

Con. 7289-13.

GS-9036

(3 Hours)

[ Total Marks : 100

N.B. : (1) Question No. 1 is compulsory.

(2) Attempt any **four** out of remaining **six** questions.(3) Assume **suitable** data if **necessary**.1. Attempt the following (any **four**) :-

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- (a) Explain in details block diagram of Analog and Digital communication system.
- (b) How data, Video, Voice is integrated on single platform ?
- (c) What are different types of network topology ?
- (d) Explain ISO-OSI layered architecture in detail.
- (e) What is the importance of logical layers in Telecommunications Management Networks (TMN) ?

2. (a) What are different data multiplexing techniques used in cellular system ?

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(b) Explain modulator and demodulator used in Binary Phase Shift Keying (BPSK). What is probability of error ?

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3. (a) What are the typical characteristics of connection-oriented and connection-less service ? What are merits and demerits of each ?

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(b) Compare the four transfer modes viz. Circuit switching, Virtual circuit switching, Cell switching, Routing switching on the following aspects with proper reasoning :

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- (i) Nature of connection
- (ii) Resource reservation
- (iii) Resource utilization
- (iv) Reliability
- (v) Ability to carry voice.

4. (a) Explain the following flow control mechanisms :

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- (i) Window based flow control
- (ii) Rate based flow control.

(b) What is the difference between shared memory and shared medium buffering architecture ?

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5. (a) How call is established and released in the ISDN ? Also describes the protocol stack for ISDN.

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(b) What is traffic contract management ? What are its key elements ?

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6. (a) What is need for Network Management ? Differentiate between the TMN functional architecture and TMN physical architecture. **10**
- (b) Explain in detail GSM architecture. State merits and demerits of GSM cellular system. **10**
7. Write short notes on any **four** :— **20**
- (a) Kerberos
  - (b) 3G UMTS Network
  - (c) Asynchronous Transfer Mode (ATM)
  - (d) Bluetooth technology
  - (e) Error correction and detection methods.
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