www.Padasalai.Net

Padasalai Official – Android App – Download Here

படங்களை தொடுக! பாடசாலை வலைதளத்தை சமூக ஊடகங்களில் பின்தொடர்க!! உடனுக்குடன் புதிய செய்திகளை Notifications-ல் பெறுக!

Zoom Touch Below Links Download!

12th Standard	Syllabus	Books	Study Materials – EM	Study Materials - TM	Practical	Online Test (EM & TM)
	Monthly Q&A	Mid Term Q&A	Revision Q&A	PTA Book Q&A	Centum Questions	Creative Questions
	Quarterly Exam	Half Yearly Exam	Public Exam	NEET		

11th Standard	Syllabus	Books	Study Materials – EM	Study Materials - TM	Practical	Online Test (EM & TM)
	Monthly Q&A	Mid Term Q&A	Revision Q&A	Centum Questions	Creative Questions	
	Quarterly Exam	Half Yearly Exam	Public Exam	NEET		

10th Standard	Syllabus	Books	Study Materials - EM	Study Materials - TM	Practical	Online Test (EM & TM)
	Monthly Q&A	Mid Term Q&A	Revision Q&A	PTA Book Q&A	Centum Questions	Creative Questions
	Quarterly Exam	Half Yearly Exam	Public Exam	NTSE	SLAS	

9th Standard	Syllabus	Books	Study Materials	1st Mid Term	2nd Mid Term	3rd Mid Term
	Quarterly Exam	Half Yearly Exam	Annual Exam	RTE		

8th Standard	Syllabus	Books	Study Materials	1st Mid Term	2nd Mid Term	3rd Mid Term
	Term 1	Term 2	Term 3	Public Model Q&A	NMMS	Periodical Test

7th Standard	Syllabus	Books	Study Materials	1st Mid Term	2nd Mid Term	3rd Mid Term
	Term 1	Term 2	Term 3	Periodical Test	SLAS	

6th Standard	Syllabus	Books	Study Materials	1st Mid Term	2nd Mid Term	3rd Mid Term
	Term 1	Term 2	Term 3	Periodical Test	SLAS	

1st to 5th Standard	Syllabus	Books	Study Materials	Periodical Test	SLAS	
	Term 1	Term 2	Term 3	Public Model Q&A		

Exams	TET	TNPSC	PGTRB	Polytechnic	Police	Computer Instructor
	DEO	BEO	LAB Asst	NMMS	RTE	NTSE

Portal	Matrimony	Mutual Transfer	Job Portal

Volunteers	Centum Team	Creative Team	Key Answer Team

Downloads	LESSON PLAN	Department Exam	Income Tax	Forms & Proposals	Fonts	Downloads
	Proceedings	GO's	Regulation Orders	Pay Orders	Panel	

Padasalai – Official Android App – Download Here

Kindly Send Your Study Materials, Q&A to our Email ID – Padasalai.net@gmail.com

12TH PHYSICS ONE MARKS FOR UNIT-1

BY: S.GOWRISANKAR

12th PHYSICS

----------ONE MARKS----------

UNIT I ELECTROSTATICS

1.Two identical point charges of magnitude –q are fixed as shown in the figure below. A third charge +q is placed midway between the two charges at the point P. Suppose this charge +q is displaced a small distance from the point P in the directions indicated by the arrows, in which direction(s) will +q be stable with respect to the displacement? (a) (a)A_1 and A_2 (b) B_1 and B_2 (c) both directions (d) No stable

2. Which charge configuration produces a uniform electric field?

(a) point Charge

(b) infinite uniform line charge

(c) uniformly charged infinite plane

(d) uniformly charged spherical shell

3.What is the ratio of the charges  for the following electric field line pattern?

(a) 1\5 (b) 25\11 (c) 5 (d) 11\25

An electric dipole is placed at an alignment angle of 30_o with an electric field of 2×10^5 N C^{-1}. It experiences a torque equal to 8 N m. The charge on the dipole if the dipole length is 1 cm is

(a) 4 mC (b) 8 Mc (c) 5 mC (d) 7 mC

5. Four Gaussian surfaces are given below with charges inside each Gaussian surface. Rank the electric flux through each Gaussian surface in increasing order.

