



C16-EC-405

6439

BOARD DIPLOMA EXAMINATION, (C-16)

MARCH/APRIL—2018

DECE—FOURTH SEMESTER EXAMINATION

MICROWAVE AND SATELLITE COMMUNICATION SYSTEMS

Time : 3 hours ]

[ Total Marks : 80

**PART—A**

3×10=30

**Instructions** : (1) Answer **all** questions.

(2) Each question carries **three** marks.

(3) Answers should be brief and straight to the point and shall not exceed *five* simple sentences.

1. Define critical frequency in ionosphere propagation.
2. List the different modes of radio propagation.
3. Define isotropic radiator.
4. What is need of antenna arrays?
5. What is waveguide? List the modes of propagation.
6. Define dominant mode and cut-off wavelength of waveguide.
7. Explain basic principle of radar.
8. Mention the disadvantages of pulsed radar.

\* 9. State the functions of satellite.

10. What is the function of transponder?

**PART—B**

10×5=50

**Instructions :** (1) Answer *any five* questions.  
(2) Each question carries **ten** marks.  
(3) Answers should be comprehensive and the criterion for valuation is the content but not the length of the answer.

11. Explain the space wave propagation and factors affecting space wave propagation.

12. Explain the sky wave propagation of electromagnetic waves.

13. Explain the operation of broadside array and its radiation pattern.

14. Explain the radiation pattern of loop antenna and list its applications.

15. Explain the reflex klystron with neat sketch.

16. Explain the IMPATT diode and TRAPATT diode briefly.

17. Derive radar range equation.

\* 18. Explain the block diagram of communication satellite.

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