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C14-EC-501

**4630**

**BOARD DIPLOMA EXAMINATION, (C-14)**

**MARCH/APRIL—2021**

**DECE - FIFTH SEMESTER EXAMINATION**

**ADVANCED 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. Draw the electrical equivalent circuit of a transmission line.
2. Define the terms 'reflection coefficient' and 'SWR'.
3. Define dominant mode and cut-off wavelength in rectangular waveguide.
4. List the applications of magnetron.
5. State the tunnelling phenomenon.
6. State the need for microwave integrated circuits (MICs).
7. State the basic principle of radar with block diagram.
8. List the types of indicators used in radar system.
9. Define uplink frequency and downlink frequency.
10. List the three methods of increasing satellite channel capacity.

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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 single-stub matching in transmission lines and mention its disadvantages.
12. Explain the operation of circulator.
13. Explain the construction and working of reflex klystron oscillator.
14. Describe the constructional features and working of GUNN diode.
15. Explain the operation of branch-type duplexer with sketch.
16. Draw and explain the block diagram of MTI radar.
17. Explain geostationary satellite and mention its advantages and disadvantages.
18. Explain the working of GPS.

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