(a) D < C < B < A

12TH PHYSICS ONE MARKS FOR UNIT-1

BY: S.GOWRISANKAR

(b) A < B = C < D

(c) C < A = B < D

(d) D > C > B > A

6. The total electric flux for the following closed surface which is kept inside water.

(a)$80q/\varepsilon_\circ$ *(b)*$q40/\varepsilon_\circ$ (c) $q80/\varepsilon_\circ$ (d)$q160/\varepsilon_\circ$

6.Two identical conducting balls having positive charges $|q_1|$ and $|q_2|$ are separated by a center to center distance r. If they are made to touch each other and then separated to the same distance, the force between them will be

(a) less than before (b) same as before (c) more than before (d) zero

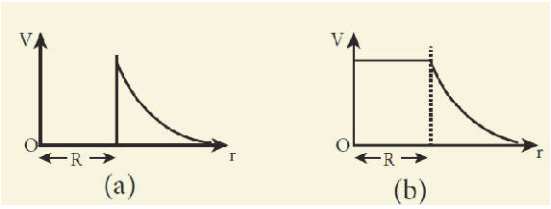
8. Rank the electrostatic potential energies for the given system of charges in increasing order.

(a) 1 = 4 < 2 < 3 (b) 2 = 4 < 3 < 1 (c) 2 = 3 < 1 < 4 (d) 3 < 1 < 2 < 4

9. An electric field $\bar{E}=10x\hat{i}$ exists in a certain region of space. Then the potential difference $V = V_o - V_A$, where V_o is the potential at the origin and V_A is the potential at x = 2 m is:

(a) 10 J (b) – 20 J (c) +20 J (d) -10J

10. A thin conducting spherical shell of radius R has a charge Q which is uniformly distributed on its surface. The correct plot for electrostatic potential due to this spherical shell is



12TH PHYSICS ONE MARKS FOR UNIT-1

BY: S.GOWRISANKAR

11. Two points A and B are maintained at a potential of 7 V and -4 V respectively. The work done in moving 50 electrons from A to B is

(a) 8.80×10^{-17} J (b) -8.80×10^{-17} J (c) 4.40×10^{-17} J (d) 5.80×10^{-17} J

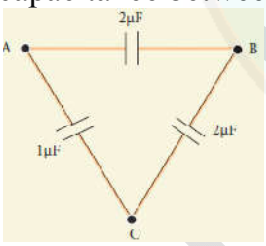
12. If voltage applied on a capacitor is increased from V to 2V, choose the correct conclusion.

(a) Q remains the same, C is doubled
(b) Q is doubled, C doubled
(c) C remains same, Q doubled
(d) Both Q and C remain same

13.A parallel plate capacitor stores a charge Q at a voltage V. Suppose the area of the parallel plate capacitor and the distance between the plates are each doubled then which is the quantity that will change?

(a) Capacitance (b) Charge (c) Voltage (d) Energy density

14. Three capacitors are connected in triangle as shown in the figure. The equivalent capacitance between the points A and C is



(a) 1μF (b) 2 μF (c) 3 μF (d) 1/4μF

15.Two metallic spheres of radii 1 cm and 3 cm are given charges of -1 x 10^{-2} C and 5 x 10^{-2} C respectively. If these are connected by a conducting wire, the final charge on the bigger sphere is (AIIPMT -2012)

(a) 3×10^{-2} C (b) 4×10^{-2} C (c) 1×10^{-2} C (d) 2×10^{-2} C

12TH PHYSICS ONE MARKS FOR UNIT-1

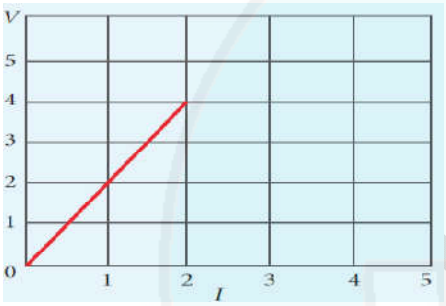
BY: S.GOWRISANKAR

12th PHYSICS

----------ONE MARKS----------

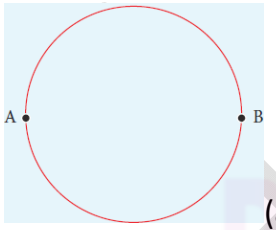
UNIT II-CURRENT ELECTRICITY

1. The following graph shows current versus voltage values of some unknown conductor. What is the resistance of this conductor?



