre. Identical charges are placed at (n – 1) corners. At the centre, the magnitude of intensity is E and the potential is V. The ratio V/E has

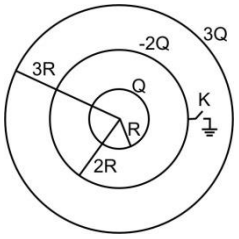
(A) r n (B) r(n – 1) (C) (n – 1)/r (D) r(n – 1)/n

12. Two infinite wires carrying current i_1 and i_2 are lying along x and y axes, as shown in the x – y plane. Then



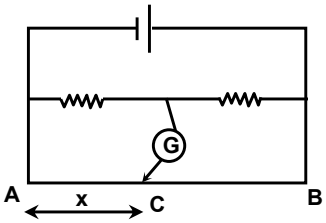
(A) Locus of points where magnetic field B is zero is a circle
(B) Locus of points where magnetic field B is zero is a straight line
(C) Magnetic field B decays hyperbolically along any line parallel x axis
(D) Magnetic field B decays hyperbolically along any line parallel to y axis

13. Find charge flown from earth when K is switch on.



(A) –Q
(B) Q
(C) 2Q
(D) –3Q

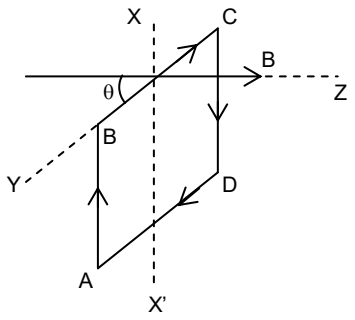
14. In the meter bridge circuit shown, the null point is obtained at C (AC = x) on the wire AB. If the diameter of the wire AB is doubled, the position of the new null point C′ will correspond to



(A) AC′ =x/2 (B) AC′ =x/4
(C) AC′ =4x (D) AC′ =x

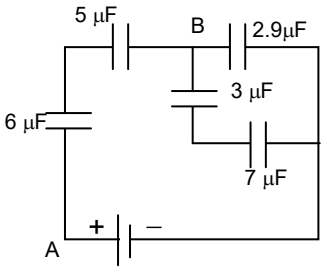
Space For Rough Work

15. The square loop ABCD, carrying a current I, is placed in a uniform magnetic field B, as shown. The loop can rotate about the axis XX'. The plane of the loop makes an angle $\theta(\theta < 90^o)$ with the direction of B. through what angle will the loop rotate by itself before the torque on it becomes zero?



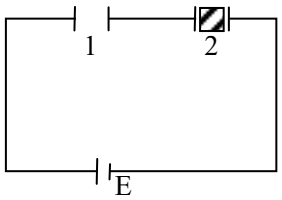
(A) θ (B) $90^o - \theta$
(C) $90^o + \theta$ (D) $180^o - \theta$

16. In the circuit shown if in steady state the potential difference between points A and B is 11V, find potential difference across 7 μ F capacitor.



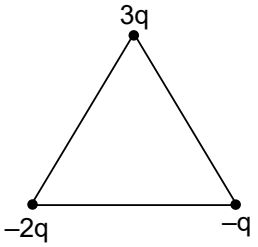
(A) 1.8 V (B) 18 V
(C) 9 V (D) 1 V

17. Two identical capacitors 1 and 2 are connected in series to a battery as shown in figure. Capacitor 2 contains a dielectric slab of dielectric constant k as shown. Q_1 and Q_2 are the charges stored in the capacitors. Now the dielectric slab is removed and the corresponding charges are Q'_1 and Q'_2. Then



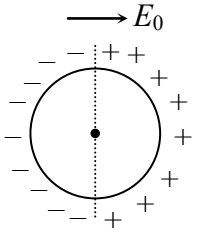
(A) $\frac{Q'_1}{Q_1} = \frac{k+1}{k}$ (B) $\frac{Q'_2}{Q_2} = \frac{k+1}{2}$ (C) $\frac{Q'_2}{Q_2} = \frac{k+1}{2k}$ (D) $\frac{Q'_1}{Q_1} = \frac{k}{2}$

18. 3 points charges are kept on the vertices of an equilateral triangle of side l as shown in figure find out equivalent dipole moment of this charge system.



