

**PHYSICS, CHEMISTRY & MATHEMATICS**

Pattern - CPT-1

QP Code: 100185

PAPER - 1

Time Allotted: 3 Hours

Maximum Marks: 183

- Please read the instructions carefully. You are allotted 5 minutes specifically for this purpose.
- You are not allowed to leave the Examination Hall before the end of the test.

**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. Blank Papers, clip boards, log tables, slide rule, calculator, cellular phones, pagers and electronic devices, in any form, are not allowed.

**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 HB pencil 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.

**C. Marking Scheme For All Two Parts.**

- (i) **Part-A (01-07)** – Contains seven (07) multiple choice questions which have **One or More** correct answer.  
*Full Marks: +4* If only the bubble(s) corresponding to all the correct options(s) is (are) darkened.  
*Partial Marks: +1* For darkening a bubble corresponding to **each correct option**, provided NO incorrect option is darkened.  
*Zero Marks: 0* If none of the bubbles is darkened.  
**Negative Marks: –1 In all other cases.**  
For example, if (A), (C) and (D) are all the correct options for a question, darkening all these three will result in **+4 marks**; darkening only (A) and (D) will result in **+2 marks**; and darkening (A) and (B) will result in **–1 marks**, as a wrong option is also darkened.
- (ii) **Part-A (08-13)** – Contains six (06) multiple choice questions which have ONLY ONE CORRECT answer. Each question carries **+3 marks** for correct answer and **-1 marks** for wrong 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 **+3 marks** for correct answer and **there will be no negative marking**.

Name of the Candidate : \_\_\_\_\_

Batch : \_\_\_\_\_ Date of Examination : \_\_\_\_\_

Enrolment Number : \_\_\_\_\_

# **SECTION-1 : PHYSICS**

## **PART – A**

### **(Multi Correct Choice Type)**

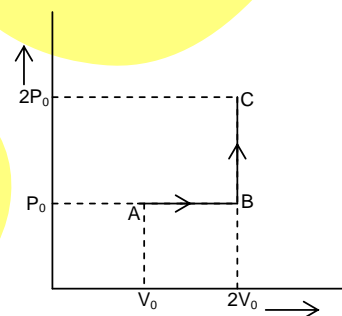
This section contains 7 **multiple choice questions**. Each question has four choices (A), (B), (C) and (D) out of which **ONE OR MORE** may be correct.

1. A bimetallic strip is formed out of two identical strips one of copper and the other of brass. The coefficients of linear expansion of the two metals are  $\alpha_C$  and  $\alpha_B$ . On heating the temperature of the strip goes up by  $\Delta T$  and the strip bends to form an arc of radius of curvature  $R$ . Then  $R$  is
- (A) Proportional to  $\Delta T$  (B) Inversely proportional to  $\Delta T$   
 (C) proportional to  $|\alpha_B - \alpha_C|$  (D) Inversely proportional to  $|\alpha_B - \alpha_C|$

2.  $C_V$  and  $C_P$  denote the molar specific heat capacities of a gas at constant volume and constant pressure respectively. Then
- (A)  $C_P - C_V$  is larger for a diatomic ideal gas than for a monatomic ideal gas  
 (B)  $C_P + C_V$  is larger for a diatomic ideal gas than for a monatomic ideal gas  
 (C)  $C_P / C_V$  is larger for a diatomic ideal gas than for a monatomic ideal gas  
 (D)  $C_P \cdot C_V$  is larger for a diatomic ideal gas than for a monatomic ideal gas

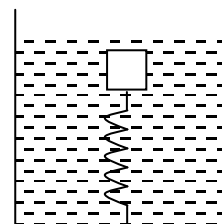
3. One mole of an ideal monoatomic gas is taken from A to C along the path ABC. The temperature of the gas at A is  $T_0$ . For the process ABC (where  $R$  is gas constant)

- (A) Heat absorbed by the gas is  $\frac{11}{12}RT_0$   
 (B) Heat absorbed by the gas is  $\frac{11}{2}RT_0$   
 (C) Work done by the gas =  $RT_0$   
 (D) Change in internal energy of gas is  $\frac{9}{2}RT_0$