(a) 2 ohm (b) 4 ohm (c) 8 ohm (d)1 ohm

2. A wire of resistance 2 ohms per meter is bent to form a circle of radius 1m. Th e equivalent resistance between its two diametrically opposite points, A and B as shown in the figure is



(a) $\pi\ \Omega$ (b) $\pi/2\ \Omega$ (c) $2\pi\Omega$ (d) $\pi/4\ \Omega$

3. A toaster operating at 240 V has a resistance of 120 Ω. The power is

a) 400 W b) 2 W c) 480 W d) 240 W

4. A carbon resistor of (47 ± 4.7) k Ω to be marked with rings of different colours for its identification. The colour code sequence will be

a) Yellow – Green – Violet – Gold

12TH PHYSICS ONE MARKS FOR UNIT-1

BY: S.GOWRISANKAR

b) Yellow – Violet – Orange – Silver

c) Violet – Yellow – Orange – Silver

d) Green – Orange – Violet - Gold

5. What is the value of resistance of the following resistor?

(a)100 k Ω (b)10 k Ω (c) 1k Ω (d)1000 k Ω

6. Two wires of A and B with circular cross section made up of the same material with equal lengths. Suppose $R_A = 3 R_B$, then what is the ratio of radius of wire A to that of B?
(a) 3 (b)$\sqrt{3}$ (c) $1/\sqrt{3}$ (d) 1/3

7. A wire connected to a power supply of 230 V has power dissipation P_1. Suppose the wire is cut into two equal pieces and connected parallel to the same power supply. In this case power dissipation is P_2. The ratio P_1/P_2 is

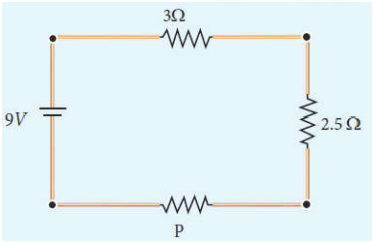
(a)1 (b) 2 (c) 3 (d) 4

8.In India electricity is supplied for domestic use at 220 V. It is supplied at 110 V in USA .If the resistance of a 60W bulb for use in India is R, the resistance of a 60W bulb for use in USA will be

(a) R (b) 2R (c) *R/4* (d) *R/2*

9. In a large building, there are 15 bulbs of 40W, 5 bulbs of 100W, 5 fans of 80W and heater of 1kW are connected. The voltage of electric mains is 220V. The minimum capacity of the main fuse of the building will be
(a) 14 A (b) 8 A (c) 10 A (d) 12 A

10. There is a current of 1.0 A in the circuit shown below. What is the resistance of P ?

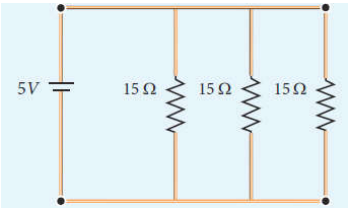


12TH PHYSICS ONE MARKS FOR UNIT-1

BY: S.GOWRISANKAR

a) 1.5 Ω b) 2.5 Ω c) 3.5 Ω d) 4.5 Ω

11. What is the current out of the battery?



a) 1A b) 2A c) 3A d) 4A

12. The temperature coefficient of resistance of a wire is 0.00125 per °C. At 300 K, its resistance is 1 Ω. The resistance of the wire will be 2 Ω at

a) 1154 K b) 1100 K c) 1400 K d) 1127 K

13. The internal resistance of a 2.1 V cell which gives a current of 0.2 A through a resistance of 10 Ω is

a) 0.2 Ω b) 0.5 Ω c) 0.8 Ω d) 1.0 Ω

14. A piece of copper and another of germanium are cooled from room temperature to 80 K. The resistance of

a) each of them increases
b) each of them decreases
c) copper increases and germanium decreases
d) copper decreases and germanium increases

