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C16-EC-504

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BOARD DIPLOMA EXAMINATION, (C-16)

MARCH/APRIL—2021

DECE - FIFTH SEMESTER EXAMINATION

OPTICAL AND MOBILE COMMUNICATION

Time : 3 hours ]

[ Total Marks : 80

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PART—A

**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 advantages of optical fiber communication over microwave systems. 3
2. Define the terms acceptance angle and numerical aperture.  $1\frac{1}{2}+1\frac{1}{2}=3$
3. Write the need for splice in optical fiber communication. 3
4. List the salient features of an optical source. 3
- \* 5. Write the advantages of electronic telephony over manual telephony. 3
6. List various channels in mobile communication. 3
7. Define the terms cell and cluster.  $1\frac{1}{2}+1\frac{1}{2}=3$
8. Write the need for multiple accessing. 3
9. List various interfaces in GSM architecture. 3
10. Write the advantages of 3G cellular system. 3

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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 of optics and explain the principle of light propagation through optical fiber. 3+7=10
12. Write the need for WDM and explain the block diagram of DWDM. 4+6=10
13. Explain the construction and working of LASER diode with neat sketch. 6+4=10
14. (a) Define salient features of optical detectors. 4  
(b) Write short notes on pulsed and DTMF dialling. 3+3=6
15. Explain the process of call progress in cellular system. 10
16. Explain the concept of spread spectrum technique with block diagram. 10
17. Draw and explain the block diagram of GSM architecture. 10
18. (a) Compare the features of GPRS and EDGE systems. 6  
(b) List different applications of IP multimedia system. 4

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