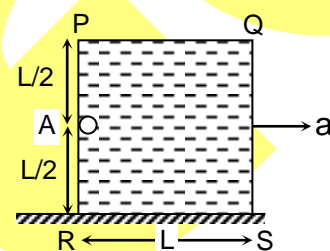
4. A block of mass ' $m$ ' is attached by means of a spring to the bottom of a tank of water as shown in figure. At equilibrium, the spring is under compression. If the tank is now allowed to fall freely, then choose the correct alternative(s)

- (A) the spring comes to its relaxed position  
 (B) the spring compresses more than its equilibrium compression  
 (C) the buoyant force becomes zero  
 (D) there will be some elongation in the spring



*Space For Rough Work*

5. A wave pulse in a horizontal string is represented by a function  $y(x,t) = \frac{6}{2 + (x - 3t)^2}$  (c. g. s system) then  
 (A) wave is propagating along '+x' axis (B) amplitude of the wave is 4 cm  
 (C) velocity of the wave is 3 cm/sec (D) amplitude of wave is 6 cm
6. Two waves travelling in opposite directions produce a standing wave. The individual wave functions are given by  $y_1 = 4 \sin(3x - 2t)$  and  $y_2 = 4 \sin(3x + 2t)$  cm, where  $x$  and  $y$  are in cm  
 (A) The maximum displacement of the motion at  $x = \frac{3\pi}{4}$  cm is 4 cm.  
 (B) The maximum displacement of the motion at  $t = \frac{\pi}{6}$  sec is  $4\sqrt{2}$  cm.  
 (C) Nodes are formed at  $x$  values given by  $0, \pi/3, 2\pi/3, \pi, 4\pi/3, \dots$   
 (D) Antinodes are formed at  $x$  values given by  $\pi/6, \pi/2, 5\pi/6, 7\pi/6, \dots$
7. A small solid ball of density  $\rho$  is held inside at point A a cubical container of side  $L$ , filled with an ideal liquid of density  $4\rho$  as shown in the figure. Now, if the container starts moving with constant acceleration  $a$  horizontally and the ball is released from point A simultaneously, then  
 (A) For ball to hit the top of container at end Q,  $a = 3g$   
 (B) For ball to hit the top of container at end Q,  $a = 2g$   
 (C) Ball hits the top of container at end Q after a time  $t = \sqrt{\frac{L}{3g}}$   
 (D) Ball hits the top of container at end Q after a time  $t = \sqrt{\frac{2L}{3g}}$



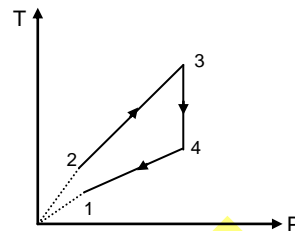
**(Single Correct Choice Type)**

This section contains **6 multiple choice questions**. Each question has four choices (A), (B), (C) and (D) out of which **ONLY ONE is correct**.

8. In a resonance tube experiment, the first resonance is observed when the length of the air column is 14.2 cm and the second resonance when the length of the air column is 46.2 cm. Which of the following is correct choice? (Velocity of sound = 320 m/s)  
 (A) The wavelength of the vibration set up in the air column is 64 cm.  
 (B) The diameter of the tube is 3 cm.  
 (C) The frequency of the tuning fork with which the air column is in resonance is 400 Hz.  
 (D) The tube will be again in resonance when the length of the air column is 78.6 cm.

*Space For Rough Work*

9. Two moles of an ideal monoatomic gas undergoes a cyclic process as shown in the figure. The temperatures in different states are given as  $6T_1 = 3T_2 = 2T_4 = T_3 = 1800$  K. Determine the work done by the gas during the cycle.
- (A)  $-10$  kJ  
(B)  $-20$  kJ  
(C)  $-15$  kJ  
(D)  $-30$  kJ



