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C16-EC-405

**6439**

**BOARD DIPLOMA EXAMINATION, (C-16)**

**JUNE/JULY—2022**

**DECE - FOURTH SEMESTER EXAMINATION**

**MICROWAVES AND SATELLITE 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. Define maximum usable frequency.
2. List any three applications of ground wave propagation.
3. State the need of antenna array.
4. Define the terms radiation resistance and power gain.
5. List any three applications of microwaves.
6. Define cut off frequency in wave guides.
7. List the different types of radars.
8. State the need of duplexer.
9. State the use of satellite for communication.
10. List any three advantages of satellite communication system over terrestrial communication system.

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## PART—B

- 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. (a) Classify the layers of ionosphere with heights. 3  
(b) Explain sky wave propagation. 7
12. (a) Explain tropospheric scattering wave propagation. 5  
(b) Explain ground wave propagation. 5
13. (a) Explain dish antenna. 6  
(b) Briefly explain Radiation mechanism of an antenna. 4
14. (a) Briefly explain the function of dipole antenna and give its applications. 5  
(b) Briefly explain the function of folded dipole antenna and give its applications. 5
15. Explain the working of travelling wave tube. 10
16. Explain the working of DVIPATT diode. 10
17. Draw and explain the block diagram of MTI Radar. 10
18. Draw and explain the block diagram of satellite earth station. 10

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