FIITJEE - JEE (Main)

PHYSICS, CHEMISTRY & MATHEMATICS
BATCHES: Two Year CRP(2224) A-lot
PHASE TEST – III
Q.P. CODE: 100184

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 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.

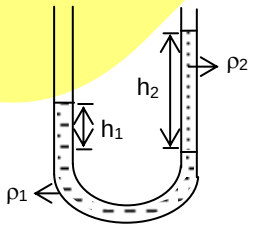
1. A tank with vertical walls is mounted so that its base is at a height H above the horizontal ground. The tank is filled with water to a depth h. A hole is punched in the side wall of the tank at a depth x below the water surface. To have maximum range of emerging stream, the value of x is (h > H)

(A) $\frac{H-h}{2}$ (B) $\frac{H}{2}$ (C) $\frac{h}{2}$ (D) $\frac{H+h}{2}$

2. A cubical block of wood of specific gravity 0.5 and chunk of concrete of specific gravity 2.5 are fastened together. The ratio of mass of concrete to the mass of wood which makes the combination to float with its entire volume submerged in water is

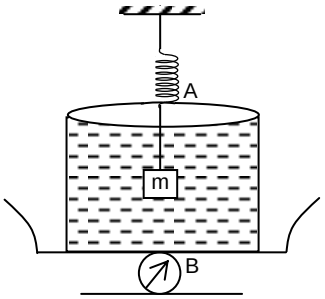
(A) $\frac{5}{3}$ (B) $\frac{5}{1}$ (C) $\frac{5}{2}$ (D) $\frac{4}{3}$

3. Two liquids which do not react chemically are placed in a bent tube as shown in figure. The heights of the liquids above their surface of separation are



(A) directly proportional to their densities
(B) inversely proportional to their densities
(C) directly proportional to square of their densities
(D) equal

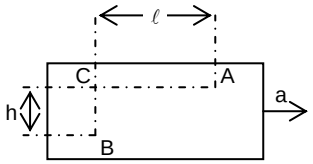
4. The spring balance A reads 2kg with a block of mass m suspended from it. A balances B reads 5kg when a beaker with liquid is put on the pan of the balance. The two balances are now so arranged that the hanging mass is inside the liquid in a beaker as shown in figure



(A) the balance A will read more than 2kg
(B) the balance B will read less than 5kg
(C) the balance A will read less than 2kg and B will read more than 5kg
(D) the balance A will read more than 2kg and B will read less than 5kg

Space For Rough Work

5. A sealed tank containing a liquid of density ρ moves with a horizontal acceleration a, as shown in the figure. The difference in pressure between the points A and B is



(A) $h\rho g$ (B) $l\rho a$

(C) $h\rho g - \ell\rho a$ (D) $h\rho g + \ell\rho a$

6. A sound wave of frequency 400 Hz is traveling in air at a speed of 320 ms^{-1}. The difference in phase between two points on the wave 0.2 m apart in the direction of travel is

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

7. A uniform rod of density ρ is placed in a wide tank containing a liquid of density $\rho_0 (\rho_0 > \rho)$. The depth of liquid in the tank is half the length of the rod. The rod is in equilibrium, with its lower end resting on the bottom of the tank. In this position the rod makes an angle θ with the horizontal.

(A) $\sin\theta = \frac{1}{2}\sqrt{\rho_0/\rho}$ (B) $\sin\theta = \frac{1}{2}.\frac{\rho_0}{\rho}$

(C) $\sin\theta = \sqrt{\rho/\rho_0}$ (D) $\sin\theta = \rho_0/\rho$

8. Suppose there is a hole in a copper plate. Upon heating the plate, diameter of hole would

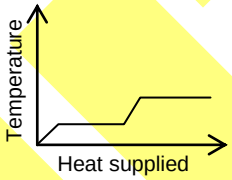
(A) increases (B) decreases

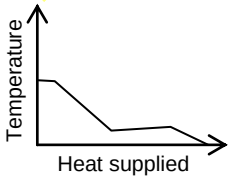
(C) remains the same (D) none of these

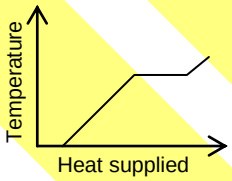
9. A cylindrical tube, open at both ends, has a fundamental frequency f in air. The tube is dipped vertically in water so that half of it is in water. The fundamental frequency of the air column is now

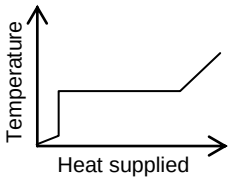
(A) f/2 (B) 3f/4 (C) f (D) 2f

10. A block of ice at –10°C is slowly heated and converted to steam at 100°C. Which of the following curves represent the phenomenon qualitatively?

