

M.Sc. (Electronics) (NEP Pattern) - Semester-III
PSCELT301 - Paper-I : Electromagnetics Fields and Antennas

P. Pages : 2

Time : Three Hours



GUG/W/24/15975

Max. Marks : 80

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- Notes :
1. All questions are compulsory and carry equal marks.
 2. Draw well labelled diagrams wherever necessary.
 3. Use of calculator/log table is allowed.

Either:

1. a) State and explain Maxwell's Equations. 8
- b) Explain EM Waves in homogeneous Medium. 8

OR

- c) State and explain Poynting's theorem. 8
- d) Explain the wave equation for Conductors. 8

Either:

2. a) Explain radiation resistance and write basic radiation equation. 8
- b) What is directivity and gain n antennas? Explain. 8

OR

- c) Write short note on Apertures and effective heights. 8
- d) Discuss the Fii's transmission formula. 8

Either:

3. a) Draw and explain the construction of folded dipole antenna. 8
- b) Draw and explain the construction of horn antenna. 8

OR

- c) What is parabolic reflector? 8
- d) Differentiate between broad-side and end-fire arrays. 8

Either:

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| 4. | a) | Discuss the antennas for terrestrial mobile communications. | 8 |
| | b) | What is reciprocity theorem? Explain. | 8 |

OR

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|-----------|----|--|----------|
| | c) | Explain antennas on cellular handset. | 8 |
| | d) | Write a note on Compact Antenna Test Range (CATR). | 8 |
| 5. | | Solve all the followings: | |
| | a) | Explain wave equation for a dielectrics. | 4 |
| | b) | Write a short note on elliptical polarization. | 4 |
| | c) | What is rhombic antenna? Draw its construction. | 4 |
| | d) | explain the steps for measurement of antenna ranges. | 4 |
