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C16-EC-504

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BOARD DIPLOMA EXAMINATION, (C-16)

AUGUST/SEPTEMBER—2021

DECE - FIFTH SEMESTER EXAMINATION

OPTICAL AND MOBILE 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. Define single-mode fiber (SMF) and multi-mode fiber (MMF).
2. Define numerical aperture (NA).
3. State the function of splice in optical fibers.
4. List the types of detectors used in OFC.
- * 5. List the advantages of electronic telephone over manual telephone.
6. Define the terms 'mobile station' and 'base station'.
7. State the need for hexagonal cell site.
8. Define hand-off in mobile communication.
9. List the features of digital cellular system.
10. List different IMS applications.

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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 structure of optical fiber. | 10 |
| 12. | Draw and explain the block diagram of DWDM. | 10 |
| 13. | Explain the construction and working of LASER source. | 10 |
| 14. | Explain the block diagram of electronic telephone exchange. | 10 |
| 15. | (a) List the salient features of an optical source. | 4 |
| | (b) Explain the limitation of conventional mobile phone system. | 6 |
| 16. | (a) Define the terms 'cell' and 'cluster'. | 3 |
| | (b) Explain the capacity of cellular system. | 7 |
| 17. | Compare FDMA, TDMA and CDMA. | 10 |
| 18. | Explain IP multimedia subsystem (IMS). | 10 |

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