(A)


(B)


(C)


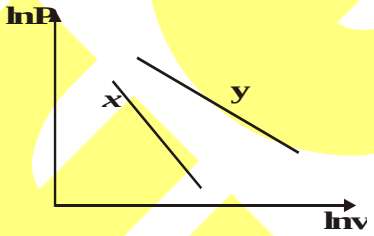
(D)


Space For Rough Work

11. Which of the following is not true for the progressive wave $y = 4\sin\left\{2\pi\left(\frac{t}{0.02} - \frac{x}{100}\right)\right\}$ where x & y are in cm and t in seconds?
(A) The amplitude is 4 cm
(B) The wavelength is 100 cm
(C) The frequency is 50 Hz
(D) The velocity of propagation is 2 cm/s

12. A wave represented by the equation y = a cos(kx - ωt) is superposed with another wave to form a stationary wave such that the point x = 0 is a node. The equation for other wave is
(A) a sin (kx + ωt)
(B) – a cos (kx - ωt)
(C) – a cos(kx + ωt)
(D) – a sin (kx - ωt)

13. For two different gases X and Y, having degrees of freedom f_1 and f_2 and molar heat capacities at constant volume C_{V_1} and C_{V_2} respectively, for adiabatic process, the ln P versus in V graph is plotted as shown, then



(A) $f_1 > f_2$
(B) $f_2 > f_1$
(C) Constant temperature
(D) $C_{V_1} > C_{V_2}$

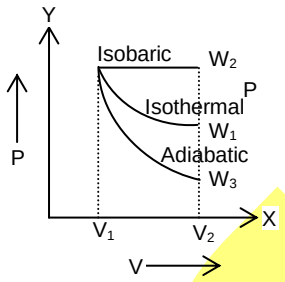
14. A train moves towards a stationary observer with speed 34 ms^{-1}. The train sounds a whistle and its frequency registered by the observer is f_1. If the train's speed is reduced to 17 ms^{-1} the frequency registered is f_2. If the speed of sound is 340 ms^{-1}, then the ratio f_1 / f_2 is
(A) $\frac{18}{19}$
(B) $\frac{1}{2}$
(C) 2
(D) $\frac{19}{18}$

15. A gas for which γ = 1.5 is suddenly compressed to $\frac{1}{4}$ the of the initial volume adiabatically. Then the ratio of the final to the initial pressure is
(A) 1 : 16
(B) 1 : 8
(C) 1 : 4
(D) 8 : 1

16. Heat is supplied to a diatomic gas at constant pressure. The ratio of ΔQ : ΔU : ΔW is
(A) 5 : 3 : 2
(B) 7 : 5 : 2
(C) 2 : 3 : 5
(D) 2 : 5 : 7

Space For Rough Work

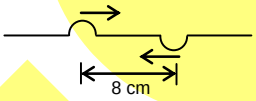
17. Starting with the same initial conditions, an ideal gas expands form volume V_1 to V_2 in three different way. The work done by the gas is W_1 if the process is purely isothermal, W_1 if the process is purely isothermal, W_2 if purely isobaric and W_3 if purely adiabatic. Then :



(A) $W_2 > W_1 > W_3$ (B) $W_2 > W_3 > W_1$

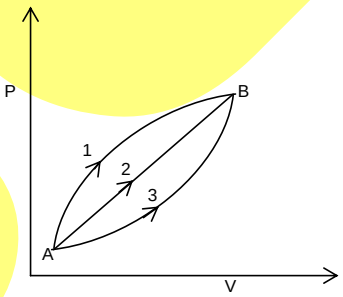
(C) $W_1 > W_2 > W_3$ (D) $W_1 > W_3 > W_2$

18. Two pulses in a stretched string whose centres are initially 8 cm apart are moving towards each other as shown in the figure. The speed of each pulse is 2 cm/s. After 2 seconds, the total energy of the pulses will be