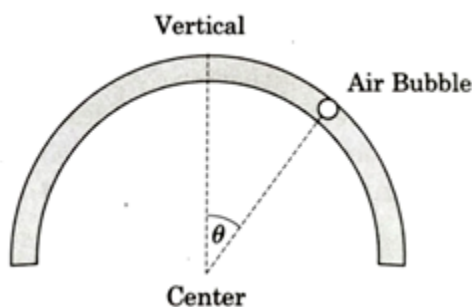
10. A monoatomic ideal gas, initially at temperature  $T_1$ , is enclosed in a cylinder fitted with a frictionless piston. The gas is allowed to expand adiabatically to a temperature  $T_2$  by releasing the piston. If  $L_1$  and  $L_2$  are the lengths of gas column before and after expansion respectively, then  $T_1/T_2$  is given by

(A)  $\left(\frac{L_1}{L_2}\right)^{2/3}$       (B)  $\frac{L_1}{L_2}$       (C)  $\frac{L_2}{L_1}$       (D)  $\left(\frac{L_2}{L_1}\right)^{2/3}$

11. A Sinusoidal wave traveling in the positive direction on stretched string has amplitude 20 cm wavelength 1.0 m and wave velocity 5.0 m/s. At  $x = 0$  and  $t = 0$  it is given that  $y = 0$  and  $\frac{\delta y}{\delta t} < 0$ . Find the wave function  $y(x, t)$ .

(A)  $y(x, t) = (0.02) \sin\left\{(2\pi\text{m}^{-1})x + (10\pi\text{sec}^{-1})t\right\} \text{m}$   
 (B)  $y(x, t) = (0.02) \sin\left\{(10\pi\text{sec}^{-1})t + (2\pi\text{m}^{-1})x\right\} \text{m}$   
 (C)  $y(x, t) = (0.02) \sin\left\{(2\pi\text{m}^{-1})x - (10\pi\text{sec}^{-1})t\right\} \text{m}$   
 (D)  $y(x, t) = (0.02) \sin\left\{(\pi\text{m}^{-1})x + (5\pi\text{sec}^{-1})t\right\} \text{m}$

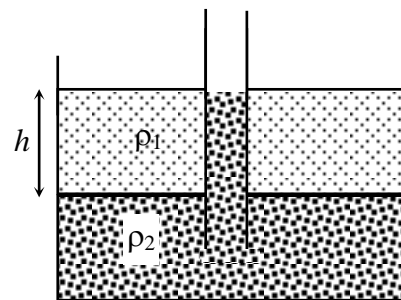
12. A glass tube filled with colored water, sealed at both the ends is bent into an arc. There is a small air bubble inside. The tube is held with its plane vertical. When the tube moves with constant acceleration either left or right, the bubble shift and settles at some place either left or right of the highest point. For the situation shown in the figure, what can you conclude about acceleration vector of the tube?



- (A) It points towards the right  
(B) It points towards the left  
(C) Its magnitude is  $g \tan \theta$   
(D) Insufficient data

Space For Rough Work

13. A container has two immiscible liquids of densities  $\rho_1$  and  $\rho_2 (> \rho_1)$ . A capillary tube of radius  $r$  is inserted in the liquid so that its bottom reaches upto the denser liquid. The denser liquid rises in the capillary and attains a height  $h$  from the interface of the liquids, which is equal to the column length of the lighter liquid. Assuming angle of contact to be zero, the surface tension of heavier liquid is



- (A)  $2\pi r \rho_2 g h$       (B)  $\frac{\rho_2 r g h}{2}$       (C)  $\frac{r}{2} (\rho_2 - \rho_1) g h$       (D)  $2\pi r (\rho_2 - \rho_1) g h$

### PART – B (Numerical based)

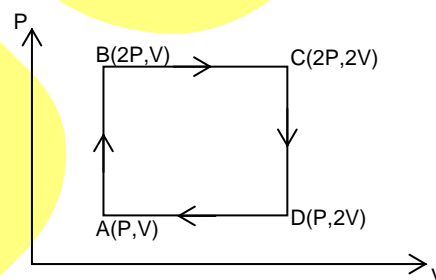
1. An organ pipe  $P_1$  closed at one end vibrating in its first overtone and another pipe  $P_2$  open at the both ends vibrating in its third overtone are in resonance with a given tuning fork.