15. In Joule's heating law, when I and t are constant, if the H is taken along the y axis and I^2 along the x axis, the graph is

a) straight line b) parabola c) circle d) ellipse

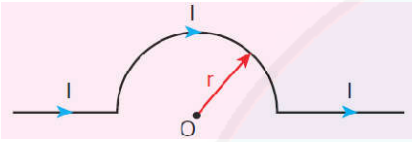
12TH PHYSICS ONE MARKS FOR UNIT-1

BY: S.GOWRISANKAR

----------ONE MARKS ----------

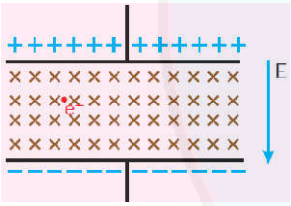
UNIT III-MAGNETISM AND MAGNETIC EFFECTS OF ELECTRIC CURRENT

1.Th e magnetic fi eld at the center O of the following current loop is



(a) $\mu_o I/4r\otimes$ (b) $\mu_o I/4r\odot$ (c)) $\mu_o I/2r\otimes$ (d) $\mu_o I/2r\odot$

2. An electron moves straight inside a charged parallel plate capacitor of uniform charge density σ. The time taken by the electron to cross the parallel plate capacitor when the plates of the capacitor are kept under constant magnetic field of induction Б is



(a)ε_o elB/σ (b) ε_o $lB/\sigma\iota$ (c) ε_o $lB/e\sigma$ (d) ε_o lB/σ

3. The force experienced by a particle having mass m and charge q accelerated through a potential difference V when it is kept under perpendicular magnetic field $\_B$ is

$$a)\sqrt{\frac{2q^3\,BV}{m}} \quad b)\sqrt{\frac{q^3\,B^2V}{2m}} \quad c)\sqrt{\frac{2q^3\,B^2V}{m}} \quad d)\sqrt{\frac{2q^3\,BV}{m^3}}$$

4. A circular coil of radius 5 cm and 50 turns carries a current of 3 ampere. Th e magnetic dipole moment of the coil is

(a) 1.0 amp – m^2 (b) 1.2 amp – m^2 (c) 0.5 amp – m^2 (d) 0.8 amp – m^2

5. A thin insulated wire forms a plane spiral of N = 100 tight turns carrying a current I = 8 m A (milli ampere). The radii of inside and outside turns are a = 50 mm and b = 100 mm respectively. Th e magnetic induction at the center of the spiral is

(a) 5 μT (b) 7 μT (c) 8 μT (d) 10 μT

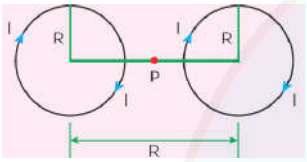
12TH PHYSICS ONE MARKS FOR UNIT-1

BY: S.GOWRISANKAR

6. Th ree wires of equal lengths are bent in the form of loops. One of the loops is circle, another is a semi-circle and the third one is a square. They are placed in a uniform magnetic field and same electric current is passed through them. Which of the following loop configuration will experience greater torque ?

(a) circle (b) semi-circle (c) square (d) all of them

7. Two identical coils, each with N turns and radius R are placed coaxially at a distance R as shown in the figure. If I is the current passing through the loops in the same direction, then the magnetic field at a point P which is at exactly at R/2 distance between two coils is

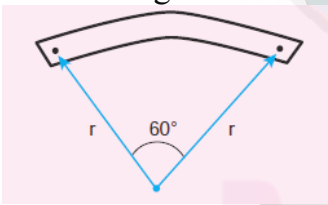


a)$\frac{8N\mu\circ I}{\sqrt{5}R}$ b)$\frac{8N\mu^{\circ}I}{5^{3}/_{2}R}$ C)$\frac{8N\mu\circ I}{5R}$D) a)$\frac{4N\mu\circ I}{\sqrt{5}R}$

8. A wire of length *l* carries a current I along the Y direction and magnetic field is given by $\vec{B}=\beta/\sqrt{3}(\hat{\imath}+\hat{\jmath}+\hat{k})$The magnitude of Lorentz force acting on the wire is

a)$\sqrt{\frac{2}{\sqrt{3}}}\beta Il$ b) $\sqrt{\frac{1}{\sqrt{3}}}\beta Il$ c) $\sqrt{2}\,\beta Il$ d)$\sqrt{\frac{1}{2}}\beta Il$