(A) $\sqrt{5}$ql (B) $\sqrt{7}$ql
(C) 3ql (D) $\sqrt{19}$ql

19. Half part of ring is uniformly positively charged and other half is uniformly negatively charged. Ring is in equilibrium in uniform electric field as shown and free to rotate about an axis passing through its centre and perpendicular to plane. The equilibrium is



(A) stable
(B) unstable
(C) neutral
(D) can be stable or unstable

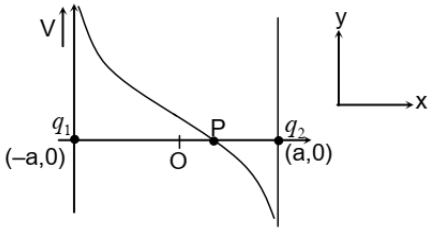
Space For Rough Work

20. In the Bohr's model of hydrogen atom the electron moves around the nucleus in a circular orbit of radius 5×10^{-11}m with time period 1.5×10^{-16} sec. The current associated with the electron motion is

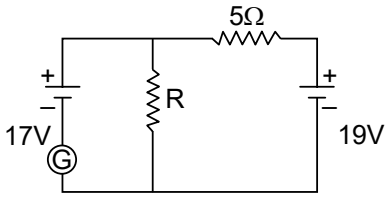
(A) zero (B) 1.6×10^{-19}amp (C) 0.17 amp (D) 1.07×10^{-3}amp

PART-B
Numerical Type

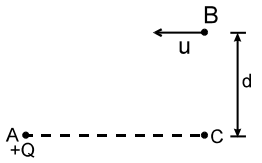
1. The following curve represents the variation of potential at points on x-axis due to two-point charges q_1 and q_2 separated by a distance 2a. Find the ratio of magnitude of two charges $|q_2/q_1|$ (point O is origin and coordinates of point P is $\left(\frac{a}{3},0\right)$)



2. For what value of R will the current in galvanometer be zero?

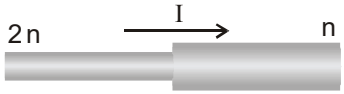


3. A positive charge +Q is fixed at a point A. another positively charged particle of mass m and charge +q is projected from a point B with velocity u as shown in the figure. The point B is at large distance from A and at distance 'd' from the line AC. The initial velocity is parallel to the line AC. The point C is at very large distance from A. Find the minimum distance (in meter) of +q from +Q during the motion. (Take $Qq = 4\pi\in_o mu^2d$ and d = $\left(\sqrt{2}-1\right)$ meter.)



4. A proton (charge t_e, mass = m) moves in a circle of radius of r_p when moved perpendicular to the magnetic field B, with kinetic energy K. If the radius of a proton moving with kinetic energy 4K is n r_p, then n is

5. Two cylindrical rods of uniform cross-section area A and 2A, having free electrons per unit volume 2n and n respectively are joined in series. A current I flows through them in steady state. Then the ratio of drift velocity of free electron in left rod to drift velocity of electron in the right rod is $\left(\frac{v_L}{v_R}\right)$ is :



Space For Rough Work

Chemistry

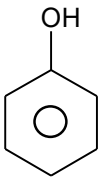
PART – A

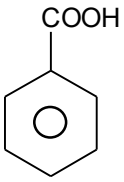
Straight Objective Type

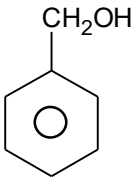
This part contains **20 multiple choice questions.** Each question has 4 choices (A), (B), (C) and (D), out of which **ONLY ONE** is correct.