The ratio of the length of  $P_1$  to that of  $P_2$  is  $\frac{3}{n}$  then  $n = ?$

2. A bus is moving towards a huge wall with a velocity of 5 m/s. The driver sounds a horn of frequency 200 Hz. The frequency of the beats heard by a passenger of the bus will be (In Hz) nearly (velocity of sound in air = 338 m/s)

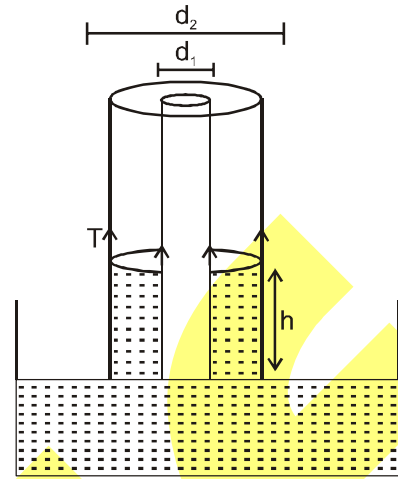
3. An ideal monoatomic gas is taken round the cycle ABCDA as shown in the  $P - V$  diagram (see figure).

The work done during the cycle is  $\frac{PV}{n}$  then  $n = ?$

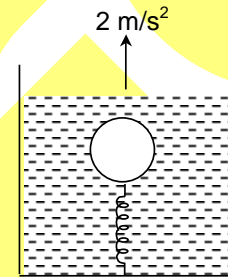


Space For Rough Work

4. A glass rod of diameter  $d_1 = 1.5$  mm is inserted symmetrically into a glass capillary with inside diameter  $d_2 = 2$  mm. Then whole arrangement is vertically oriented and brought in contact with surface of water. To what height will the water rise in capillary in centi-meters.



5. A ball of mass 10 kg and density  $1 \text{ gm/cm}^3$  is attached to the base of a container having a liquid of density  $1.1 \text{ gm/cm}^3$ , with the help of a spring as shown in the figure. The container is going up with an acceleration  $2 \text{ m/s}^2$ . If the spring constant of the spring is  $200 \text{ N/m}$ , then find the elongation (in cm) in the spring



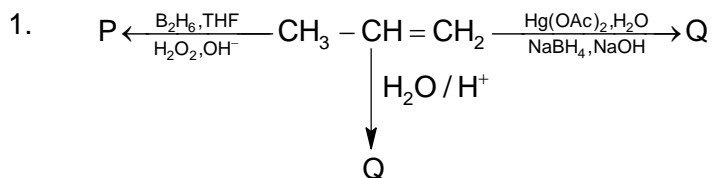
*Space For Rough Work*

## SECTION-2 : CHEMISTRY

### PART – A

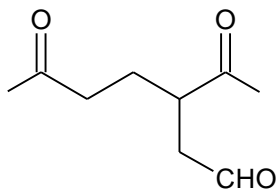
#### (Multi Correct Choice Type)

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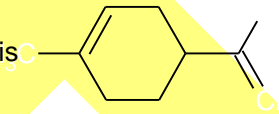


Choose correct statement(s) from the following.




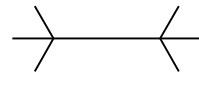
- (A) 'P' is a primary alcohol  
(B) 'Q' is a secondary alcohol  
(C) 'P' and 'Q' are position isomers  
(D) Neither 'P' nor 'Q' is an alcohol
2. A hydrocarbon X ( $\text{C}_{10}\text{H}_{16}$ ) upon catalytic hydrogenation gives 4-methyl-1-isopropyl cyclohexane. Also (X) upon ozonolysis followed by hydrolysis in the presence of Zn gives  $\text{CH}_2\text{O}$  and



The correct statement(s) concerning (X) is/are

- (A) Structure of (X) is  (B) (X) has two chiral carbon.  
(C) (X) has one chiral carbon. (D) With excess of HCl, (X) gives racemic dichloride.