9. A bar magnet of length *l* and magnetic moment M is bent in the form of an arc as shown in figure. The new magnetic dipole moment will be



a)M b)$\frac{3}{\pi}$M c)$\frac{2}{\pi}M$ d)$\frac{1}{2}M$

10. A non-conducting charged ring of charge q, mass m and radius r is rotated with constant angular speed ω. Find the ratio of its magnetic moment with angular momentum is

a)$\frac{q}{m}$ b) $\frac{2q}{m}$ c) $\frac{q}{2m}$ d) $\frac{q}{4m}$

12TH PHYSICS ONE MARKS FOR UNIT-1

BY: S.GOWRISANKAR

11. The BH curve for a ferromagnetic material is shown in the figure. The material is placed inside a long solenoid which contains 1000 turns/ cm. The current that should be passed in the solenonid to demagnetize the ferromagnet completely is

(a) 1.00 m A (milli ampere) (b) 1.25 mA (c) 1.50 mA (d) 1.75 mA

12. Two short bar magnets have magnetic moments 1.20 Am^2 and 1.00 Am^2 respectively. They are kept on a horizontal table parallel to each other with their north poles pointing towards the south. They have a common magnetic equator and are separated by a distance of 20.0 cm. The value of the resultant horizontal magnetic induction at the mid-point O of the line joining their centers is (Horizontal components of Earth's magnetic induction is 3.6×10^{-5} Wb m^{-2})

(a) 3.60×10^{-5} Wb m^{-2}
(b) 3.5×10^{-5} Wb m^{-2}
(c) 2.56×10^{-4} Wb m^{-2}
(d) 2.2×10^{-4} Wb m^{-2}

13. The vertical component of Earth's magnetic field at a place is equal to the horizontal component. What is the value of angle of dip at this place?

(a) 30° (b) 45° (c) 60° (d) 90°

14. A flat dielectric disc of radius R carries an excess charge on its surface. The surface charge density is σ. The disc rotates about an axis perpendicular to its plane passing through the center with angular velocity ω. Find the magnitude of the torque on the disc if it is placed in a uniform magnetic field whose strength is B which is directed perpendicular to the axis of rotation

a) $\frac{1}{4}\sigma\omega\pi BR$

b) $\frac{1}{4}\sigma\omega\pi BR^2$

c) $\frac{1}{4}\sigma\omega\pi BR^3$

d) $\frac{1}{4}\sigma\omega\pi BR^4$

12TH PHYSICS ONE MARKS FOR UNIT-1

BY: S.GOWRISANKAR

15. A simple pendulum with charged bob is oscillating with time period T and let θ be the angular displacement. If the uniform magnetic field is switched ON in a direction perpendicular to the plane of oscillation then

(a)time period will decrease but θ will remain constant

(b) time period remain constant but θ will decrease

(c) both T and θ will remain the same

(d) both T and θ will decrease

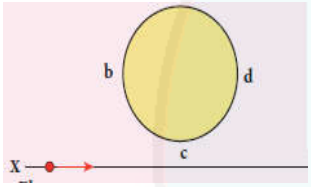
12TH PHYSICS ONE MARKS FOR UNIT-1

BY: S.GOWRISANKAR

----------ONE MARKS ----------

UNIT IV- ELECTROMAGNETIC INDUCTION AND ALTERNATING CURRENT

1. An electron moves on a straight line path XY as shown in the fi gure. Th e coil *abcd* is adjacent to the path of the electron. What will be the direction of current, if any,induced in the coil?



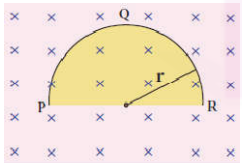
(a) Th e current will reverse its direction as the electron goes past the coil

(b) No current will be induced

(c) abcd

(d) adcb

2. A thin semi-circular conducting ring (PQR) of radius r is falling with its plane vertical in a horizontal magnetic fi eld B, as shown in the fi gure. Th e potential diff erence developed across the ring when its speed v_3 is



(a) Zero

(b) $Bv\pi r^{2/}$ 2 and P is at higher potential

12TH PHYSICS ONE MARKS FOR UNIT-1

BY: S.GOWRISANKAR

(c) πrBv and R is at higher potential

(d) $2rBv$ and R is at higher potential

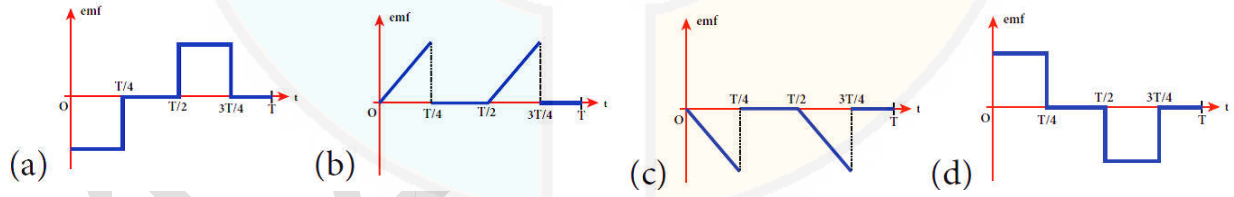
3. Th e fl ux linked with a coil at any instant t is given by $\Phi_B = 10t^2 - 50t + 250$. Th e induced emf at t = 3s is

