TE - EXTC / old / sem - VI / AWP / 26/11/2015

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B-16

Time. 3.00 to 6.00pm

QP Code : **1927**

(3 Hours) [**Total Marks : 100**

N.B. : (1) **Question No.1 is compulsory**
(2) Answer **any four** questions from the remaining **six** questions.
(3) Assume any suitable data wherever required.
(4) Figures to the **right** indicate **full** marks.

1. Answer the following : 12
   (a) Maxwell's equation's for harmonic variations
   (b) Ground interference effects
   (c) Explain different types of antenna losses
   (d) FRIIS transmission formula

2. (a) Derive the expression for radiation resistance of an infinitesimal dipole, explain its significance. 10
   (b) Explain the significance of the term "Effective Area of an Antenna". Derive the relationship between effective area and directivity of any antenna. 10

3. (a) Derive the array factor of an N- element uniform linear array and hence deduce the condition for which the array will radiate in the broadside and end fire direction 10
   (b) What is folded dipole antenna? Explain its operation, equation, properties and applications 10

4. (a) Explain with suitable diagram the working of Log Periodic Antenna. Write its practical applications. 10
   (b) Explain the different types of horn antennas. Find its directivity and beamwidth. 10

5. (a) Draw and explain Yagi antenna. Sketch its radiation pattern. Write the applications of Yagi Antenna. 10
   (b) Explain the different components of the ground waves. 'What are frequency characteristics of ground waves? 10

6. (a) Explain the principal modes of operation of helical antennas and draw its radiation pattern. 10
   (b) Explain the mechanism of isotropic propagation. Define critical frequency, MUF and OWF. 10

7. Write notes on 20
   (a) Retarded potential and its applications
   (b) Sleeve dipole
   (c) The equivalent noise temperature of an antenna
   (d) Dielectric waveguide.

QP-Con. 8456-15.

Course: T.E. (SEM.-VI) (REV-2007) (E&TC ENGG.) (Prog- T3116)

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Correction:

Read: Q. No. 1. Carries 20 Marks

Query Update time: 26/11/2015 03:35 PM