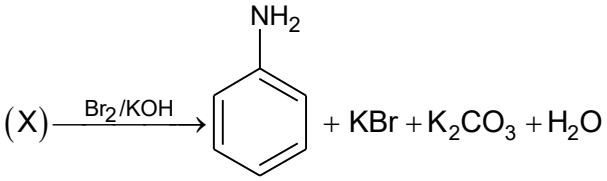
1. Which is most reactive towards sodium metal?

(A) CH_3OH

(B) 

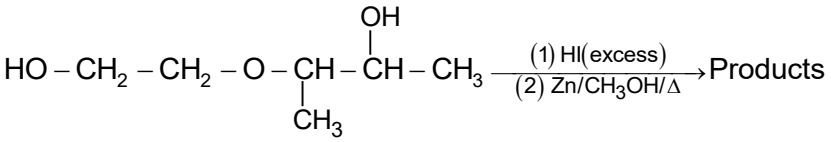
(C) 

(D) 

2. 

How many hydrogen atom(s) is/are present in a molecule of (X)?
(A) 5 (B) 6 (C) 7 (D) 8

3. Which substance on acidic hydrolysis forms C_2H_5COOH and $CH_3NH_3^+$?
(A) N-methylpropanoic acid
(B) N-methylpropanamide
(C) N, N-dimethylpropanoic acid
(D) N, N-dimethylethanamide

4. 

Which is not a product of above reaction?
(A) $CH_2 = CH_2$
(B) $CH_3 – CH = CH – CH_3$
(C) CH_3CH_2I
(D) $CH_3CH_2CH_2CH_2I$

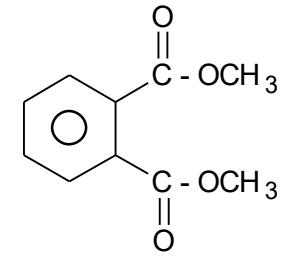
Space For Rough Work

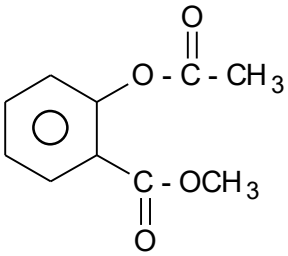
5. $CH_3CHO \xrightarrow{PCl_5} Product$

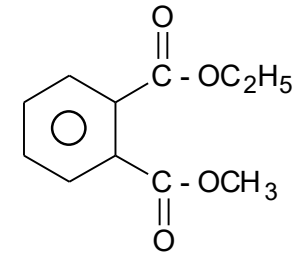
The product in above reaction
(A) contains sp^2 and sp^3 carbon atoms
(B) undergo Clemmensen reduction to form ethane
(C) undergoes hydrolysis to reform the reactant CH_3CHO
(D) is a vicinal dichloride

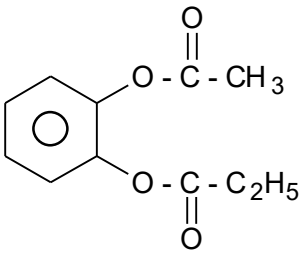
6. Reaction of CH_3COCl with which substance produces acetic anhydride($CH_3COOCOCH_3$)?
(A) CH_3CONH_2 (B) CH_3COONa
(C) CH_3COOCH_3 (D) NaOOC – COONa

7. Which of the following compound forms salicylic acid on acidic hydrolysis?

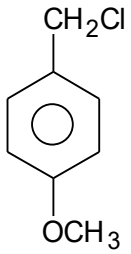
(A) 

(B) 

(C) 

(D) 

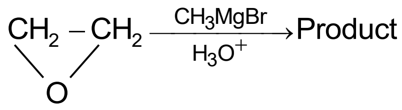
8. The correct statement(s) regarding $(CH_3)_3N$ are given in option
(I) it is less soluble in water than its functional isomers
(II) it is more soluble in HCl than in water
(III) it reacts with one mole of C_2H_5I to form a quaternary salt
(IV) it forms a salt when reacts with HNO_2
(A) II, III (B) III, IV (C) I, II, III, IV (D) I, II, III

9. 