(a) $-190\ V$ (b) $-10\ V$ (c) $10\ V$ (d) $190\ V$

4. When the current changes from +2A to −2A in 0.05 s, an emf of 8 V is induced in a coil. Th e co-effi cient of self-induction of the coil is

(a) 0.2 H (b) 0.4 H (c) 0.8 H (d) 0.1 H

5. Th e current *i* fl owing in a coil varies with time as shown in the fi gure. Th e variation of induced emf with time would be



6. A circular coil with a cross-sectional area of 4 cm^2 has 10 turns. It is placed at the centre of a long solenoid that has 15 turns/cm and a cross-sectional area of 10 cm^2. The axis of the coil coincides with the axis of the solenoid. What is their mutual inductance?

(a) 7.54 μH (b) 8.54 μH (c) 9.54 μH (d) 10.54 μH

12TH PHYSICS ONE MARKS FOR UNIT-1

BY: S.GOWRISANKAR

7. In a transformer, the number of turns in the primary and the secondary are 410 and 1230 respectively. If the current in primary is 6A, then that in the secondary coil is

(a) 2 A (b) 18 A (c) 12 A (d) 1 A

8. A step-down transformer reduces the supply voltage from 220 V to 11 V and increase the current from 6 A to 100 A. Then its efficiency is

(a) 1.2 (b) 0.8 (c) 0.12 (d) 0.9

9. In an electrical circuit, *R, L, C* and AC voltage source are all connected in series. When *L* is removed from the circuit, the phase difference between the voltage and current in the circuit is $\pi/3$. Instead, if C is removed from the circuit, the phase difference is again $\pi/3$. The power factor of the circuit is

a)$\frac{1}{2}$ $b)\ \frac{1}{\sqrt{2}}$ $c)\ 1$ $d)\ \frac{\sqrt{3}}{2}$

10. In a series RL circuit, the resistance and inductive reactance are the same. Then the phase difference between the voltage and current in the circuit is

(a) π/4 (b) π/2 (c)π/6 (d) zero

11. In a series resonant *RLC* circuit, the voltage across 100 Ω resistor is 40 V. The resonant frequency ω is 250 rad/s. If the value of C is 4 μF, then the voltage across L is

(a) 600 V (b) 4000 V (c) 400V (d) 1 V

12. An inductor 20 *mH*, a capacitor 50 *μF* and a resistor 40 Ω are connected in series across a source of emf v = 10 sin 340 t. The power loss in AC circuit is

(a) 0.76 W (b) 0.89 W (c) 0.46 W (d) 0.67 W

12TH PHYSICS ONE MARKS FOR UNIT-1

BY: S.GOWRISANKAR

13. The instantaneous values of alternating current and voltage in a circuit are $i=\frac{1}{\sqrt{2}}\sin(100\pi t)\ A\ and\ v =$ $\frac{1}{\sqrt{2}}\sin\left(100\pi t+\frac{\pi}{3}\right) v. the\ average\ powre\ in\ watts\ consumed\ in\ th\ ecircuit\ is$

a) $\frac{1}{4}$ b) $\frac{\sqrt{3}}{4}$ c) $\frac{1}{2}$ d) $\frac{1}{8}$

14. In an oscillating LC circuit, the maximum charge on the capacitor is Q. The charge on the capacitor when the energy is stored equally between the electric and magnetic fields is

(a) $Q/2$ (b) $Q/\sqrt{3}$ (c) $Q/\sqrt{2}$ (d) Q

15. 20/ π^2 H inductor is connected to a capacitor of capacitance C. The value of C in order to impart maximum power at 50 Hz is

