2023

INFORMATION TECHNOLOGY

Paper : INT–VE–5016

(Computer Network)

Full Marks : 60

Time : 3 hours

The figures in the margin indicate full marks for the questions

1. Answer the following as directed : 1×7=7

(a) Which one of the following is not a network topology?

(i) Star

(ii) Ring

(iii) Bus

(iv) Peer-to-peer

(Choose the correct option)

(b) The length of an IPv6 address is

(i) 32 bits

(ii) 64 bits

(iii) 128 bits

(iv) 8 bits

(Choose the correct option)

(c) Which layer provides the services to the user?

(i) Data link

(ii) Network

(iii) Application

(iv) Session

(Choose the correct option)

(d) Which layer of TCP/IP stack corresponds to OSI model transport layer?

(i) Host-to-host

(ii) Application

(iii) Internet

(iv) Network

(Choose the correct option)

(e) What IP address class allocates 8 bits for the host identification part?

(i) A

(ii) B

(iii) C

(iv) D

(Choose the correct option)

(f) Address 0.0.0.0 is called the _____.

(Fill in the blank)

(g) A firewall acts as a packet filter inspecting all the packets entering the local network.

(Write true or false)

2. Answer the following questions : 2×4=8

(a) What are the components of data communication?

(b) What is network addressing?

(c) What are the responsibilities of data link layer?

(d) Write down the disadvantages of bus topology.

3. Answer any *three* of the following questions : 5×3=15

(a) What is a data communication? What are the components of data communication?

(b) Differentiate between TCP/IP protocol suite and OSI model.

(c) What is multiplexing? Explain frequency division multiplexing.

(d) Explain different types of ethernet network that are used to connect devices and transfer data.

(e) Explain different types of bluetooth network.

4. Answer the following questions (any *three*) : 10×3=30

(a) Represent the mentioned data in Manchester encoding and differential Manchester encoding technique :

11010101

(b) What is a network? Explain the different types of network.

(c) Describe CSMA/CD protocol in ethernet.

(d) What are transmission modes? Describe the difference of different transmission modes.

(e) Explain different functions done at data link layer.

(f) Describe OSI model with the functions of each layer.

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