PHYSICS

BOOKS - SAI PHYSICS (TELUGU ENGLISH)

SAMPLE PAPER 2017

Physics

1. A parallel beam of light of intensity $I_\circ$ is

incident on a coated glass plate. If 25% of the

incident light is reflected from the upper

surface and 50% of light is reflected from the

lower surface of the glass plate, the ratio of

maximum to minimum intensity in the

interference region of the reflected light is

A. $\left(\dfrac{\frac{1}{2} + \sqrt{\frac{3}{8}}}{\frac{1}{2} - \sqrt{\frac{3}{8}}} \right)^{2}$

B. $\left(\dfrac{\frac{1}{4} + \sqrt{\frac{3}{8}}}{\frac{1}{2} - \sqrt{\frac{3}{8}}} \right)^{2}$

C. 5/8

D. 8/5

Answer: B

2. Which of the following is emitted when Pu_{94}^{239} decays into U_{92}^{235}?

A. Gamma Ray

B. Neutron

C. Electron

D. Alpha particle

Answer: D

3. A horizonta pipeline carrying gasoline has a cross -sectional diameter of 2 mm. If the viscosity and density of the gasoline are 6×10^{-3} poise and 720 kg //m ^3` respectively , the velocity after which the flow becomes turbulent is

A. $> 1.66\dfrac{m}{s}$

B. $> 3.33\dfrac{m}{s}$

C. $> 1.6 \times 10^{-3}\dfrac{m}{s}$

D. $> 0.33\dfrac{m}{s}$

Answer: D

▶ **Watch Video Solution**

4. A piece of copper and a piece of germanium are cooled from temperature to 80 K . Then which one of the following is correct ?

A. Resistance of each will increase

B. Resistance of each will decrease

C. Resistance of copper will decrease while

   that of germanium will increase

D. Resistance of copper will increase while

   that of germanium will decrease

Answer: C

5. A planet of mass 'm' moves in an elliptical orbit around an unknown star of mass 'M' such that its maximum and minimum distances from the star are equal to r_1 and r_2 respectively. The angular momentum of the planet relative to the centre of the star is

A. $m\sqrt{\dfrac{2GMr_1r_2}{r_1 + r_2}}$

B. 0

C. $m\sqrt{\dfrac{2GM(r_1 + r_2)}{r_1 + r_2}}$

D. $\sqrt{\dfrac{2GMmr_1}{r_1 + r_2}}r_2$

Answer: A

6. A generator with a circular coil of 100 turns of area $2 \times 10^{-2}m^2$ is immersed in a 0.01 T magnetic field and rotated at a frequency of 50 Hz . The maximum emf which is prodiuced during a cycle is

A. 6.28V

B. 3.44V

C. 10V

D. 1.32V

Answer: A

▶ **Watch Video Solution**

7. Which of the following statement is not true

?

A. the   resistance   of   an   intrinsic

semiconductor decrease with increase in

temperature

B. doping pure Si with trivalent impurities

   gives p-type semiconductor

C. the majority carrieers in n-type

   semiconductors are holes

D. a p-n junction can act as a

   semiconductor diode

Answer: C

8. The decleration of a car travelling on astraight highway is a function of its instantaneous velocity 'v' given by $w = a\sqrt{v}$, where 'a' is a constant . If the initial velocity of the car is 60 km/hr, the distance the car will travel and the time it takes before it stops are

    A. 2/3m,1/2s

    B. 3/2am, 1/2a s

    C. 3a/2 m, a/2s

    D. 2/3a m, 2/as

Answer: D

▶ **View Text Solution**