



C16-EC-405

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BOARD DIPLOMA EXAMINATION, (C-16)

OCTOBER—2020

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 skip distance in ionospheric propagation.
2. List the factors affecting space wave propagation.
3. Define antenna gain and directivity.
4. State the need of antenna arrays.
5. What is the function of wave guide? List the types of wave guides.
6. Define phase velocity and group velocity.
7. What is doppler effect?
8. List the types of displays used in radar system.
9. Write the function of transponder.
10. List the applications of satellite communication.

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[ Contd....

**PART—B**

10×5=50

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

- 11.** Explain the ground wave propagation and mention ground effects on waves. 10
- 12.** Explain the ionosphere wave propagation. 10
- 13.** Explain the operation of broad side array and draw its radiation pattern. 10
- 14.** (a) Define isotropic radiator and draw its radiation pattern. 2+2  
(b) State the need for folded dipole antenna and mention its applications. 3+3
- 15.** Explain reflex klystron with a neat sketch. 10
- 16.** Explain the working of travelling wave tube. 10
- 17.** Derive the expression for radar range. 10
- 18.** Explain the block diagram of satellite communication system. 10

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