

Choose the correct answer :

6. The insulators whose behaviour gets modified in the electric field is

- (a) conductor (b) semi conductor  
(c) dielectrics (d) none.

7. The medium which does not contain generators of voltage and currents is \_\_\_\_\_ medium.

- (a) Source free (b) Homogeneous  
(c) Isotropic (d) None.

8. Formulae relating amplitude of reflected and transmitted waves with that of incident wave are known as \_\_\_\_\_ formulae.

- (a) Fresnel (b) Larmor  
(c) Thomson (d) Brewster.

9. When the phase difference between any two waves varies in a completely random way, they are said to be

- (a) coherent (b) incoherent  
(c) scattered (d) in phase.

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10. Antisymmetric tensor is also known as \_\_\_\_\_ tensor.

- (a) Electromagnetic field  
(b) Homogeneous  
(c) Rayleigh's  
(d) Maxwell's.

SECTION B — (5 × 4 = 20 marks)

Answer ALL questions, choosing either (a) or (b).

11. (a) Prove that  $\epsilon_r = 1 + k$ .

Or

(b) Differentiate between polar and non-polar molecules.

12. (a) Mention the differential form of Maxwell's equations.

Or

(b) A broadside antenna consists of 10 aerials having  $\lambda/2$  common separation. Find out the width of main lobe.

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