

17669

11819

3 Hours / 100 Marks

Seat No.

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- Instructions :**
- (1) All Questions are *compulsory*.
 - (2) Illustrate your answers with neat sketches wherever necessary.
 - (3) Assume suitable data, if necessary.

Marks

1. (A) Attempt any THREE : 12
- (a) State and explain any four advantages of fiber optic communication system.
 - (b) (i) List any two optical sources and optical detectors.
(ii) State two applications of fiber optic communication.
 - (c) Define the function of following :
 - (i) Home Location Register (HLR)
 - (ii) Visitor Location Register (VLR)
 - (d) Draw and explain the eye pattern diagram of optical fiber communication.
- (B) Attempt any ONE : 6
- (a) Explain cordless phone wireless system with diagram.
 - (b) Draw fiber optic communication system and explain each block.
2. Attempt any FOUR : 16
- (a) Explain any four losses occurring in fiber optic cable.
 - (b) Explain optical time domain reflectometer with neat diagram.
 - (c) Draw diagram showing Adjacent channel and Co-channel interference and explain.
 - (d) With neat diagram of call flow sequence explain call processing from landline to mobile phone.
 - (e) Define the following terms :
 - (i) Total internal reflection
 - (ii) Critical angle
 - (iii) Acceptance angle
 - (iv) Numerical aperture

- 3. Attempt any TWO :** **16**
- (a) Explain cellular mobile transmitter block diagram.
 - (b) Define the following :
 - (i) Frequency reuse
 - (ii) Co- Channel Interference
 - (iii) Frequency reuse ratio
 - (iv) Dynamic cell allocation
 - (c) Explain the construction of optical fiber cable with neat diagram and state classification of optical fiber on the bases of index profile.
- 4. (A) Attempt any THREE :** **12**
- (a) Explain working of light emitting diode as optical source with neat diagram.
 - (b) Explain sectoring and cell splitting in cellular system.
 - (c) State features of Local Multipoint Distribution System (LMDS) and draw its diagram.
 - (d) Draw GSM architecture and explain function of any three blocks in it.
- (B) Attempt any ONE :** **6**
- (a) State any 6 air parameters of GSM system with value.
 - (b) Explain WLL (Wireless Local Loop) with neat diagram.
- 5. Attempt any TWO :** **16**
- (a) State and explain features of IMT 2000 any eight.
 - (b) Draw and explain cellular communication system block diagram.
 - (c) Compare CDMA 2000 and WCDMA on bases of following points.
 - (i) Modulation type
 - (ii) Frame length
 - (iii) Chip rate
 - (iv) Multiple access technique
- 6. Attempt any FOUR :** **16**
- (a) Explain authentication process in GSM system with neat diagram.
 - (b) Explain UMTS architecture.
 - (c) Explain the process of fusion splicing technique used for fiber joint.
 - (d) List services provided in IS-95 any four.
 - (e) State function of :
 - (i) Equipment Identity Register (EIR)
 - (ii) Authentication Centre (AUC)
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