

TELANGANA UNIVERSITY
S.S.R. DEGREE COLLEGE, NIZAMABAD (C.C:5029)
III SEMESTER INTERNAL ASSESSMENT II EXAMINATIONS
PHYSICS (ELECTROMAGNETIC THEORY) QUESTION BANK

1. The unit of magnetic theory is [c]
 a. Weber-m² b. Weber/m² c. Weber d. Henry
2. The direction of force of a current carrying conductor in a magnetic field is given by [c]
 a. Cork screw rule b. Lenz's law c. Left hand rule d. Fleming's right hand rule
3. The range of voltmeter can be increased by [b]
 a. A resistance by series b. A high value resistance in series with movement of the meter
 c. Low resistance in parallel d. None of these
4. Damping of B.G is kept small [c]
 a. It may oscillate b. remains stable c. amplitude of 1st swing smalls d. Large
5. Critical damping is at? [a]
 a. $k^2 = w^2$ b. $k^2 < w^2$ c. $k^2 > w^2$ d. $k^2 \neq w^2$
6. Time constant of RL circuit is [b]
 a. LR b. L/R c. R/L d. L + R
7. Time constant of RC circuit is [c]
 a. R/C b. C/R c. RC d. R + C
8. RMS value of a.c signal is [c]
 a. $\frac{I_0}{2}$ b. $2I_0$ c. $\frac{I_0}{\sqrt{2}}$ d. $\sqrt{2}I_0$
9. The maximum power is transferred from source to load, when [b]
 a. $Z_S = Z_L$ b. $Z_S = Z_L^*$ c. $Z_S/Z_L = 0$ d. $Z_S \neq Z_L$
10. Reciprocity theorem equivalent when [a]
 a. $I_2 = I_1^1$ b. $I_1 = I_2^1$ c. $I_1 \neq I_2^1$ d. $I_1 = I_2$
11. The magnetic flux linked with circuit at any instant is? [a]
 a. $e = -\frac{d\phi_B}{dt}$ b. $e = \frac{d\phi_B}{dt}$ c. $e \neq -\frac{d\phi_B}{dt}$ d. $e \neq \frac{d\phi_B}{dt}$
12. The maximum power transfer theorem satisfies, when [c]
 a. $R_L = R_S$ b. $X_L = X_S$ c. $R_L = R_S$ & $X_L = -X_S$ d. $R_L = R_S$ & $X_S = -X_S$
13. The thevenin's theorem voltage is equal to [a]
 a. open circuit b. short circuit c. both a & b d. None
14. The Norton's current is equal to [b]
 a. open circuit b. short circuit c. both a & b d. None
15. The identical current is related with [c]
 a. Thevenin's theorem b. Norton's theorem c. Reciprocity theorem d. super position theorem
16. The voltage source is removed, replaced by internal resistance of [a]
 a. 0 b. infinite c. 100 d. 1000
17. The current source is removed and replaced by internal resistance of [b]
 a. 0 b. infinite c. 100 d. 1000
18. The algebraic sum of current at an node is equal to [a]
 a. 0 b. infinite c. 100 d. 1000
19. The algebraic sum of voltages with in loop is equal to [a]
 a. 0 b. infinite c. 100 d. 1000
20. The time constant of RC circuit is [c]
 a. R/C b. C/R c. RC d. R + C

II. Fill in the blanks.

1. Gauss's law of electro statics is $\oint_S E \cdot ds = q / \epsilon_0$

2. Gauss's law of magnetism is $\oint_S B \cdot ds = 0$

3. The faraday's law of electromagnetic induction is $\oint E \cdot dl = - \frac{d\phi_B}{dt}$

4. The Amper's law for magnetic field is $\oint B \cdot dl = \mu_0 i$

5. The displacement current is $\text{curl} B = \mu_0 j + \text{something}$

6. Maxwell in 1862 year formulated the basic laws of electricity and magnetism.

7. Equation electromagnetic wave is $\nabla^2 y = \frac{1}{v^2} \cdot \frac{\partial^2 y}{\partial t^2}$

8. In dielectric, the velocity (v) of EM wave is given by $v = \frac{1}{\sqrt{\mu \epsilon}}$

9. In vaccum, the velocity of enclave is $C = \frac{1}{\sqrt{\mu_0 \epsilon_0}}$

10. The value of Electric field (E) at a point in electric field of a point charge can be coulombs law

11. The time constant of RL circuit is L/R

12. The RMS current of AC circuit is $I_0 / \sqrt{2}$

13. The average current of AC circuit is I_0 / π

14. The form factor of AC circuit is 1.11

15. The operator j indicate signifies vector multiple by 90°

16. The unit of impedance is Ohm's

17. The unit of admittance is mho's

1. State Biot savart law?

2. Define magnetic induction?

3. State Reciprocity theorem?

4. State maximum power transfer theorem?

5. Define Electric flux?