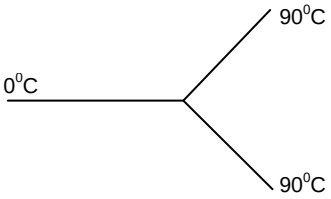
(A) zero
(B) purely kinetic
(C) purely potential
(D) partly kinetic and partly potential

19. In figure, a certain mass of gas traces three paths 1, 2, 3 from state A to state B. If work done by the gas along three paths are W_1, W_2, W_3 respectively, then



(A) $W_1 < W_2 < W_3$
(B) $W_1 = W_2 = W_3$
(C) $W_1 > W_2 > W_3$
(D) cannot say

20. Three rods made of same material and having the same cross section have been joined as shown in the figure. Each rod is of the same length. The left and right ends are kept at 0^0C and 90^0C respectively. The temperature of the junction of the three rods will be



(A) 45^0C (B) 60^0C (C) 30^0C (D) 20^0C

Space For Rough Work

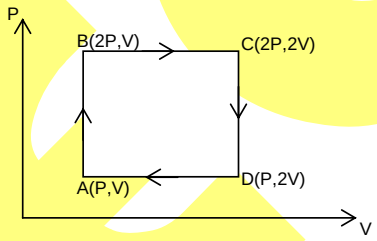
PART-B
Numerical Type

1. A body of mass 4 kg floats in a liquid. What is the value of m if buoyant force acting on the body is $\frac{49}{10}$m newton?

2. Water rises in a capillary tube to a height of 2 cm, In another capillary whose radius is one third of it, how high the water will rise (in cm)

3. Hot water cools from 60^0C to 50^0C in the first 10 min and to 42^0C in the next 10 min. The temperature of the surrounding (in ^{0}C) is

4. An ideal monoatomic gas is taken round the cycle ABCDA as shown in the P – V diagram (see figure). The work done during the cycle is $\frac{pv}{2n}$ then n = ?



5. A person carrying a whistle emitting continuously a note of 272 Hz is running towards a reflecting surface with a speed 18 km/ hr. The speed of sound in air is 345 m/s. The number of beats heard by him 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. $CH_4 + Cl_2 \xrightarrow{h\nu} P + Q + R + S$

S is the heaviest product
R is the most acidic product
Q contains the lowest percentage of chlorine
P contains carbon atoms with zero oxidation state
Which forms an alkyne when heated with silver?

(A) P (B) Q
(C) R (D) S

2. Molarity is a/an

(A) extensive property (B) intensive property
(C) state function (D) path dependent function

3. $CH_3CH = CH - CH = CH_2 \xrightarrow{HCl(1\,eq)} Product\,(Major)$

The major product of above reaction, on the basis of stability of reaction intermediate is

(A) $CH_3\underset{\displaystyle Cl}{\underset{|}{C}}HCH_2CH = CH_2$ (B) $CH_3CH = \underset{\displaystyle Cl}{\underset{|}{C}}HCHCH_3$

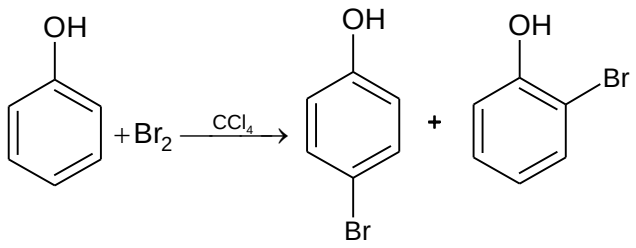
(C) $CH_3CH_2\underset{\displaystyle Cl}{\underset{|}{C}}HCH = CH_2$ (D) $CH_3CH = CHCH_2CH_2Cl$

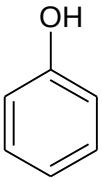
4. Which of the following reaction does not involve carbon to carbon bond cleavage?

