



17430

21718

3 Hours / 100 Marks

Seat No.

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- Instructions :** (1) *All questions are compulsory.*
(2) *Answer each next main question on a new page.*
(3) *Illustrate your answers with neat sketches wherever necessary.*
(4) *Figures to the right indicate full marks.*
(5) *Assume suitable data, if necessary.*
(6) *Use of Non-programmable Electronic Pocket Calculator is permissible.*
(7) *Mobile Phone, Pager and any other Electronic Communication devices are not permissible in Examination Hall.*

Marks

1. A) Attempt **any six** of the following : **12**
- a) What is data communication ?
 - b) Define guided and unguided media.
 - c) What is Error ? Enlist types of errors.
 - d) What is SMDS ?
 - e) What is Encapsulation ?
 - f) What are the problems in Internetworking ?
 - g) What is router ? List types of router.
 - h) What is IP Address ? Why it is required ?
- B) Attempt **any two** of the following. **8**
- a) Explain virtual LAN with its two benefits.
 - b) Describe any four advantages of fiber optic cable.
 - c) List various standard organisations for data communication.
2. Attempt **any four** of the following. **16**
- a) Differentiate between serial and parallel transmission.
 - b) Explain Microwave communication.
 - c) Describe the characteristics of data communication system.
 - d) Explain the functions of Network Layer in OSI model.
 - e) Describe the following i) Wi-Fi ii) Wi-MAX.
 - f) What is FDDI ? Explain its working in details.

P.T.O.



3. Attempt **any four** of the following.

- a) Describe the various IP Address classes.
- b) Compare TCP and UDP (4 points only).
- c) With the help of diagram describe Internet Topology.
- d) Explain Leased Line with its benefits.
- e) Describe DQDB.
- f) Explain VRC method of error detection with suitable example.

4. Attempt **any four** of the following.

16

- a) Explain Packet Switching for datagram approach.
- b) Draw the components of data communication system and state the function of each component.
- c) Compare WAN and MAN (any 4 points).
- d) Explain FTP with its working.
- e) Explain with diagram of ARP message format.
- f) Describe SLIP and PPP.

5. Attempt **any four** of the following.

16

- a) Describe Gateways with its two advantages and two disadvantages.
- b) Explain Data Fragmentation and Reassembly.
- c) Explain layers of OSI model (any 2 layers).
- d) Describe CRC with example.
- e) Explain different types of transmission errors.
- f) State the meanings of :
 - i) Phase
 - ii) Frequency
 - iii) Bandwidth
 - iv) Time Period

6. Attempt **any four** of the following.

16

- a) Compare between OSI and TCP/IP model (any 4 points).
 - b) Describe the following :
 - 1) Bridges and
 - 2) Repeaters.
 - c) Describe internal architecture of ISP.
 - d) Compare Analog signal and Digital signal. (4 points).
 - e) What is WAN Addressing ? Give its use.
 - f) What is Multiplexing ? List types of multiplexing and explain any one.
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