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C16-EC-405

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BOARD DIPLOMA EXAMINATION, (C-16)

AUGUST/SEPTEMBER—2021

DECE - FOURTH SEMESTER EXAMINATION

MICROWAVE AND SATELLITE COMMUTATION SYSTEMS

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. List the applications of ground wave propagation.
2. Define the terms (a) refractive index and (b) maximum unstable frequency.
3. Define the terms (a) radiation intensity and (b) antenna beam efficiency.
4. State the need of antenna arrays.
5. Give the list of different microwave solid state devices.
6. State the applications of microwaves.
7. List the displays of radar.
8. State the major advantages and disadvantages of a pulsed radar system.
9. Draw block diagram of a satellite communication system.
10. State the use of satellite for communication.

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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.

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| 11. | Explain the space wave (tropospheric wave) propagation and factors affecting space wave propagation. | 10 |
| 12. | Explain energy absorption and wave path in the ionosphere. | 10 |
| 13. | (a) Briefly explain isotropic radiator. | 5 |
| | (b) Briefly explain radiation mechanism of an antenna. | 5 |
| 14. | Explain horn antenna and give its applications, advantages and disadvantages. | 10 |
| 15. | Explain the working of IMPATT DIODE. | 10 |
| 16. | (a) Explain circular wave guides. | 5 |
| | (b) Describe various modes of operation of wave guides. | 5 |
| 17. | Draw and explain the block diagram of continuous wave (CW) radar. | 10 |
| * 18. | Explain the application of satellite in GPS (Global Positioning System). | 10 |

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