



C20-EC-503

7642

BOARD DIPLOMA EXAMINATION, (C-20)

OCTOBER/NOVEMBER—2023

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. State the advantages of light wave communication over EM wave.
2. List two types of optical source and detector used in optical communication.
3. State the need for splicing in optical fibres.
4. Distinguish between DTMF and Pulsed dialling.
5. State the need for multiple access techniques.
6. Define Hand-off in mobile communication.
7. List the features of digital cellular system.
8. List various interfaces used in GSM architecture.
9. State the applications of IMS.
10. State the abbreviation of GSM, GPRS and EDGE.

PART—B

8×5=40

- Instructions :** (1) Answer **all** questions.
(2) Each question carries **eight** marks.
(3) Answers should be comprehensive and criterion for valuation is the content but not the length of the answer.

11. (a) Explain the structure of optical fibre in detail. 8

(OR)

(b) (i) Define Snell's law in optics. 3

(ii) Explain single mode and multimode fibres. 5

12. (a) Draw the block diagram of fibre optic communication system and explain the each block. 8

(OR)

(b) Explain the intrinsic and extrinsic losses in optical fibres. 8

13. (a) Explain the limitations of conventional mobile phone system. 8

(OR)

(b) Explain the functions of Mobile Switching Centre (MSC). 8

14. (a) Explain TDMA technique. 8

(OR)

(b) Explain CDMA and give its features. 8

15. (a) Explain the architecture of IP Multimedia Subsystem (IMS). 8

(OR)

(b) (i) List the salient features of GSM. 4

(ii) State the advantages and disadvantages of GSM. 4

PART—C

10×1=10

- Instructions :**
- (1) Answer the following question.
 - (2) The question carries **ten** marks.
 - (3) Answer should be comprehensive and the criterion for valuation is the content but not the length of the answer.

16. Explain the concept of spread spectrum technique in detail.

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