

TIME: 40 minutes

MAXIMUM MARKS: 30

SEM	SET	PAPER CODE	TITLE OF THE PAPER
II	2014	14PPH2106	ELECTRODYNAMICS AND PLASMA PHYSICS

SECTION - A**Answer all the questions:****30 × 1 = 30****Choose the correct answer:**

- The Coulomb's law of inverse squares is
 - $F \propto \frac{q_1 q_2}{r^2}$
 - $F \propto \frac{q}{r^2}$
 - $F \propto \frac{q_1}{r^2} q_2$
 - None
- The displacement density 'D' and Electrified 'E' are related to
 - $D = \epsilon / E$
 - $D = \epsilon E$
 - $D = E / \epsilon$
 - $D = \epsilon^2 E$
- The integral form of Gauss law is $\oint_s D \cdot da \dots$
 - $\int_v \rho dv$
 - $\int_s \rho ds$
 - $\int_v \rho^2 dv$
 - $\int v dv$
- The value of μ_0 is
 - $4\pi \times 10^7$ Hen
 - $4\pi \times 10^7$ Hen/m
 - $4\pi \times 10^{-7}$ Hen/m
 - $4\pi \times 10^{-7}$ m
- In terms of B and H, permeability is given by
 - $\mu = BH$
 - $\mu = H/B$
 - $\mu = H^2 B$
 - $\mu = B/H$

15. The normal component of magnetic flux density, across the boundary surface is always _____.
- a) Discontinuous b) Continuous
c) Zero d) None
16. $\oint \mathbf{E} \cdot d\mathbf{s}$ is given by
- a) $-\int_s \mathbf{B} \cdot d\mathbf{a}$ b) $\int_s \mathbf{B} \cdot d\mathbf{a}$ c) $-\int_s \dot{\mathbf{B}} \cdot d\mathbf{a}$ d) $-\int \mathbf{D} \cdot d\mathbf{a}$
17. When the magnetic field strength is entirely transverse, then the waves are called
- a) TE waves b) TM waves
c) TEM waves d) Plane waves
18. When $\tan\theta_1 = \sqrt{\frac{\epsilon_2}{\epsilon_1}}$ then the angle is called
- a) Total internal reflection b) Angle of reflection
c) Angle of refraction d) Brusters angle
19. The ratio of $\frac{E_r}{E_i}$ is called
- a) Transmission coefficient b) Reflection coefficient
c) Plane polairsation d) None
20. In the equation $\omega t - \beta x = a \text{ const.}$ then the velocity is
- a) $\omega\beta$ b) ωt c) $\omega^2\beta$ d) ω/β
21. When the fields are entirely transverse and the constraint in amplitude along the direction of propagation, the they are called
- a) TE waves b) TM waves
c) TEM waves d) None
22. In the wave guide system, $\bar{\gamma} = \bar{\alpha} + i\bar{\beta}$, where $\bar{\beta}$ is called
- a) Phase shift constant b) Attenuation constant
c) Phase velocity d) None

23. Velocity of the wave is given by
 a) $\frac{1}{\sqrt{\mu \epsilon}}$ b) $\sqrt{\mu \epsilon}$ c) $\sqrt{\mu \cdot \epsilon}$ d) None
24. In terms of frequency and wavelength, velocity is given by
 a) $f/\lambda = v$ b) $f\lambda = v$ c) $\lambda/T = v$ d) None
25. Weakly ionized plasma is known as
 a) Hot plasma b) Low temperature plasma
 c) Thermal plasma d) None
26. The range of electron density is
 a) $10^7-10^{12}\text{cm}^{-3}$ b) 10^7-10^{12}cm^3
 c) 10^7-10^{12}m^3 d) 10^7-10^{10}cm^3
27. The Langmuir plasma frequency V_p is given by
 a) $\frac{2\pi}{\omega_p}$ b) $2\pi\omega_p$
 c) $\frac{\omega_p}{2\pi}$ d) ω_p
28. In arc discharges, the value of plasma frequency used is
 a) 10 mc/s b) 100 kc/s
 c) 100 mc/s d) 1000 mc/s
29. For producing plasma under laboratory conditions are through
 a) Gas discharge b) MHD
 c) Thermo emission d) EGD generation
30. In plasma, charged particles whose trajectories are
 a) Curved and straight b) Straight
 c) Ellipsoidal d) None