3. Choose all alkane that give only one monochloro derivative upon reaction with chlorine in sunlight.

- (A)  (B)   
(C)  (D) 

Space For Rough Work

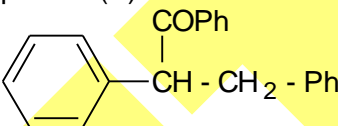
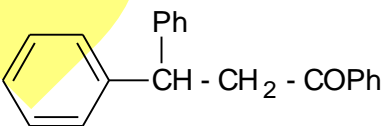
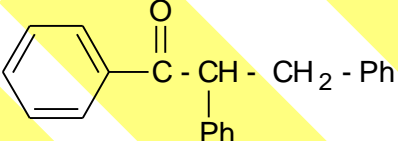
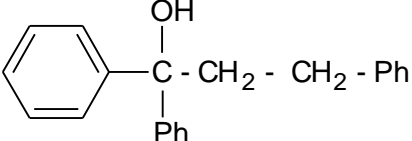
4.  $S(s) + O_2(g) \longrightarrow SO_2(g) + xkJ$   
 Monoclinic  
 Choose the correct statements from the following  
 (A) the heat of formation of  $SO_2$  is equal to the heat of combustion of sulphur  
 (B)  $\Delta H = \Delta U$   
 (C) absolute entropy for  $S(s)$  and  $O_2(g)$  is zero  
 (D) this is an exothermic reaction
5. Which of the following reactant(s) produce(s) racemic mixtures when treated with  $HBr$ ?  
 (A) Cis-2-butene (B) Trans-2-butene  
 (C) 1-butene (D) Isobutene
6. The heat of hydrogenation of which of the following compound(s) is/are higher than that of 2-methyl-2-butene?  
 (A)  $CH_2 = CH - CH = CH_2$  (B)  $(CH_3)_2C = C(CH_3)_2$   
 (C)  $CH_3CH = CH_2$  (D)  $CH_2 = CH_2$
7. Which of the following reagent(s) can be used for ethylation of benzene?  
 (A)  $CH_2 = CH_2/HF$  (B)  $C_2H_5OH/BF_3$   
 (C)  $CH_3CH_2Cl/NaOH$  (D)  $CH_3CH_3/Br_2/\Delta$

**(Single Correct Choice Type)**

This section contains **6 multiple choice questions**. Each question has four choices (A), (B), (C) and (D) out of which **ONLY ONE is correct**.



Major product(P) in the above reaction is:

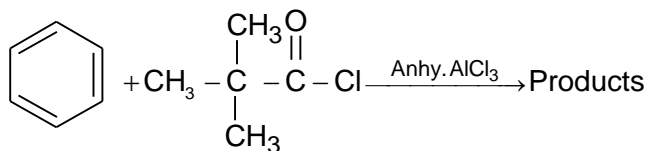
- (A)  (B) 
- (C)  (D) 

9. Which is correct for a reversible process at equilibrium?  
 (A)  $\Delta S(\text{system}) = \Delta S(\text{surrounding})$  (B)  $\Delta H - T\Delta S > 0$   
 (C)  $\Delta S(\text{Total}) > 0$  (D)  $\Delta H - T\Delta S = 0$

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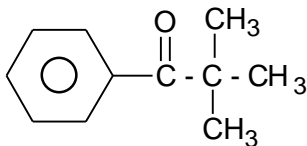


10.

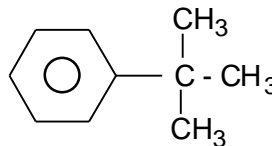


Which is not formed in above reaction?

(A)

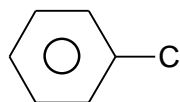


(B)



(C) CO

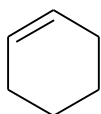
(D)



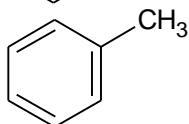
11.

Which of the following substance does not form dicarbonyl compounds on ozonolysis reactions?

