



C14-EC-501

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**BOARD DIPLOMA EXAMINATION, (C-14)
MARCH/APRIL—2017
DECE—FIFTH SEMESTER EXAMINATION**

ADVANCED COMMUNICATIONS

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 transmission line.
2. Define reflection coefficient and SWR.
3. Define rectangular and circular waveguides.
4. State the needs for isolators and circulators.
5. List the applications of GUNN diode.
6. List the applications of TRAPATT diode.
7. State the Doppler effect.
8. State the advantages of pulsed radar.

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9. List the ^{*}advantages of geostationary satellites.
10. Define apogee and perigee.

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) Explain the need for impedance matching in transmission lines. 4
 (b) Explain single-stub matching in transmission lines. 6
12. Describe various modes of operation of waveguides. 10
13. Explain the construction and working of reflex klystron oscillator. 10
14. (a) Explain the working of microstrip antenna. 7
 (b) List the applications of microstrip antenna. 3
15. (a) State the need for duplexer in radar. 3
 (b) Explain the operation of branch-type duplexer with sketch. 7
16. (a) Explain the working of FM CW radar? 5
 (b) Explain the application of FM CW radar as altimeter. 5
17. (a) State the functions of a transponder. 3
 (b) Explain single-conversion transponder used in satellites. 7
18. (a) Explain the working of GPS. 7
 (b) List the applications of satellites. 3
