



JEE | NEET | GUJCET | BOARDS (11TH-12TH) | FOUNDATION (8TH-10TH)

MAX TIME: 40 MIN | TEST PAPER | M.M-80 | CODE-

Instructions: Each question carries 4 marks and are only one correct answer type questions.

CLASS – XII (JEE MAINS)

PHYSICS

- Various optical processes are involved in the formation of a rainbow. Which of the following provides the correct order in time in which these processes occur?
(a) Refraction, total internal reflection, refraction
(b) Total internal reflection, refraction, total internal reflection.
(c) Total internal reflection, refraction, refraction.
(d) Refraction, total internal reflection, total internal reflection.
- A specially designed vernier calliper has the main scale least count of 1 mm. On the vernier scale, there are 10 equal divisions and they match with 11 main scale divisions. Then, the least count of the vernier calliper is
(a) 0.1 mm (b) 0.909 mm
(c) 1.1 mm (d) 0.09 mm
- A student in a town in India, where the price per unit (1 unit = 1 kW-Hr) of electricity is Rs. 5.00. Purchases a 1 kVA UPS (uninterrupted power supply) battery. A day before the exam, 10 friends arrive at the student's home with their laptops and all connect their laptops to the UPS. Assume that each laptop has a constant power requirement of 90 W. Consider the following statements.
I. All the 10 laptops can be powered by the UPS if connected directly.
II. All the 10 laptops can be powered if connected using an extension box with a 3 A fuse.
III. If all the 10 friends use the laptop for 5 hours, then the cost of the consumed electricity is about Rs.22.50.
Select the correct option with true statements.
(a) I only (b) I and II only
(c) I and III only (d) II and III only
- Frosted glass is widely used for translucent windows. The region where a transparent adhesive tape is stuck over the frosted glass becomes transparent. The most reasonable explanation for this is
(a) Diffusion of adhesive glue into the glass
(b) Chemical reaction at the adhesive tape – glass interface.

- (c) Refractive index of adhesive glue is close to that of glass
(d) Adhesive tape is more transparent than glass.
- An earthen pitcher used in summer cools water in it essentially by evaporation of water from its porous surface. If a pitcher carries 4 kg of water and the rate of evaporation is 20 g per hour, temperature of water in it decreases by ΔT in two hours. The value of ΔT is close to (ratio of latent of evaporation to specific heat of water is 540°C)
(a) 2.7°C (b) 4.2°C
(c) 5.4°C (d) 10.8°C

CHEMISTRY

- The strength of '10 volume' solution of Hydrogen peroxide is nearly
(a) 35 g/L (b) 45 g/L
(c) 30 g/L (d) 40 g/L
- The oxidation state of central carbon atom in C_3O_2 is
(a) +2 (b) 0
(c) +4 (d) +3
- 1 mol of an ideal gas expanded reversibly from 10 L to 100 L at 27°C . Work done involved in the process is
(a) -11.5 kJ (b) -5.74 kJ
(c) -57.4 kJ (d) -109.8 kJ
- Molar solubility of $\text{Zn}(\text{OH})_2$ in 0.1 M NaOH solution is ($K_{sp} \text{Zn}(\text{OH})_2 = 1 \times 10^{-15}$)
(a) 10^{-9} M (b) 10^{-13} M
(c) 10^{-14} M (d) 10^{-15} M
- If 10 g He diffuses from a tiny hole in 2s, then amount of SO_2 diffused from same tiny hole in 5s at same temperature and pressure conditions will be
(a) 50g (b) 100g
(c) 1.56g (d) 40g

YOU ARE THE CREATOR OF YOUR OWN DESTINY. BEST OF LUCK! BE SAKSHAM!



MATHEMATICS

11. Let $A = \begin{bmatrix} -4 & 3 \\ -1 & 0 \end{bmatrix}$. Then inverse of matrix A is
 (a) $\frac{1}{3} \begin{bmatrix} 0 & -3 \\ 1 & -4 \end{bmatrix}$ (b) $\frac{1}{3} \begin{bmatrix} 4 & -1 \\ 3 & 0 \end{bmatrix}$
 (c) $\begin{bmatrix} 0 & -3 \\ 1 & -4 \end{bmatrix}$ (d) $\begin{bmatrix} 4 & -1 \\ 3 & 0 \end{bmatrix}$
12. Let $A = \begin{bmatrix} \cos 30^\circ & -\sin 60^\circ \\ \sin 60^\circ & \cos 30^\circ \end{bmatrix}$. Then $|A| =$
 (a) $\frac{3}{4}$ (b) $\frac{1}{2}$
 (c) $\frac{2}{4}$ (d) $\frac{1}{4}$
13. If $A = [a_{ij}]_{3 \times 3}$ is a matrix, such that $\text{Det.}(A) = -15$ and C_{ij} represents the cofactor of a_{ij} , then the value of $a_{11}C_{11} + a_{12}C_{12} + a_{13}C_{13} =$
 (a) -15 (b) 15
 (c) 0 (d) 1
14. If $A = \begin{bmatrix} 1 & -2 & 4 \\ 2 & -1 & 3 \\ 4 & 2 & 0 \end{bmatrix}$ is the adjoint of a square matrix B, then B^{-1} is equal to
 (a) $\pm A$ (b) $\pm \sqrt{2}A$
 (c) $\pm \frac{1}{\sqrt{2}}B$ (d) $\pm \frac{1}{\sqrt{2}}A$
15. For the G.P, 3rd term is 4 and product of 1st and 4th term is 1, then fifth term is
 (a) 4^3 (b) 4^5
 (c) 4^4 (d) 4^6

MENTAL ABILITY

16. If North-East is called South, South-East is called West, South-West is called North, and West is called North-East, then what will North be called?
 (a) South (b) North-East
 (c) South-East (d) North-West
17. If a person starts walking towards East and after walking 10 meters, he turns to his left and walks 5 meters, which direction is he facing now?
 (a) North (b) East
 (c) South (d) West
18. A person facing East turns 45 degrees clockwise and then another 180 degrees clockwise. Which direction is he facing now?
 (a) South-East (b) North
 (c) North-East (d) South
19. If South-East becomes North, North-East becomes West, South-West becomes South, and West becomes North-East, then which direction is South?
 (a) North-East (b) North
 (c) West (d) South-West
20. Rita starts from her home, walks 2 km towards East, turns left and walks 3 km, then again turns left and walks 2 km. Which direction is she facing now?
 (a) North (b) South
 (c) East (d) West

OUR PRIDE

JEE



MANAV
(296/300)
AIR 113
IIT-HYD



RAHUL
AIR 313
IIT-DELHI



PRANJAL
IIT-ROORKEE



VARDHA
IIT-PATNA



SAUMYA
IIT-BHU



OM
IIT-ROORKEE



SHREYANSH
IIT-JODHPUR



VIKAS GUPTA
ISM-DHANBAD

NEET



ARYA
(690/720)
AIR 345
IMS-BHU



ASTHA
(659/720)



ADITI
(647/720)



DHAIRYA
(606/720)



AVNI
(598/720)



BANSARI
(578/720)



SALONI
(562/720)



KHUSHI
(509/720)

12TH BOARD



ARYA
98.2%



OM
95%



DIVYA
94.78%



SHREYANSH
94.6%



RAHUL
94%



KHUSHI
93%



DHYEY
92%



TANISHKA
91.06%

10TH BOARD



NISHKA
97%



JYONEET
96.8%



NISHI
96%



VEDANT PATEL
95.33%



AMBER RAI
95%



VEDANT VYAS
94.8%



ARYAN PATEL
93.5%



YASH PATEL
90.33%