Above compound reacts with the given reagents. With which reagent it forms a product that contains the most acidic hydrogen atom?
(A) KCN (B) HI (C) NaOH (D) KNH_2

Space For Rough Work

10. Which of the following chloride is least reactive towards aqueous KOH?
(A) $CH_2 = CH - CH_2Cl$
(B) $CH_3CH = CH - CH(Cl) - CH_3$
(C) $CH_2 = CH - CH = CH_2 - CH_2Cl$
(D) $CH_3 - CH = CH - CH = CH - Cl$

11. 
The molar mass of the organic product is
(A) 28 (B) 46 (C) 72 (D) 60

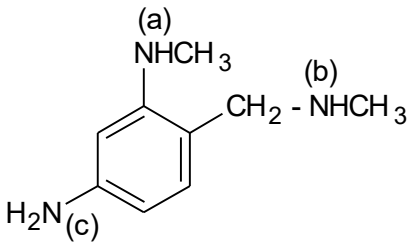
12. $CH_3CH_2CONHCH_2CH(Cl)CH_2CONHCH_2COOCH_3$
How many total number of product(s) including stereoisomers is/are formed when the above compound undergoes hydrolysis?
(A) 4 (B) 5 (C) 3 (D) 6

13. Which reaction does not produce an alkene?
(A) $2CHCl_3 \xrightarrow{Ag/\Delta}$
(B) $CH_3 - CH(Cl) - CH(Cl) - CH_3 \xrightarrow{NaNH_2/\Delta}$
(C) $H - CH_2 - CCl_2 - Cl \xrightarrow{NaNH_2/\Delta}$ (i.e. $H_3C - CCl_3$)
(D) $CH_3 - CH_2 - CH_2 - CHCl_2 \xrightarrow{NaNH_2/\Delta}$

14. $CH_3CH_2Cl \xrightarrow[\Delta]{Reagent} P + Q$
Products P(major) and Q(minor) are functional isomers. Which is the reagent?
(A) KSH (B) KCN (C) KNH_2 (D) CH_3OK

15. The formula of a compound(X) is C_4H_8O. It gives 2, 4-DNP test. It reacts with NH_2OH in slightly acidic medium to form two products which are geometrical isomers. (X) does not respond to Tollen's and Fehling's test. Which is 'X'?
(A) $CH_3CH = CH - CH_2OH$
(B) $CH_3COCH_2CH_3$
(C) $CH_3CH_2CH_2CHO$
(D) $CH_2 = CH - C(=O) - CH_3$

Space For Rough Work

16. 

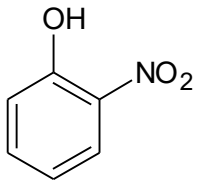
The correct statement regarding the amino groups in the above molecule is
(A) Basic strength: a > c > b
(B) NH_2(c) group will be replaced by OH group if the molecule reacts with HNO_2
(C) The NH_2(c) groups is converted to –NC(isocyanide) group when the compound reacts with $CHCl_3$ in presence of KOH.
(D) Reactivity towards HCl : c > a > b

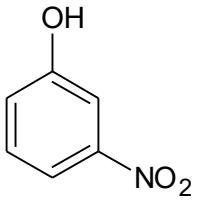
17. Which phenomenon does not take place in the following reaction?

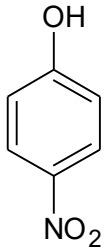
$$2C_6H_5CHO \xrightarrow{NaOH} C_6H_5COONa + C_6H_5CH_2OH$$

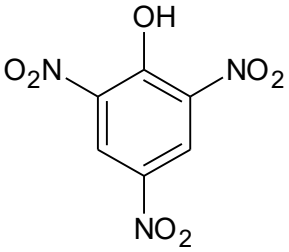
(A) Hydride transfer
(B) Oxidation and reduction
(C) Carbocation intermediate formation
(D) Polarisation of C = O bond

18. Which has the lowest boiling point?

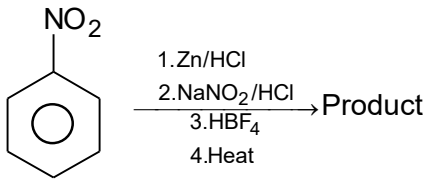
(A) 