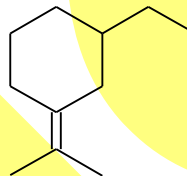
(A)

(B)  $\text{CH}_3\text{CH}=\text{CH}-\text{CH}=\text{CHCH}_3$ 

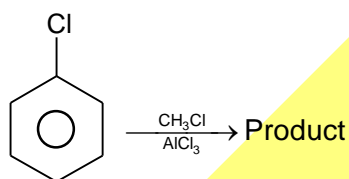
(C)



(D)

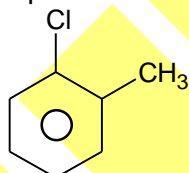


12.

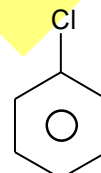


Which product does not form in above reaction

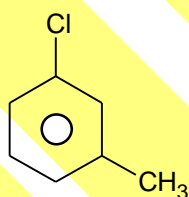
(A)



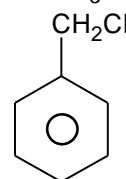
(B)



(C)

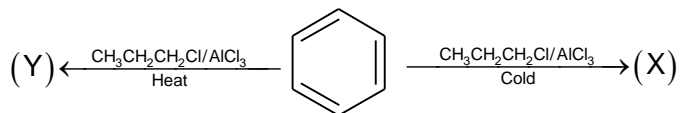


(D)

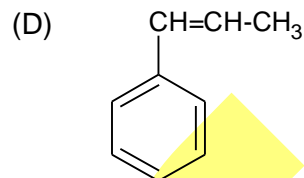
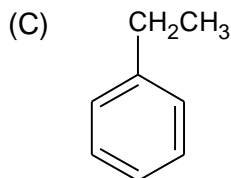
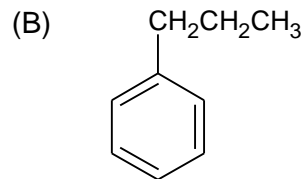
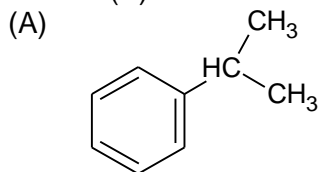


Space For Rough Work

13.

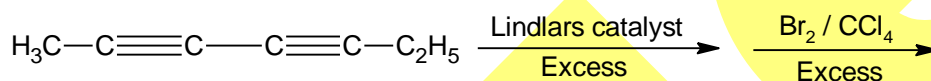


Product(Y) in the above reaction is



### PART – B (Numerical based)

1. In the reaction below



How many different isomers of tetra bromides are formed?

2.  $\text{A}_2(\text{g}) \longrightarrow \text{A}(\text{g}) + \text{A}(\text{g})$ 

The heat of reaction of above decomposition of a diatomic molecule  $\text{A}_2(\text{g})$ , into monoatomic gases  $\text{A}(\text{g})$  is  $40.5 \text{ kJ mol}^{-1}$  at  $320 \text{ K}$ . What will be the enthalpy change of the reaction at  $330 \text{ K}$  in  $\text{kJ mol}^{-1}$  unit?

$$[C_P \text{ of monoatomic gases} = \frac{5R}{2}]$$

$$[C_P \text{ of diatomic gases} = \frac{7R}{2}]$$

$$[R = 8.3 \text{ J K}^{-1} \text{ mol}^{-1}]$$

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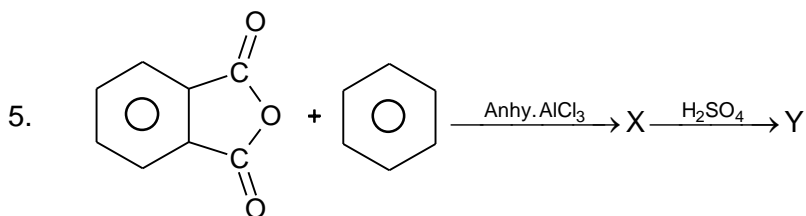
Space For Rough Work

3. One mole of an ideal monoatomic gas undergoes expansion from state A(1 atm, 100K) to state B(1 atm, 300 K) in a reversible process. What is the entropy change of the system in  $\text{JK}^{-1} \text{mol}^{-1}$  unit?

$$[C_V = \frac{3R}{2}, R = 8.3 \text{ J K}^{-1} \text{ mol}^{-1}][\ln 3 = 1.09]$$

4.  $(\text{CH}_3)_2\text{CHBr} \xrightarrow[2. \text{CuI}]{1. \text{Li}} \text{X} \xrightarrow{\text{CH}_3\text{CH}_2\text{CH}_2\text{Br}} \text{Y}$

How many secondary carbon atom(s) is/are present in 'Y' in the above reaction?



