G 1427

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Reg. No.................................

Name.................................

B.TECH. DEGREE EXAMINATION, MAY 2016

Sixth Semester

Branch : Electronics and Communication Engineering

EC 010 603—RADIATION AND PROPAGATION (EC)

(New Scheme—2010 Admission onwards)

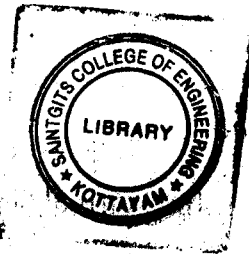[Regular/Improvement/Supplementary]

Time : Three Hours

Maximum : 100 Marks

Part A

Answer all questions.
Each question carries 3 marks.

1. Define Radiation Resistance.

2. Write short notes on plasma antennas.

3. State Reciprocity theorem.

4. What is meant by Radiation intensity ?

5. Define critical frequency.

(5 × 3 = 15 marks)

Part B

Answer all questions.
Each question carries 5 marks.

6. Explain briefly about binomial arrays.

7. What is meant by fading ? What are the different types of fading ?

8. How will you measure impedance of an antenna ?

9. Write short notes on Maximum Usable Frequency (MUF).

10. Derive the equation for field strength of space wave.

(5 × 5 = 25 marks)

Part C

Answer all questions.
Each full question carries 12 marks.

11. Derive the power radiated and radiation resistance of half wave depole.

Or

Turn over

12. Write short notes on : (a) Effective height ; (b) Effective aperture and derive the relationship between effective aperture and directivity.

13. Derive the equation for field strength at a distant point due to n isotropic point sources.

Or

14. Define Broadside Array. How will you design a BSA cobat are the properties of BSA. ·

15. Explain the principle and working of Helical antenna.

Or

16. Explain briefly :

   (a)   Microstrip antennas.

   (b)   Yagi-Uda antenna.

17. Explain the effect of earth's magnetic field on effective dielectric constant of ionised regions.

Or

18. Write short notes on :

   (a)   Skip distance ;

   (b)   Virtual height ;

   (c)   Diversity Reception.

19. How will you measure the directional pattern and gain of an antenna ?

Or

20. Define the steps to measure the range of an antenna.

(5 × 12 = 60 marks)