



C14-EC-501

4630

**BOARD DIPLOMA EXAMINATION, (C-14)**  
**SEPTEMBER/OCTOBER - 2020**  
**DECE—FIFTH SEMESTER EXAMINATION**  
**ADVANCED COMMUNICATION SYSTEMS**

Time : 3 hours ]

[ Total Marks : 80

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**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. What is lossless transmission line? List two types of distortions in transmission line.
2. Define group and phase velocities in transmission lines.
3. List various bands in microwave frequency range.
4. What is the need for isolators and circulators?
5. What is the need for microwave semiconductor devices?
6. List the applications of GUNN diode.
7. What is Doppler effect?

- \* 8. List the applications of various radar systems.
9. What is the need for satellite?
10. Define Azimuth and elevation with reference to satellites.

**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. (a) Draw the electrical equivalent circuit of a transmission line. 3  
(b) Derive the condition for distortion-less line. 4  
(c) Derive the relation between reflection coefficient and SWR. 3
12. Explain the construction and working of reflex klystron oscillator.
13. Explain the construction and working of travelling wave tube amplifier.
14. Explain the working of micro-strip antenna and write its applications.
15. Draw and explain the block diagram of pulsed radar system.
16. Explain the working of FM CW radar and explain its application as altimeter.
- \* 17. Draw and explain the block diagram of communication satellite.
18. Explain the working of GPS.

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