(B) 

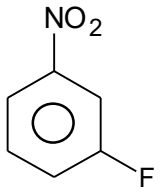
(C) 

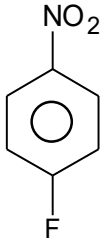
(D) 

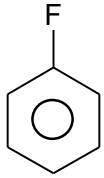
Space For Rough Work

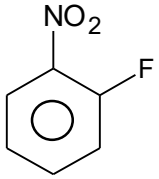
19. 

The product of above reaction is:

(A) 

(B) 

(C) 

(D) 

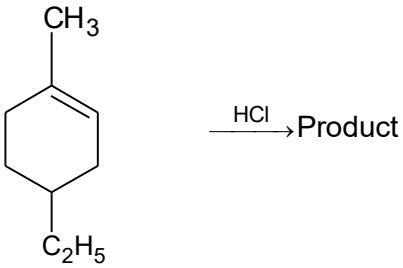
20. $CH_3CH_2COOH \xrightarrow{Cl_2/\text{red phosphorus}} \text{Product}$

The product of above reaction is

(A) $ClCH_2CH_2COOH$ (B) $CH_3CH(Cl)COOH$

(C) CH_3CH_2COOCl (D) $ClCH_2CH(Cl)COOH$

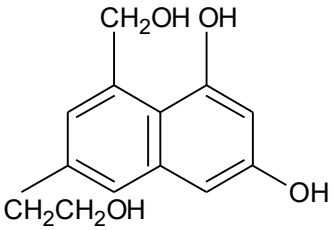
PART-B
Numerical Type

1. 

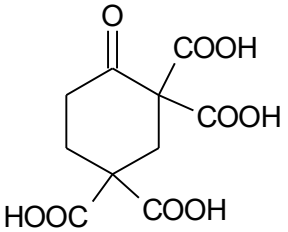
How many maximum number of stereoisomeric product(s) is/are formed in above reaction considering major as well as minor products?

2. A poly-hydric alcohol on normal permanganate oxidation forms a diketo acid. How many secondary OH group(s) is/are present in the alcohol?

Space For Rough Work

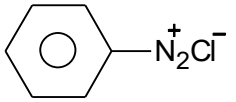
3. 

How many OH group(s) in the above molecule can react with NaOH?

4. 

$\xrightarrow{\text{Heat}}$ Products

How many moles of CO_2 is formed in the above reaction?

5. 

$\xrightarrow[\Delta]{H_2O}$ Products

If the molar mass of the organic product of above reaction is M, what is the value of $\frac{M}{10}$?

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 domain of the function $f(x)=\sin^{-1}\left[2x^2-3\right]+\log_2\left(\log_{\frac{1}{2}}\left(x^2-5x+5\right)\right)$, where $[t]$ is the greatest integer function, is:

   (A) $\left(-\sqrt{\frac{5}{2}}, \frac{5-\sqrt{5}}{2}\right)$ (B) $\left(\frac{5-\sqrt{5}}{2}, \frac{5+\sqrt{5}}{2}\right)$

   (C) $\left(1, \frac{5-\sqrt{5}}{2}\right)$ (D) $\left[1, \frac{5+\sqrt{5}}{2}\right)$

2. Let f : R $\to$ R be a function such that $f(x)=\frac{x^2+2x+1}{x^2+1}$. Then

   (A) f(x) is one-one in (–∞,∞) (B) f(x) is one-one in [1, ∞) but not in(–∞,∞)

   (C) f(x) is many-one in (–∞,–1) (D) f(x) is many-one in (1,∞)

3. If the line y = 1 – x touches the curve $y^2-y+x=0$, then the point of contact is

   (A) (1, 1) (B) $\left(\frac{1}{2}, \frac{1}{2}\right)$ (C) (0, 1) (D) (1, 0)

