PSG COLLEGE OF ARTS & SCIENCE
(AUTONOMOUS)
BSc DEGREE EXAMINATION MAY 2022
(Second Semester)

Branch – ELECTRONICS

ELECTRO MAGNETIC THEORY

Time: Three Hours   Maximum: 50 Marks

SECTION-A (5 Marks)
Answer ALL questions
ALL questions carry EQUAL marks   (5 x 1 = 5)

1. Choose the electric field lines passing through a certain area is known as ___
   (i) Electric Flux   (ii) Electric field

   (iii) Electrostatics   (iv) Electric field lines

2. What is the dimension of the dipole moment?
   (i) LTI   (ii) LTI^2 (iii) MLTI   (iv) LTI^{-1}

3. Which of the following is the most conductive element?
   (i) Copper   (ii) Iron   (iii) Silicon   (iv) Silver

4. Find the value of Stoke's theorem for yi+zj+xk
   (i) i+j   (ii) j+k   (iii) i+j+K   (iv) –i-j-k

5. Which of the following inductor will have the least eddy current losses?
   (i)Air core   (ii)Laminated iron core
   (iii) Iron core   (iv) Powdered iron core

SECTION - B (15 Marks)
Answer ALL Questions
ALL Questions Carry EQUAL Marks   (5 x 3 = 15)

6 (a) State and Prove the Couloumb's law.
                    (OR)
   (b) Explain the Flux Density.

7 (a) Describe the Uniformly Charged disc.
                    (OR)

   (b) Summarize the Electric dipole with diagram.

8. (a) Narrate the Polarization with neat sketch.
                    (OR)
   (b) Describe about the Dielectric Strength.

9 (a) State and Prove the Stokes theorem.
                    (OR)
   (b) Describe the Steady Magnetic field.

10 (a) State and Prove the Faradays law of electromagnetic induction.
                    (OR)
   (b) Summarize the solenoids.

Cont...

SECTION -C (30 Marks)
Answer **ALL** questions
ALL questions carry **EQUAL** Marks   (5 x 6 = 30)

11.(a) Elucidate the Electric Field intensity with diagram.
(OR)
(b) Discuss about the Guass Law and applications.

12. (a) Explain the Electric Scalar Potential.
(OR)
(b) Enumerate the functions of Potential Gradient.

13.(a) Elucidate the Capacitance of a Parallel plate Capacitor.
(OR)
(b) Discuss briefly about the Capacitor between Parallel Wires.

14.(a) Highlight and explain the Poisson Equations with diagram.
(OR)
(b) Elucidate and state the Biot Savarts Law.

15.(a) Describe briefly about the Mutual Inductance.
(OR)
(b) Enumerate the Pull of an Electromagnet with neat diagram.

Z-Z-Z   END