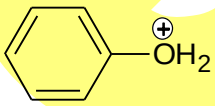
(A) $CH_3CH_2CH_2CH = CH_2 \xrightarrow[Zn/H_2O]{O_3}$ (B) $CH_3CH_2CH_3 \xrightarrow[High\,temperature]{Conc.HNO_3}$

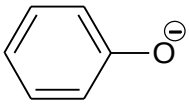
(C) $CH_3CH_2C \equiv CH \xrightarrow{NaNH_2}$ (D) $CH_3CH = CHCH_3 \xrightarrow[Heat]{KMnO_4/H^+}$

Space For Rough Work

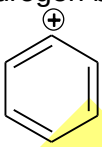
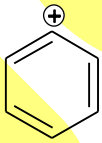
5. 

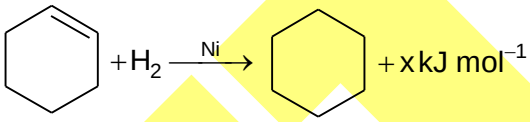
The reactivity of  increases if CCl_4 is replaced by H_2O, because

(A) phenol becomes meta directing in water as it becomes phenonium ion, 

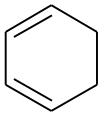
(B) phenol undergoes ionization in water forming the more activating phenoxide ion 

(C) water breaks the hydrogen bonds between phenol molecules, making them free to react

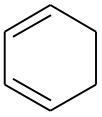
(D) Phenol ionizes as  -and OH^- ions. The  ion is more activating than phenol toward EAS reaction

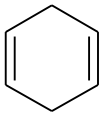
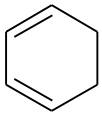
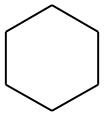
6. 

Choose correct statement

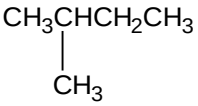
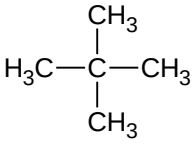
(A) the heat of hydrogenation of  is higher than that of  , when both are converted to 

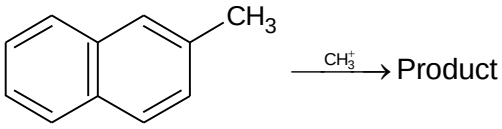
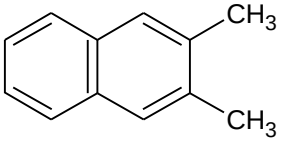
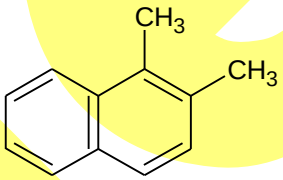
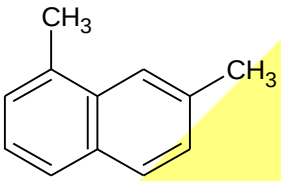
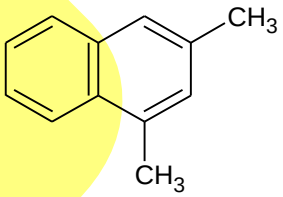
(B) resonance energy of  is higher than 3x kJ mol^{-1}.

(C) neither  nor  are in conjugation

(D) the heat of hydrogenation of  is lower than that of  , when both are converted to 

7. Two moles of an ideal gas was reversibly heated form 320 K to 340 K. How much heat in J unit is absorbed by the gas? [$C_P = 20 + 10^{-4}$ T JK^{-1} mol^{-1}]
(A) 1100.06 (B) 1800.12
(C) 400.66 (D) 801.32

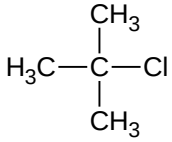
8. Which has the highest value of heat of combustion?
(A) $CH_3CH_2CH_2CH_2CH_3$ (B) 
(C)  (D) Same for all

9. 
The major product of above reaction is
(A)  (B) 
(C)  (D) 

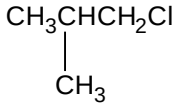
10. The internal energy of a thermodynamic system containing an ideal gas in a container does not include
(A) vibrational energy of the gas molecules
(B) rotational energy of the gas molecules
(C) translational energy of the gas molecules
(D) kinetic energy of the container

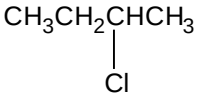
Space For Rough Work

11. Which compound upon Wurtz reaction will produce 3, 4-Dimethylhexane?

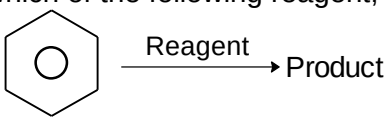
(A) 

