Total No. of Questions : 4]

SEAT No. : ____

P8572

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Oct- 22 /TE/Insem-550
T.E.(E&TC Engineering)
ELECTROMAGNETIC FIELD THEORY
(2019 Pattern) (Semester-I) (304182)

Time : 1 Hour] ***[Max. Marks : 30***

Instructions to the candidates:

1) ***Answer two questions Q.1 or Q.2, Q.3 or Q.4.***
2) ***Neat diagrams must be drawn wherever necessary.***
3) ***Assume suitable data if necessary.***

Q1) a) State and Explain Coulmob's Law in vector notation **[5]**

b) Define Electric Field intensity and derive its expression **[5]**

c) State and Prove Gauss's Law **[5]**

OR

Q2) a) Determine Electric flux density at (4,0,3) if there is a point charge -5π mc at (4,0,0) and line charge 3π mC/m along Y-axis **[7]**

b) A Point charge of 5 nC is located at origin if V = 2 V at (0,6,-8) Find: **[8]**

i) Potential at A (3,2,6)

ii) Potential at B (1,5,7)

iii) Potential difference V_{AB}

Q3) a) State & prove Biot's Savart Law of magneto statics. **[8]**

b) Define conduction current, conduction current density and derive current continuity equation **[7]**

OR

Q4) a) Derive point form of Maxwell equation for Magneto statics ($\nabla XH = J$). **[8]**

b) Explain the physical significance of curl. **[7]**