



HALDIA INSTITUTE OF TECHNOLOGY

(AN AUTONOMOUS INSTITUTION UNDER MAULANA ABUL KALAM AZAD UNIVERSITY OF TECHNOLOGY, WEST BENGAL)

Paper Code: PCC-CS 602

Paper Name: Computer Networks

Time Allotted: 2 Hours

Full Marks: 70

The figures in the margin indicate full marks

Candidates are required to give their answers in their own words as far as practicable

Group – A

(Multiple Choice Type Questions)

1. Choose the correct alternatives from the followings:

30 x 1 = 30

(i) Which transmission media has the highest transmission speed in a network?[CO2]

- a) Coaxial Cable
- b) Optical fiber
- c) Twisted pair cable
- d) Electrical cable

(ii) The physical layer concerns with [CO2]

- a) Bit by bit delivery
- b) Process to process delivery
- c) Host to host delivery
- d) Application to application delivery

(iii) One of the error detection techniques at the data link layer is [CO2]

- a) CRC
- b) Bit stuffing
- c) hamming code
- d) Byte stuffing

(iv) In Stop-and-Wait Automatic Repeat Request, if frame 0 has arrived safe and sound then receiver sends an ACK frame with acknowledgment [CO2]

- a) 2
- b) 0
- c) 1
- d) none of these

(v) Which address is known as loop-back address? [CO3]

- a) 127.0.0.1
- b) 255.255.255.255
- c) 0.0.0.0
- d) 127.0.0.0

(vi) Each IP packet must contain [CO3]

- Source address only
- Both source and destination address
- Destination address only
- none of these

(vii) Which among the following represents the objectives of Data Link Layer? [CO2]

- Frame synchronization and error/flow control
- Flow and error control
- Frame synchronization
- none of these

(viii) When does the station B send an acknowledgement (ACK) to station A in Stop and Wait protocol? [CO3]

- When B receives a frame with error
- When retransmission of old frame is required
- When no error occurs
- All of these

(ix) What types of frames are issued by the secondary station with HDLC protocol? [CO2]

- a) Response b) Command
c) Link d) none of these

(x) Count-to-Infinity problem occurs in [CO2]

- a) Shortest path first b) Distance vector routing
- c) Link state routing d) Hierarchical routing

(xi) In distance vector routing algorithm, the routing tables are updated [CO2]

- a) By exchanging information with the neighbors
- b) Automatically
- c) Using backup database
- d) By server

(xii) Distance vector routing algorithm is implemented in Internet as [CO2]

- a) OSPF b) RIP c) BGP d) none of these

(xiii) The ____ translates internet domain and host names to IP address.[CO3]

- a) DNS b) RIP c) Internet relay chat d) network time protocol

(xiv) Which port number is associated with HTTP? [CO3]

- a) 80 b) 21 c) 20 d) 23

(xv) SOCKET is combination of [CO3]

- a) IP and MAC address b) MAC address and port no.
c) IP and port no d) none of these

(xvi) Which one is used to compress video? [CO3]

- a) MPEG b) JPEG c) XPS d) PDF

(xvii) Which one is used to compress image? [CO3]

- a) JPEG b) MPEG c) XPS d) PDF

(xviii) HTML is a language for creating [CO3]

- a) Web Page b) Default page
c) Hash page d) Paging

(xix) HTTP is a _____ protocol. [CO2]

- a) Byte transfer b) Message transfer
c) Bit transfer d) File transfer

(xx) Which one is not a part of a browser? [CO3]

- a) Compiler b) Controller
c) Interpreter d) Client program

(xxi) What does FTP do? [CO2]

- a) Delete content from a file
b) Append content to a file
c) Copies a file from one host to another
d) none of these

(xxii) Which one is not a transmission mode in FDP? [CO3]

- a) Datagram b) Stream c) Block d) Compressed

(xxiii) DNS message is [CO3]

- a) Either query or response b) Both query and response
c) Query only d) Response only

(xxiv) Which one is not a method for shaping traffic at transport layer? [CO3]

- a) Stop N wait b) Leaky bucket c) Token ring d) none of these

(xxv) What type of protocol UDP is? [CO2]

- a) Connectionless b) Connection oriented
c) Reliable d) none of these

(xxvi) What type of routing protocol RIP is? [CO2]

- a) Intra-domain b) Inter-domain
c) Collision domain d) none of these

(xxvii) Which type of link is not defined in OSPF? [CO2]

- a) Point to point b) Coaxial
c) Transient d) Stub

(xxviii) Which one is not a dynamic routing protocol? [CO2]

