# 4737

## BOARD DIPLOMA EXAMINATION, (C-14)
## OCTOBER/NOVEMBER-2018
## DECE – SIXTH SEMESTER EXAMINATION

ADVANCED COMMUNICATION SYSTEM

*Time :* 3 Hours  ]                                                    [ Total Marks: 80

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### PART-A

3X10=30

*Instructions    :*      1. Answer **All** questions.
2. Each question carries **Three** marks.
3. Answer should be brief and straight to the point and shall not exceed five simple sentences.

1.  Define Reflection Coefficient (K)

2.  Draw the electrical equivalent circuit of transmission line and name the elements.

3.  Define dominant mode in rectangular waveguide.

4.  Mention the need for isolators and circulators in wave guides.

5.  Write any three applications of GUNN Diode.

6.  Write any three differences between ordinary semiconductor device and microwave semiconductor device.

7.  State the need for duplexer in the Radar.

8.  Write any three demerits of pulsed Radar.

9.   Define the terms Apogee and Perigee.

10. Mention the three methods of increasing satellite capacity.

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# PART-B

*Instructions* : 1. Answer any **Five** questions.

2. Each question carries **ten** marks.

3. Answer should be comprehensive and the criterion for valuation is the content but not the length of the answer

11. Define the relationship between Reflection Coefficient (K) and Standing Wave Ratio (SWR)

12. Calculate the cut-off frequency, cut-off wavelength, guide wavelength, phase velocity, group velocity and characteristic impedance in a rectangular waveguide of 6GHz signal frequency and with internal dimension of 6cm x 3cm. Assuming dominant mode as $TE_{10}$

13. Explain the construction and working of Reflex Klystron Oscillator.

14. (a) State the Tunneling Phenomenon.

(b) Explain the working of Tunnel Diode.

15. Derive the Basic Radar range equation.

16. With the help of block diagram explain continuous Wave Radar.

17. Explain the fixed microwave link with a block diagram.

18. (a) Draw the block diagram of communication satellite.

(b) Explain the block diagram of communication satellite.

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