

17429

21314

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) 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
- i) List any two applications of computer network.
  - ii) List any four types of computer network by considering geography.
  - iii) Give two advantages of mesh topology.
  - iv) Give the names of various N/W connecting devices (Any two).
  - v) List any two advantages of optical fiber cable.
  - vi) Draw the sketch of co-axial cable (cross-sectional view)
  - vii) Define 'Protocol' with reference to computer network.  
What is the function of IP?
  - viii) List any two components which works at physical layer of OSI model.

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**Marks****b) Attempt any TWO of the following:****08**

- i) Describe four advantages of computer network.
- ii) Compare Bus topology and Ring topology (four points).
- iii) Suppose you are going to implement a computer network in a small business mall. Which topology will you use? Why?

**2. Attempt any FOUR of the following:****16**

- a) Name the types of server used in server-based network. Describe the working of such a network.
- b) Explain any four benefits of computer network.
- c) Describe various factors to be considered while selecting transmission media.
- d) Give two applications of
  - i) twisted pair cable
  - ii) co-axial cable
- e) What are the various components of computer network. Describe any one.
- f) Compare guided and unguided media used in computer network.

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**Marks****3. Attempt any FOUR of the following:****16**

- a) Describe the concept of peer-to-peer network. Where it is used?
- b) Describe with neat sketch “Hybrid topology”. Give its applications.
- c) What is meant by subnet? How to use subnet masking to create two subnets?
- d) Describe horizontal and vertical communication.
- e) Describe the importance/role of presentation layer in OSI model.
- f) Explain the working of “File Transfer Protocol” with a neat diagram.

**4. Attempt any FOUR of the following:****16**

- a) Describe TCP used in computer communication.
- b) Compare IPv4 and IPv6 (four points).
- c) Explain handoff procedure of cellular mobile phone.
- d) Describe meaning and function of :
  - i) MAC address
  - ii) IP address
- e) What are the services provided by the network layer of OSI model
- f) Describe in brief :
  - i) Backing up data
  - ii) File sharing

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**Marks****5. Attempt any FOUR of the following:****16**

- a) Which layer of OSI model packages raw data bit. Describe bit stuffing with one example.
- b) In which circumstances star topology is preferred mostly. Name the centralized device used in star topology. Give its two advantages over Hub.
- c) Describe OSI model with layer structure.
- d) Explain the working of “TELNET”
- e) Which different classes are used for IP addressing. Describe each in brief.
- f) Describe the role of following network devices used in computer network
  - i) Gateway
  - ii) Router
  - iii) Hub
  - iv) Switch

**6. Attempt any TWO of the following:****16**

- a) Describe TCP/IP with neat sketch. Compare TCP/IP and OSI reference model.
- b) Describe any two connectionless and connection oriented protocols.
- c) Explain following wireless technologies used in computer communication :
  - i) wi-fi
  - ii) bluetooth

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