How many total number of pi-bond(s) is/are present in 'Y'?

*Space For Rough Work*

## **SECTION-3 : MATHEMATICS**

### **PART – A**

#### **(Multi Correct Choice Type)**

This section contains 7 **multiple choice questions**. Each question has four choices (A), (B), (C) and (D) out of which **ONE OR MORE** may be correct.

1. If the coefficients of  $x^2$  and  $x^3$  are both zero, in the expansion of the expression  $(1 + ax + bx^2)(1 - 3x)^{15}$  in powers of  $x$ , then  
 (A)  $a = 54$  (B)  $a = 28$   
 (C)  $b = 315$  (D)  $b = 714$
2. The value(s) of  $x \in [0, \pi]$  which satisfy the equation  $\sin x + \frac{1}{2}\cos x = \sin^2\left(x + \frac{\pi}{4}\right)$  is:  
 (A)  $0^\circ$  (B)  $30^\circ$   
 (C)  $60^\circ$  (D)  $150^\circ$
3. A hyperbola has focus at origin, its eccentricity is  $\sqrt{2}$  and corresponding directrix is  $x + y + 1 = 0$ . The equation of its asymptotes is/are  
 (A)  $x + 1 = 0$  (B)  $x - 1 = 0$   
 (C)  $y + 1 = 0$  (D)  $y - 1 = 0$
4. Equation of tangent to the ellipse  $\frac{x^2}{25} + \frac{y^2}{16} = 1$  which cuts off equal intercepts on the axes is  
 (A)  $x + y - \sqrt{41} = 0$  (B)  $x - y + \sqrt{41} = 0$  (C)  $x + y - 9 = 0$  (D)  $x - y + 9 = 0$
5. If  $y = mx + c$  tangent to  $\frac{x^2}{a^2} - \frac{y^2}{b^2} = 1$  having eccentricity  $\sqrt{7}$  then value(s) of  $m$  can be  
 (A) 2 (B) 4  
 (C) 6 (D) 7
6. If  $k \in \mathbb{R}$  and the middle term of  $\left(\frac{k}{2} + 2\right)^8$  is 1120, then value of  $k$  is:  
 (A)  $-4$  (B)  $-2$   
 (C) 2 (D) 4
7. The value(s)  $\alpha \in \mathbb{R}$  such that the equation,  $\cos 2x + \alpha \sin x = 2\alpha - 7$  has a solution  
 (A) 2 (B) 3  
 (C) 4 (D) 5

*Space For Rough Work*

**(Single Correct Choice Type)**

This section contains **6 multiple choice questions**. Each question has four choices (A), (B), (C) and (D) out of which **ONLY ONE is correct**.

8. The most general solutions of the equation  $\sec^2 x = \sqrt{2} (1 - \tan^2 x)$  are given by  
 (A)  $n\pi + \frac{\pi}{8}$  (B)  $n\pi \pm \frac{\pi}{4}$   
 (C)  $n\pi \pm \frac{\pi}{8}$  (D) none of these
9. If shortest distance between two tangents to the curve  $\frac{x^2}{2} - y^2 = 1$  is 2, then area of quadrilateral made by the tangent's points of intersection with coordinate axes equals  
 (A)  $3\sqrt{2}$  (B)  $6\sqrt{2}$   
 (C)  $\sqrt{12}$  (D)  $\sqrt{24}$
10. Five digit numbers divisible by 9 are to be formed by using the digits 0, 1, 2, 3, 4, 5, 7 without repetition. The total numbers of such numbers is  $\lambda^3$ , then  $\lambda$  is  
 (A) 5 (B) 6  
 (C) 8 (D) 9
11. A circle with centre (2, 0) and largest possible radius is inscribed in ellipse  $\frac{x^2}{36} + \frac{y^2}{16} = 1$ . If the circle passes through the point  $(1, \alpha)$  then find the value of  $5\alpha^2$ .  
 (A) 29 (B) 37  
 (C) 59 (D) 73
12. The term independent of x in the expansion  $\left(\frac{x}{4} - \frac{12}{x^2}\right)^{12}$  is  
 (A)  ${}^{12}C_4 \frac{3^4}{4^4}$  (B)  ${}^{-12}C_5 \frac{3^5}{4^2}$  (C)  ${}^{12}C_6 3^6$  (D)  ${}^{12}C_5 \frac{3^5}{4^2}$
13. From a point P a pair of tangents are drawn to  $\frac{x^2}{16} - \frac{y^2}{9} = 1$  so that they intersect the coordinate axes in concyclic points. The locus of P is  
 (A)  $x^2 + y^2 = 25$  (B)  $x^2 - y^2 = 25$   
 (C)  $x^2 + y^2 = 24$  (D)  $x^2 - y^2 = 2$