4. $\lim\limits_{n\to\infty}\left(\sqrt{\left(n^2+n+1\right)}-n\right)$ where [.] denotes the greatest integer function:

   (A) 0 (B) $\frac{1}{2}$ (C) $\frac{2}{3}$ (D) $\frac{1}{4}$

5. Let f be a non – negative function in $[0, 1]$ and twice differentiable in (0, 1). If $\int_0^x\sqrt{1-\left(f'(t)\right)^2}dt=\int_0^x f(t)dt, 0\le x\le 1$ and $f(0)=0$, then $\lim\limits_{x\to 0}\frac{1}{x^2}\int_0^x f(t)dt$:

   (A) Does not exist (B) Equals 1 (C) Equals $\frac{1}{2}$ (D) Equals 0

Space For Rough Work

6. The function of $f(x)=\tan^{-1}(\sin x+\cos x)$ is an increasing function in

(A) $\left(0,\frac{\pi}{2}\right)$ (B) $\left(-\frac{\pi}{2},\frac{\pi}{2}\right)$ (C) $\left(\frac{\pi}{4},\frac{\pi}{2}\right)$ (D) $\left(-\frac{\pi}{2},\frac{\pi}{4}\right)$

7. $$f(x)=\begin{cases}\lim\limits_{n\to\infty}\dfrac{x^n\cos x+\cos\left(x+4x^n\right)}{x^n+1}, & x\neq 1\\ k, & x=1\end{cases}$$

If $f(x)$ is continuous at x = 1, then

(A) $k=2\cos 1$ (B) $k=\cos 1$

(C) $k=\cos 1+\cos 4$ (D) No real value of 'k' exists

8. Let $I(x)=\int\frac{(x+1)}{x\left(1+xe^x\right)^2}dx, x>0$. If $\lim\limits_{x\to\infty}I(x)=0,$ then $I(1)$ is equal to

(A) $\frac{e+2}{e+1}-\log_e(e+1)$ (B) $\frac{e+1}{e+2}+\log_e(e+1)$

(C) $\frac{e+1}{e+2}-\log_e(e+1)$ (D) $\frac{e+2}{e+1}+\log_e(e+1)$

9. The number of relations on the set $\{1,2,3\}$ containing (1, 2) and (2, 3), which are reflexive and transitive but not symmetric, is

(A) 2 (B) 3 (C) 4 (D) 5

10. The value of the integral $\int_{1/2}^{2}\frac{\tan^{-1}x}{x}dx$ is equal to

(A) $\pi\log_e 2$ (B) $\frac{1}{2}\log_e 2$ (C) $\frac{\pi}{4}\log_e 2$ (D) $\frac{\pi}{2}\log_e 2$

11. Find the value of $\int_0^{\pi}\log(1+\cos x)dx$.

(A) π (B) $\frac{\pi}{2}\log_e 2$ (C) $\pi\log_e 2$ (D) $-\pi\log_e 2$

12. The value of $\int_{-\frac{\pi}{2}}^{\frac{\pi}{2}}\left(\frac{1+\sin^2 x}{1+\pi^{\sin x}}\right)dx$ is:

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

Space For Rough Work

13. $y=\frac{1}{1+(\tan\theta)^{\sin\theta-\cos\theta}+(\cot\theta)^{\cos\theta-\cot\theta}}+\frac{1}{1+(\tan\theta)^{\cos\theta-\sin\theta}+(\cot\theta)^{\sin\theta-\cot\theta}}$
$+\frac{1}{1+(\tan\theta)^{\cos\theta-\cot\theta}+(\cot\theta)^{\cot\theta-\sin\theta}}$ then $\frac{dy}{d\theta}$ at $\theta=\frac{\pi}{3}$ is:

(A) 0 (B) 1 (C) $\sqrt{3}$ (D) None of these

14. $\int\sqrt{\frac{1+\cos x}{1-\cos x}}dx$ equals

(A) $\ln\cos\left(\frac{x}{2}\right)+c$ (B) 2 ln sin $\left(\frac{x}{2}\right)+c$ (C) 2 ln sec $\left(\frac{x}{2}\right)+c$ (D) 2 ln cosec $\left(\frac{x}{2}\right)+c$