(B) $CH_3CH_2CH_2CH_2Cl$

(C) 

(D) 

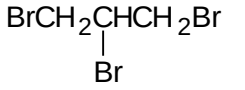
12. With which of the following reagent, the product does not undergo further reaction

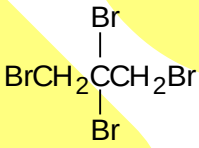


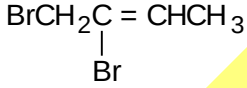
(A) C_2H_5Cl/Anhy. $AlCl_3$
(B) $CH_2 = CH_2$/HF
(C) CH_3COCl/Anhy.$AlCl_3$
(D) C_2H_5OH/BF_3

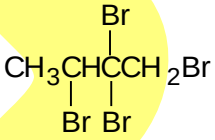
13. The term $nC_v\Delta T$ for a thermodynamics process
(A) is a path function
(B) represent entropy of isothermal process
(C) is the enthalpy change of a reaction
(D) represents the internal energy of the system

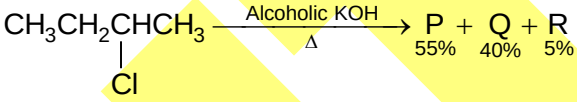
14. Which of the following compound does not form allenes upon treatment with zinc dust?

(A) 

(B) 

(C) 

(D) 

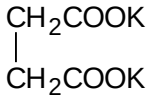
15. 

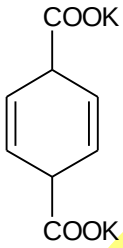
The yield of a isomeric products in the above reaction is given under them.
Choose correct statements:
(A) P and R are geometrical isomer
(B) P and Q are position isomers
(C) Q and R are position isomers
(D) P and R are chain isomers

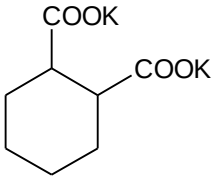
Space For Rough Work

16. In which thermodynamic process, all the heat absorbed from the surrounding is only utilized to increase the internal energy of the system?
(A) Isothermal process (B) Adiabatic process
(C) Isobaric process (D) Isochoric process

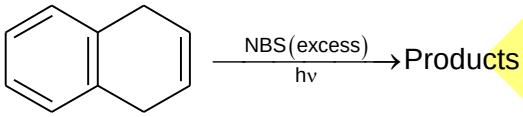
17. Which of the following salt, upon Kolbe's electrolysis forms the product which is most stable towards hydrogenation reaction?

(A) 

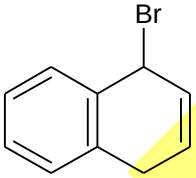
(B) 

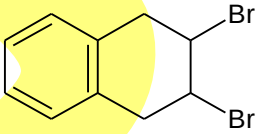
(C) 

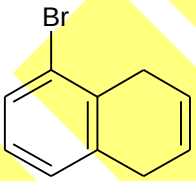
(D) 

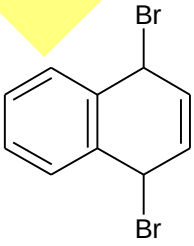
18. 

Which is not a product of above reaction?

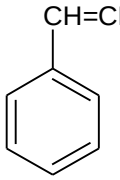
(A) 

(B) 

(C) 

(D) 

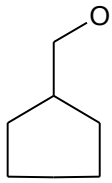
Space For Rough Work

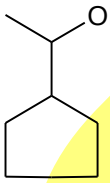
19. 

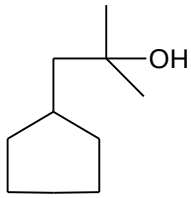
undergoes electrophilic substitution reaction at ortho and para position. This is due to

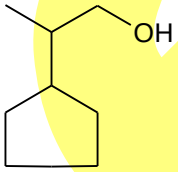
(A) the –I effect of COOH group
(B) mesomeric effect of CH = CH – group
(C) the presence of allyclic hydrogen atom
(D) the presence of +R (– OH) group

20. Which of the following alcohol does not form any product containing six-membered ring in dehydration reaction?

(A) 

(B) 

(C) 

