|--|

Total No. of Pages : 02

Total No. of Questions : 09

B.Sc.(Non Medical) (Sem.–2) ELECTRICITY AND MAGNETISM Subject Code : BSNM-204-18 M.Code : 76302 Date of Examination : 20-12-22

Time: 3 Hrs.

Max. Marks : 50

INSTRUCTIONS TO CANDIDATES :

- 1. SECTION-A is COMPULSORY consisting of TEN questions carrying ONE mark each.
- 2. SECTION-B contains FIVE questions carrying FIVE marks each and students have to attempt any FOUR questions.
- 3. SECTION-C contains THREE questions carrying TEN marks each and students have to attempt any TWO questions.

SECTION-A

- 1) Write briefly :
 - a. Define electrostatic field.
 - b. What do you mean by electric lines of forces?
 - c. Define displacement vector.
 - d. What is divergence of magnetic field?
 - e. Define Faraday's law of electromagnetic induction.
 - f. What is self-inductance and write its unit?
 - g. Define EM waves.
 - h. Write Maxwell's equation in integral form.
 - i. Write equation of continuity.
 - j. Give example of paramagnetic materials.

SECTION-B

- 2) Deduce electric field due to point charge and solid sphere.
- 3) Distinguish between ferromagnetic, paramagnetic and diamagnetic materials.
- 4) Show that the energy required to build up a current I in a circuit of self-inductance L is $(1/2) LI^2$.
- 5) What is the physical meaning of the term potential? Find the potential of a uniformly charged solid sphere.
- 6) State and derive Poynting's Theorem.

SECTION-C

- 7) State and prove gauss law in electrostatics. Obtain the generalized form of gauss's law in a dielectric medium both in integral and differential form.
- 8) State Biot-savart's law. Using this law find magnetic induction at a point on the axis of a circular coil carrying current.
- 9) Deduce Maxwell's equations of electromagnetism. Discuss electromagnetic wave propagation through vacuum.

NOTE : Disclosure of Identity by writing Mobile No. or Making of passing request on any page of Answer Sheet will lead to UMC against the Student.