(a) 50 μF (b) 0.5 μF (c) 500 μF (d) 5 μF

12TH PHYSICS ONE MARKS FOR UNIT-1

BY: S.GOWRISANKAR

----------ONE MARKS ----------

UNIT V- ELECTROMAGNETIC WAVES

1. Th e dimension of $\frac{1}{\mu_0 \varepsilon_0}$ is

(a) $[L\,T^{-1}]$ (b) $[L^2\,T^{-2}]$ (c) $[L^{-1}\,T]$ (d) $[L^{-2}\,T^2]$

2. If the amplitude of the magnetic fi eld is 3×10^{-6} T, then amplitude of the electric fi eld for a electromagnetic waves is

(a) 100 V m^{-1} (b) 300 V m^{-1} (c) 600 V m^{-1} (d) 900 V m^{-1}

3. Which of the following electromagnetic radiation is used for viewing objects through fog

(a) microwave (b) gamma rays (c) X- rays (d) infrared

4. Which of the following are false for electromagnetic waves

(a) transverse

(b) mechanical waves

(c) longitudinal

(d) produced by accelerating charges

5. Consider an oscillator which has a charged particle and oscillates about its mean position with a frequency of 300 MHz. Th e wavelength of electromagnetic waves produced by this oscillator is

(a) 1 m (b) 10 m (c) 100 m (d) 1000 m

6. Th e electric and the magnetic fi eld, associated with an electromagnetic wave, propagating along X axis can be represented by

(a) $\vec{E} = E_0 \hat{j}$ and $\vec{B} = B_0 \hat{k}$ (b) $\vec{E} = E_0 \hat{k}$ and $\vec{B} = B_0 \hat{j}$

12TH PHYSICS ONE MARKS FOR UNIT-1

BY: S.GOWRISANKAR

(c) $\vec{E} = E_o \hat{i}$ and $\vec{B} = B_o \hat{j}$ (d) $\vec{E} = E_o \hat{j}$ and $\vec{B} = B_o \hat{i}$

7. In an electromagnetic wave in free space the rms value of the electric field is 3 V m^{-1}. Th e peak value of the magnetic field is

(a) 1.414×10^{-8} T

(b) 1.0×10^{-8} T

(c) 2.828×10^{-8} T

(d) 2.0×10^{-8} T

8. During the propagation of electromagnetic waves in a medium:

(a) electric energy density is double of the magnetic energy density

(b) electric energy density is half of the magnetic energy density

(c) electric energy density is equal to the magnetic energy density

(d) both electric and magnetic energy densities are zero

9. If the magnetic monopole exists, then which of the Maxwell's equation to be modified?.

(a) $\oint \vec{E} \cdot d\vec{A} = \frac{Q_{enclosed}}{\in_o}$

(b) $\oint \vec{E} \cdot d\vec{A} = 0$

(c) $\oint \vec{E} \cdot d\vec{A} = \mu_o I_{enclosed} + \mu_o \in_o \frac{d}{dt} \int \vec{E} \cdot d\vec{A}$

(d) $\oint \vec{E} \cdot d\vec{l} = -\frac{d}{dt} \Phi_B$

10. A radiation of energy E falls normally on a perfectly reflecting surface. The momentum transferred to the surface is

(a) E/c (b) 2 E/c (c) Ec (d) E/c^2

12TH PHYSICS ONE MARKS FOR UNIT-1

BY: S.GOWRISANKAR

11. Which of the following is an electromagnetic wave?

(a) α - rays (b) β - rays (c) γ - rays (d) all of them

12. Which one of them is used to produce a propagating electromagnetic wave?.

(a) an accelerating charge (b) a charge moving at constant velocity (c) a stationary charge (d) an uncharged particle

13. Let $E = E_o \sin[10^6 x - \omega t]$ be the electric field of plane electromagnetic wave, the value of ω is

(a) 0.3×10^{-14} rad s^{-1}

(b) 3×10^{-14} rad s^{-1}

(c) 0.3×10^{-14} rad s^{-1}

(d) 3×10^{-14} rad s^{-1}

14. Which of the following is NOT true for electromagnetic waves?.

(a) it transport energy

(b) it transport momentum

(c) it transport angular momentum

(d) in vacuum, it travels with different speeds which depend on their frequency

15. The electric and magnetic fields of an electromagnetic wave are

(a) in phase and perpendicular to each other

(b) out of phase and not perpendicular to each other

(c) in phase and not perpendicular to each other

(d) out of phase and perpendicular to each other