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C16-EC-405**6439**

BOARD DIPLOMA EXAMINATION, (C-16)
OCTOBER/NOVEMBER—2023
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. List the limitations of ground wave propagation.
2. Define the terms (a) reflection coefficient and (b) critical frequency.
3. State the antenna parameters.
4. Give the advantages and disadvantages of horn antenna.
5. Define the terms (a) phase velocity and (b) group velocity related to wave guides.
- * 6. State the function of wave guides and classify.
7. State the need of duplexer.
8. State the factors affecting range of a radar.
9. State the use of satellite for communication.
10. State the main functions of the satellite transponders.

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PART—B

10×5=50

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

- 11.** Explain the ionosphere wave (sky wave) propagation. 10
- 12.** (a) Explain duct propagation. 5
(b) Explain tropospheric scattering. 5
- 13.** Explain the function of parabolic reflector and dish antenna. 10
- 14.** Explain about End-fire Array and broad side array. 10
- 15.** Explain the working principle of magnetron and state its applications. 10
- 16.** State the uses of (a) T-junctions, (b) microwave bends and (c) microwave tapers. 4+3+3
- 17.** Draw the block diagram of a pulse radar and explain the components of a pulse radar. 10
- 18.** Explain the applications of satellite in Direct to Home (DTH) TV. 10

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