2023

COMPUTER SCIENCE

Paper : CSTHC3076

(Computer Networks)

Full Marks : 60
Pass Marks : 24

Time : 3 hours

The figures in the margin indicate full marks for the questions

1. Choose the correct answer of the following (any *five*) : 1×5=5

(a) MIME stands for

(i) Multiple Internet Mail Extensions

(ii) Multipurpose Internet Mail Extensions

(iii) Multipurpose Interface Main Experts

(iv) Multilevel Intranet Motion Executions

(b) Which one of the following is a disadvantage of BUS Topology?

(i) Not suitable for larger networks

(ii) Sniffing is easier

(iii) Limited in size and speed

(iv) All of the above

(c) An analog signal is

(i) continuous

(ii) sinusoidal

(iii) varying voltage

(iv) All of the above

(d) Which is not correct about Gateway?

(i) It is not a network node

(ii) It connects dissimilar networks

(iii) It connects network with different protocols

(iv) All of the above

(Continued)

(e) How many types of routing protocols are there?

(i) 1

(ii) 2

(iii) 3

(iv) 4

(f) Which layer provides reliable end-to-end transmission of data services?

(i) Network layer

(ii) Transport layer

(iii) Data link layer

(iv) Transmission layer

(g) An HTTP connection is a ____ oriented connection.

(i) TTP

(ii) TCP

(iii) SMTP

(iv) FTP

(Turn Over)

(h) Cable TV data transfer includes

(i) bandwidth

(ii) CM and CMTS

(iii) data transmission schemes

(iv) All of the above

(i) How many networks are allowed in class A of internet protocol?

(i) 120

(ii) 122

(iii) 124

(iv) 126

(j) Framing is a process of

(i) efficient data transfer

(ii) point-to-point connection of devices

(iii) breaking up of data in small chunks for data transmission

(iv) All of the above

2. Answer in brief any *five* of the following questions : 2×5=10

(a) What is network protocol?

(b) How is data rate measured?

(c) What is packet switching?

(d) Why is bridge used in network?

(e) What is internet control protocol?

(f) Write any two services of session layer of OSI.

(g) What is DNS protocol?

3. Answer any *five* of the following questions : 5×5=25

(a) What are the advantages and disadvantages of Ring Topology?

(b) Explain the communication mechanism among each layer in TCP/IP.

(c) What is PCM? Explain with an example.

(d) What are the services of application layer of OSI model?

(e) How can error detection and error correction be done? Explain.

(f) Differentiate between connectionless and connection-oriented servics.

(g) Describe the working principle of fiber optics media.

(h) How is Go-Back-N ARQ more efficient than stop-and-wait ARQ?

(i) Write a short note on digital subscriber line.

4. Answer any *two* of the following questions : 10×2=20

(a) Discuss digital-to-digital line encoding schemes in detail.

(b) Describe the working principle of connection establishment and release using three-way handshake with a neat diagram.

(c) Discuss multiplexing techniques— FDM, TDM with illustrations.

(d) Explain CSMA/CD protocols with examples.

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