

**6439****BOARD DIPLOMA EXAMINATION, (C-16)****MARCH / APRIL — 2021****DECE — FOURTH SEMESTER EXAMINATION****MICROWAVE & SATELLITE COMMUNICATION SYSTEMS***Time* : Three Hours][*Maximum Marks* : 80**PART-A**

3×10=30

Instructions : (i) Answer **all** questions.
(ii) Each question carries **three** marks.
(iii) Answers should be brief and straight to the point and shall not exceed *five* simple sentences.

1. Define critical frequency in ionospheric propagation.
2. List the limitations of ground wave propagation.
3. Define directive gain and directivity of an Antenna.
4. List different microwave antennas.
5. State the use of microwave bends and microwave tapers.
6. Write the applications of TWT (Travelling Wave Tube).
7. State the need of duplexer.
8. List the applications of radars.
9. What are the advantages of Satellite communication over terrestrial communication systems ?
10. What is the function of GPS (Global Positioning System) ?

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

11. Explain the different layers of ionosphere with neat sketch. 10
12. (a) Explain space wave propagation. 7
(b) List the factors affecting space wave propagation. 3
13. Explain the operation of end fire array and draw its radiation pattern. 10
14. (a) Explain about Parabolic reflector. 5
(b) Explain the function of Horn antenna. 5
15. Explain the working of reflex klystron with a neat sketch. 10
16. (a) Define dominant mode and cut off frequency of a waveguide. 4
(b) Explain Gunn diode, IMPATT diode. 6
17. Draw and explain the block diagram of pulsed radar. 10
18. Draw and explain the block diagram of the earth station. 10

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