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BOARD DIPLOMA EXAMINATION, (C–16)

NOVEMBER—2020

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. Classify optical fibres based on refractive index profile.

2. Define Snell's law.

3. List any three fibre optic components.

4. State the need for Optical Coupler/Splitter.

5. Mention any three advantages of electronic telephony over manual telephony.

6. Define mobile station and base station.

7. State the need for hexagonal cell site.

8. List any three drawbacks of analog cellular system.

9. List any three features of digital cellular system.

10. Write any three applications of IMS.

PART—B

10×5=50

Instructions : (1) Answer *any* **five** questions.

(2) Each question carries **ten** marks.

(3) Answers should be comprehensive and the criteria for valuation are the content but not the length of the answer.

11. Explain Intrinsic and Extrinsic losses in optical fibre. 10

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

13. State the principle of laser. Explain the construction and working of a laser source. 10

14. *(a)* List any five salient features of an optical detector. 5

(b) Draw the block diagram of an electronic telephone exchange. 5

15. Explain the evolution of cellular mobile communication system. 10

16. Explain the process of call progress in a cellular system with a neat diagram. 10

17. Draw and explain TDMA. 10

18. *(a)* List various interfaces in GSM. 4

(b) List the service and security aspects of GSM. 6

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