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BOARD DIPLOMA EXAMINATION, (C-16)

JUNE/JULY—2022

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. Write any three advantages of lightwave communication system over EM wave systems.

2. Define acceptance angle and cone of acceptance.

3. State the function of splice in optical fibers.

4. State the need for optical coupler/splitter.

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5. Define the terms mobile station and base station.

6. State the functions of mobile switching center.

7. Define hand-off in mobile communications.

8. State the need for multiple access techniques.

9. Compare the features of GSM, GPRS and EDGE systems.

10. List the applications of IMS.

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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. Define Snell's law and explain lightwave propagation in OFC. 10

12. Draw and explain the block diagram of WDM system. 10

13. Draw the block diagram of fiber optic communication system and explain each block. 10

14. *(a)* Explain the construction of laser. 5

(b) Compare In-band and Out-band signaling. 5

15. Explain pulsed and DTMF dialing. 10

16. Draw the block diagram of basic cellular system and explain the process of call progress. 10

17. Explain TDMA and its frame structure. 10

18. Explain the global system for mobile communication with a block diagram. 10

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