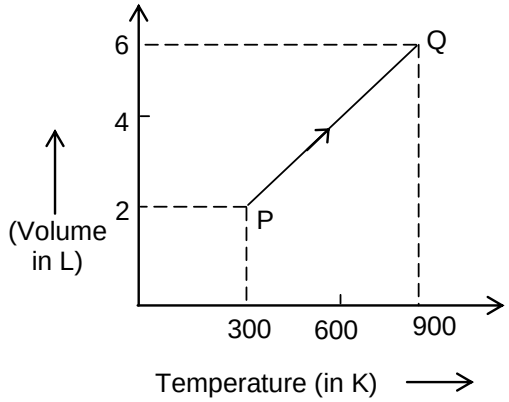
(D) 

PART-B
Numerical Type

1. $C_6H_4Cl_2$ (P) is a dichloro benzene and it is the less polar than one of its position isomer. If (P) is treated with Conc.HNO_3 & Conc. H_2SO_4 mixture. How many mono nitration products are expected?

2. The number of monochlorinated products (including stereoisomers) of isohexane is 2x. Where x is

Space For Rough Work

3. 

One mole of an ideal gas undergoes the above thermodynamic process(P $\rightarrow$ Q). If the work done in the process is expressed as -[(200x + 100)R]J, what is the value of 'x'?

4. The heat of vapourisation of a liquid at its boiling point is 20 kJ mol^{-1}. If the entropy change during this process is 400 J K^{-1} mol^{-1}, the boiling point of the liquid in Kelvin unit is

5. $C_2H_5Cl + Na + C_2H_5Cl \xrightarrow{\text{Dry ether}} \text{Products}$

(P) is the heaviest product of above reaction
If x = number of primary carbon atoms present in (P)
y = number of C – C sigma bonds in (P)
z = Number of sp^3-hybridized carbon atom in (P), then
the value of $\left(\frac{x+y+z}{10}\right)$ is

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. An ellipse, with foci at (0, 2) and (0, –2) and minor axis of length 4, passes through which of the following points?

   (A) $\left(2,\sqrt{2}\right)$ (B) $\left(2,2\sqrt{2}\right)$

   (C) $\left(1,2\sqrt{2}\right)$ (D) $\left(\sqrt{2},2\right)$

2. A line parallel to the straight line 2x – y = 0 is tangent to the hyperbola $\frac{x^2}{4}-\frac{y^2}{2}=1$ at the point (x_1, y_1). Then $\frac{x_1}{y_1}$ is equal to

   (A) 3 (B) 4

   (C) 5 (D) 7

3. The number of numbers between 5000 and 10000 formed by using the digits 1, 3, 5, 7, 9 without repetition is equal to:

   (A) 120 (B) 72

   (C) 12 (D) 6

4. The coefficient of x^{18} in the product $(1+x)(1-x)^{10}(1+x+x^2)^9$ is :

   (A) 84 (B) 126

   (C) –126 (D) –84

5. Let x = 4 be a directrix to an ellipse whose centre is at the origin and its eccentricity is $\frac{1}{2}$. Then length of latus rectum is

   (A) 9 (B) 7

   (C) 5 (D) 3

6. A test consists of 6 multiple choice questions, each having 4 alternative answers of which only one is correct. The number of ways, in which a candidate answers all six questions such that exactly four of the answers are correct, is ……

   (A) 9 (B) 15

   (C) 135 (D) 145

Space For Rough Work

7. If a directrix of a hyperbola centered at the origin and passing through the point $(4, -2\sqrt{3})$ is $5x = 4\sqrt{5}$ and its eccentricity is e, then

(A) $4e^4 + 8e^2 - 35 = 0$ (B) $4e^4 - 24e^2 + 35 = 0$

(C) $4e^4 - 12e^2 - 27 = 0$ (D) $4e^4 - 24e^2 + 27 = 0$

8. If $3x + 4y = 12\sqrt{2}$ is a tangent to the ellipse $\frac{x^2}{a^2} + \frac{y^2}{9} = 1$ for some $a \in R$, then the length of its major axis is:

(A) 12 (B) 8

(C) 16 (D) $2\sqrt{5}$

9. If a hyperbola passes through the point P (10, 16) and it has vertices at $(\pm 6, 0)$ then the equation of the normal to it at P is:

(A) $2x + 5y = 100$ (B) $x + 3y = 58$

(C) $3x + 4y = 94$ (D) $x + 2y = 42$

10. The number of 5 digit numbers of the form x y z y x in which x < y is

(A) 350 (B) 360

(C) 380 (D) 390

11. A pole AB is 18 cm apart from a point M. Point C lies in the pole AB such that $\frac{AC}{AB} = \frac{3}{10}$ and the angle of elevation of a point B is twice the angle of elevation of point C for a man standing at point M. Then height of pole is:

(A) $12\sqrt{10}$ (B) $6\sqrt{10}$

(C) $12\sqrt{5}$ (D) $9\sqrt{5}$

12. The remainder when 27^{40} is divided by 12 is

(A) 5 (B) 7

(C) 8 (D) 9

13. If the middle term of $\left(x^2 + \frac{1}{x}\right)^n$ is $924\, x^6$, then value of n is

(A) 8 (B) 10

(C) 12 (D) 20

Space For Rough Work

14. The most general solution of the equation $\tan\theta = -1, \cos\theta = \frac{1}{\sqrt{2}}$ is

(A) $n\pi + 7\frac{\pi}{4}$ (B) $n\pi + (-1)^n \frac{7\pi}{4}$

(C) $2n\pi + \frac{7\pi}{4}$ (D) none of these

15. The number of values of x in the interval [0, 5π] satisfying the equation $3\sin^2 x - 7 \sin x + 2 = 0$ is

(A) 0 (B) 5

(C) 6 (D) 10

16. If the co-ordinates of two points A and B are $\left(\sqrt{7},0\right)$ and $\left(-\sqrt{7},0\right)$ respectively and P is any point on the conic $9x^2 + 16y^2 = 144$, then PA + PB is equal to:

(A) 8 (B) 16

(C) 9 (D) 6

17. The sum of all values of $\theta \in \left(0, \frac{\pi}{2}\right)$ satisfy $\sin^2 2\theta + \cos^4 2\theta = \frac{3}{4}$ is

(A) $\frac{\pi}{2}$ (B) π

(C) $\frac{3\pi}{8}$ (D) $\frac{5\pi}{4}$

18. Let S = {$\theta \in [0, 2\pi]$: $2\cos^2\theta + 3\sin\theta = 0$}. Then the number of the elements of S is:

(A)1 (B) 2

(C) 3 (D) 4

19. The number of ways of choosing 10 objects out of 31 objects of which 10 are identical and the remaining 21 are distinct, is :

(A) 2^{20} (B) $2^{20} + 1$

(C) 2^{21} (D) $2^{20} - 1$

Space For Rough Work

20. The number of possible tangents which can be drawn to the curve $4x^2 - 9y^2 = 36$, which are perpendicular to the straight line $5x + 2y - 10 = 0$ is

(A) 0 (B) 1
(C) 2 (D) 4

PART-B
Numerical Type

1. Remainder when $3 \times 7^{22} + 2 \times 10^{22} - 44$ is divided by 18 is

2. If the tangents on the ellipse $4x^2 + y^2 = 8$ at the points (1, 2) and (a, b) are perpendicular to each other, then $\frac{b^2}{a^2}$ is equal to:

3. The tops of two poles of height 20 m and 14 m are connected by a wire. If the wire makes an angle 30^0 with the horizontal, then the length of the wire is (in meter)

4. From the digits of 224411133. How many 9 digits numbers can be formed so that even digits are at even places.

5. If $2\tan^2 x - 5\sec x - 1 = 0$ has 7 different roots in $\left[0, \frac{n\pi}{2}\right]$, $n \in N$, then greatest value of n is

Space For Rough Work

FIITJEE INTERNAL TEST

BATCHES: Two Year CRP(2224) A-lot_JEEM

PHASE TEST – III

PHYSICS, CHEMISTRY & MATHEMATICS

ANSWER KEY

Paper Code 100184

SECTION – I

(PHYSICS)

PART – A

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

PART – B

1.	8	2.	6	3.	10	4.	0.50
5.	8						

SECTION – II

(CHEMISTRY)

PART – A

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

PART – B

1.	3	2.	4	3.	2.5 [Range 2.42 - 2.62]
4.	50	5.	0.9		

SECTION – III
(MATHEMATICS)

PART – A

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

PART – B

1.	15	2	64	3.	12	4.	60
5.	15						