15. The function $f(x)=x(x+3)e^{-x/2}$ satisfies all the conditions of Rolle's theorem on $[-3, 0]$.
The value of c which verifies Rolle's theorem, is
(A) 0 (B) –1 (C) –2 (D) 3

16. If $f(x)=\begin{cases}\frac{\sin(a+2)x+\sin x}{x}; x<0\\ b \qquad\qquad ; x=0\\ \frac{\left(x+3x^2\right)^{1/3}-x^{1/3}}{x^{4/3}}; x>0\end{cases}$ is continuous at x = 0 then $a+2b$ is equal to

(A) –2 (B) –1 (C) 0 (D) 1

17. Let f be any function defined on R and let it satisfy the condition :
$|f(x)-f(y)|\le|x-y|^2, \forall\ x,y\in R$
If $f(0)=1$, then :

(A) f (x) > 0, $\forall\ x\in R$ (B) f (x) = 0, $\forall\ x\in R$
(C) f (x) can take any value in R (D) f (x) < 0, $\forall\ x\in R$

18. If m and n are positive integers and $f(x)=\int_1^x(t-a)^{2n}(t-b)^{2m+1}dt$, $a\ne b$, 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

Space For Rough Work

19. $\lim\limits_{x\to\frac{1}{\sqrt{2}}} \dfrac{\sin\left(\cos^{-1}x\right)-x}{1-\tan\left(\cos^{-1}x\right)}$ is equal to

(A) $\sqrt{2}$ (B) $-\sqrt{2}$ (C) $\dfrac{1}{\sqrt{2}}$ (D) $-\dfrac{1}{\sqrt{2}}$

20. The curve $y(x) = ax^3 + bx^2 + cx + 5$ touches the x-axis at the point P(-2, 0) and cuts the y-axis at the point Q, where y' is equal to 3. Then the local maximum value of y(x) is:

(A) $\dfrac{27}{4}$ (B) $\dfrac{29}{4}$ (C) $\dfrac{37}{4}$ (D) $\dfrac{9}{2}$

PART-B
Numerical Type

1. Let $f:R\to R$ be defined as $f(x)=|x|+|x^2-1|$. The total number of points at which f attains a relative extrema is

2. The domain of the function $f(x)=\dfrac{\sin^{-1}(x-3)}{\sqrt{9-x^2}}$ is $[\alpha,\beta)$, then $\alpha-\beta$ will be equal to

3. $\lim\limits_{x\to\infty}\left(\dfrac{x^2+5x+3}{x^2+x+3}\right)^x$ is equal to e^{α}, then α will be equal to

4. If $f(x)=\int\dfrac{\sqrt{\tan x}}{\sin x\cos x}dx$, and $f(0)=3$, then the value of $f\left(\dfrac{\pi}{4}\right)$ is

5. If the solution of the equation $\tan^{-1}\dfrac{x-1}{x+2}+\tan^{-1}\dfrac{x+1}{x+2}=\dfrac{\pi}{4}$ is α, find the value of $\sqrt{8}\alpha$.
(Use $\sqrt{5}=2.24$)

Space For Rough Work

FIITJEE INTERNAL TEST

BATCHES: Two Year CRP426(R & W)_PT-4

PHYSICS, CHEMISTRY & MATHEMATICS

JEE MAIN-PHASE

ANSWER KEY

Paper Code 101038

SECTION – I

(PHYSICS)

PART – A

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

PART – B

1.	0.50	2.	42.50	3.	1.00	4.	2.00
5.	1.00						

SECTION – II

(CHEMISTRY)

PART – A

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

PART – B

1.	10	2.	2	3.	2	4.	3
5.	9.4						

SECTION – III
(MATHEMATICS)

PART – A

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

PART – B

1.	5	2.	–1	3.	4	4.	5
5.	4.48						