- a) Stop N wait b) RIP c) OSPF d) BGP

(xxix) The minimum size of ICMP packet not considering the preamble and SFD fields. [CO2]

- a) 64 bytes b) 128 bytes c) 32 bytes d) 8bytes

(xxx) For which one IGMP protocol is used? [CO3]

- a) Multicast addressing b) Unicast addressing
c) Broadcast addressing d) all of these

Group – B

(Multiple Choice Type Questions)

2. Choose the correct alternatives from the followings:

10 x 2 = 20

(i) Which type of S-frame in HDLC exhibit the correspondence of last three bits [N(R)] by defining the negative acknowledgement (NAK) number with the codevalue of '01'? [CO3]

- a) Reject b) Receive ready

- c) Receive not ready d) Selective reject

(ii) If a periodic signal is decomposed into five sine waves with frequencies of 100, 300, 500, 700, and 900 Hz, what is the bandwidth? [CO3]

- a) 800Hz b) 1000Hz c) 500 Hz d) 100Hz

(iii) Consider the following statements.

s1: Network layer is responsible for host to host communication

S2: Transport layer is responsible for process to process communication [CO3]

- a) Both s1 and s2 are correct b) only s1 is correct
c) only s2 is correct d) Both s1 and s2 are wrong

(iv) Error and flow control are done [CO3]

- a) Both in data link and transport layers
b) Only in transport layer
c) Only in data link layer
d) none of these

(v) Which of the following is/are application layer service/s? [CO2]

- a) Remote login b) File transfer and access
c) Domain name service d) all of these

(vi) In TCP, the connection establishment mechanism uses [CO2]

- a) Syn and Ack frames b) Fin and Ack frames
c) Syn and Fin frames d) none of these

(vii) A sine wave has a frequency of 8 kHz. What is its period?

- a) 125 microseconds b) 124 microseconds
c) 128 microseconds d) 127 microseconds

(viii) A firewall is a security mechanism that stands between [CO3]

- a) Global internet and network b) LAN and MAN
c) MAN and WAN d) none of these

(ix) Which one is not a transition strategy with IPv6? [CO3]

- a) Dual stack b) Tunneling
c) Header translation d) Retransmission

(x) A supernet mask has _____ consecutive 1s than the corresponding default mask [CO3]

- a) Less
- b) More
- c) Equal
- d) Any no. of

Group – C

(Short Answer Type Questions)

3. Attempt any four from the followings:

4 x 5 = 20

i) a) What is the minimum window size required for GO-BACK-N ARQ protocol? [CO2]

b) What is polling? [CO3]

c) In HDLC what is Bit Stuffing? Why bit stuffing is required? [CO2] [2+1+2]

ii) a) What does the number on a NAK frame mean for Selective Repeat ARQ? Give one example. [CO3]

d) Apply CRC algorithm, to determine the checksum and the transmitted frame for the frame 1001, and for the generator polynomial x^3+x+1 . [CO3] [2+3]

iii) a) What is persistence strategy? [CO3]

b) How does CSMA/CD differ from CSMA/CA explain with flowchart. [CO4]

iv) a) What is congestion? [CO4]

c) Explain Token Bucket algorithm for congestion control. [CO4]

d) State the basic difference IPv4 and IPv6. [CO4] [1+2+2]

v) a) Explain token passing for multiple access control. [CO4]

b) Suppose data stream is given 01001110. Encode this stream, using the following

encoding schemes: [CO4]

a. RZ

b. NRZ-I

c. Differential Manchester [2+3]

vi) Consider the given subnet mask 255.128.0.0. Find- [CO5]

a) Number of hosts per subnet

b) Number of subnets if subnet mask belongs to class A

c) Number of subnets if subnet mask belongs to class B

d) Number of subnets if subnet mask belongs to class C

e) Number of subnets if total 10 bits are used for the global network ID

MRINMOY SEN

Signature of the Paper Setter/Moderator

Answer Key:

Group – A

- 1.** (i) b) (ii) a) (iii) a) (iv) c) (v) a) (vi) b)
(vii) a) (viii) c) (ix) a) (x) b) (xi) a) (xii) b)
(xiii) a) (xiv) a) (xv) c) (xvi) a) (xvii) a) (xviii) a)
(xix) d) (xx) a) (xxi) c) (xxii) a) (xxiii) a) (xxiv) a)
(xxv) a) (xxvi) a) (xxvii) b) (xxviii) a) (xxix) a) (xxx) a)

Group – B

- 2.** (i) a) (ii) a) (iii) a) (iv) a) (v) d) (vi) a)
(vii) a) (viii) a) (ix) d) (x) a)

Group – C

- 3.** (i) (ii) (iii) (iv) (v) (vi)