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*Space For Rough Work*

**PART – B**  
**(Numerical based)**

1. Find the number of 2 digit numbers of 'n' for which  $7^n + 3^n$  is divisible by 10.
2. Three children, each accompanied by a guardian, seek admission in a school. The principal wants to interview all the 6 persons one after the other subject to the condition that no child is interviewed before its guardian. In how many ways can this be done?
3. Largest value of  $n \in \mathbb{N}$  for which  $100!$  is divisible by  $(24)^n$  is
4. Distance between the parallel tangents having slopes  $-\frac{4}{3}$  to the ellipse  $\frac{x^2}{18} + \frac{y^2}{32} = 1$ , is
5. A normal to the hyperbola  $\frac{x^2}{4} - \frac{y^2}{1} = 1$ , has equal intercepts on positive x and y – axes. If this normal touches the ellipse  $\frac{x^2}{a^2} + \frac{y^2}{b^2} = 1$ , then find  $\frac{9}{25}(a^2 + b^2)$ .

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*Space For Rough Work*

# FIITJEE INTERNAL TEST

BATCHES: Two Year CRP(2224) A-lot\_PAPER-1  
PHASE TEST – III

PHYSICS, CHEMISTRY & MATHEMATICS

## ANSWER KEY

Paper Code  
100185

### SECTION-1 : PHYSICS

#### PART – A

- |       |       |        |       |
|-------|-------|--------|-------|
| 1. BD | 2. BD | 3. BCD | 4. BC |
| 5. AC | 6. CD | 7. BC  | 8. A  |
| 9. A  | 10. D | 11. C  | 12. C |
| 13. C |       |        |       |

#### PART – B

- |      |      |      |      |
|------|------|------|------|
| 1. 8 | 2. 6 | 3. 1 | 4. 6 |
| 5. 6 |      |      |      |

### SECTION – 2 : CHEMISTRY

#### PART – A

- |        |        |        |        |
|--------|--------|--------|--------|
| 1. ABC | 2. AC  | 3. ABD | 4. ABD |
| 5. ABC | 6. ACD | 7. AB  | 8. B   |
| 9. D   | 10. D  | 11. D  | 12. D  |
| 13. A  |        |        |        |

#### PART – B

- |                                 |                                |      |  |
|---------------------------------|--------------------------------|------|--|
| 1. 4                            | 2. 40.62 (range 40.51 – 40.71) |      |  |
| 3. 22.61 [range 22.51 to 22.71] | 4. 2                           | 5. 8 |  |

### SECTION – 3 : MATHEMATICS

#### PART – A

- |       |        |         |       |
|-------|--------|---------|-------|
| 1. BC | 2. ABD | 3. AC   | 4. AB |
| 5. CD | 6. BC  | 7. ABCD | 8. C  |
| 9. A  | 10. B  | 11. C   | 12. A |
| 13. B |        |         |       |

#### PART – B

- |       |       |       |         |
|-------|-------|-------|---------|
| 1. 45 | 2. 90 | 3. 32 | 4. 9.60 |
| 5. 3  |       |       |         |