Total No. of printed pages = 10

Co-504/CCN/5th Sem/2018/M

COMPUTER COMMUNICATION AND NETWORK

Full Marks – 70

Time – Three hours

The figures in the margin indicate full marks for the questions.

PART – A

Marks – 25

1. (i) Physical layer concerns with : 1×25=25

(a) bit-by-bit delivery

(b) process to process delivery

(c) application to application delivery

(d) none of the mentioned.

(ii) Which transmission media has the highest transmission speed in a network ?

(a) coaxial cable

(b) twisted pair cable

(c) optical fiber

(d) electrical cable.

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(iii) Bits can be send over guided and unguided media as analog signal by

(a) digital modulation

(b) amplitude modulation

(c) frequency modulation

(d) phase modulation.

(iv) The portion of physical layer that interfaces with the media access control sublayer is called

(a) physical signalling sublayer

(b) physical data sublayer

(c) physical address sublayer

(d) none of the mentioned.

(v) Physical layer provides

(a) mechanical specifications of electrical connectors and cables.

(b) electrical specification of transmission line signal level.

(c) specification for IR over optical fibre.

(d) all of the mentioned.

(vi) The data link layer takes the packets from ..... and encapsulates them into frames for transmission.

(a) network layer

(b) physical layer

(c) transport layer

(d) application layer

(vii) Which one of the following task is not done by data link layer ?

(a) framing (b) error control

(c) flow control (d) channel coding

(viii) Which sublayer of the data link layer performs data link functions that depend upon the type of medium ?

(a) logical link control sublayer

(b) media access control sublayer

(c) network interface control sublayer

(d) none of the mentioned.

(ix) Header of a frame generally contains

(a) synchronization bytes

(b) addresses

(c) frame identifier

(d) all of the mentioned.

(x) Automatic repeat request error management mechanism is provided by :

(a) logical link control sublayer

(b) media access control sublayer

(c) network interface control sublayer

(d) none of the mentioned.

(xi) The network layer concerns with

(a) bits

(b) frames

(c) packets

(d) none of the mentioned.

(xii) Which one of the following is not a function of network layer ?

(a) routing

(b) inter-networking

(c) congestion control

(d) none of the mentioned.

(xiii) The 4 byte IP address consists of

(a) network address

(b) host address

(c) both (a) and (b)

(d) none of the mentioned.

(xiv) In virtual circuit network each packet contains

(a) full source and destination address

(b) a short VC number

(c) both (a) and (b)

(d) none of the mentioned.

(xv) Which one of the following routing algorithm can be used for network layer design ?

(a) shortest path algorithm

(b) distance vector routing

(c) link state routing

(d) all of the mentioned.

(xvi) Transport layer aggregates data from different applications into a single stream before passing it to

(a) network layer

(b) data link layer

(c) application layer

(d) physical layer

(xvii) Which one of the following is a transport layer protocol used in internet ?

(a) TCP

(b) UDP

(c) both (a) and (b)

(d) none of the mentioned.

(xviii) User datagram protocol is called connectionless because

(a) all UDP packets are treated independently by transport layer

(b) it sends data as a stream of related packets

(c) both (a) and (b)

(d) none of the mentioned.

(xix) Transmission control protocol is

(a) connection oriented protocol

(b) uses a three way handshake to establish a connection

(c) receives data from application as a single stream

(d) all of the mentioned.

(xx) An endpoint of an inter-process communication flow across a computer network is called

(a) socket

(b) pipe

(c) port

(d) none of the mentioned.

(xxi) When collection of various computers seems a single coherent system to its client, then it is called

(a) computer network

(b) distributed system

(c) both (a) and (b)

(d) none of the mentioned.

(xxii) Two devices are in network if

(a) a process in one device is able to exchange information with a process in another device.

(b) a process is running on both devices.

(c) PIDs of the processes running of different devices are same.

(d) none of the mentioned.

(xxiii) Which one of the following compute network is built on the top of another network

(a) prior network (b) chief network

(c) prime network (d) overlay network.

(xxiv) In computer network nodes are

(a) the computer that originates the data

(b) the computer that routes the data

(c) the computer that terminates the data

(d) all of the mentioned.

(xxv) Communication channel is shared by all the machines on the network in

(a) broadcast network

(b) unicast network

(c) multicast network

(d) none of the mentioned.

PART – B

Marks – 45

Answer any *three* questions.

2. Explain various layers of the ISO-OST reference model with layer diagram. 15

3. (a) What are the different types of transmission media ? 5

(b) Explain about the features. (any *two*) : 5+5=10

(i) Base band co-axial cable

(ii) Fibre optic cable

(iii) Communication satellite

4. (a) What are the design issues of data link layer? 6

(b) What do you mean by routing ? Explain one of a routing algorithm. 3+6=9

5. (a) What are the differences between pure ALOHA and slotted ALOHA? 4

(b) What are the different classes of IP address? 5

(c) What are the differences of connection oriented and connectionless services ? 6

6. (a) What are the different types of switching ? 6

(b) What is multiplexing ? What are the different types of multiplexing ? 2+4=6

(c) What is an electronic mail ? 3