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DOON UNIVERSITY, DEHRADUN
Mid Semester Examination, Even Semester, 2018
Academic Year 2017-18 (Even Semester)
School of Physical Sciences (Computer Science)
Integrated M.Sc. (Computer Science), VI semester
CSC-253: Computer Networks [Backpaper: IV SEM]

Time Allowed 2.00 Hours

Maximum Marks: 30

SECTION : A

(Total Marks: $3 \times 2 = 6$)

Q.1) Which layer act as a interface between user support layer and network support layer?

- (a) Network layer
- (b) Transport layer
- (c) Session layer
- (d) Data link layer

Q.2) Burst error is

- (a) Frame contain only one bit corrupted
- (b) Frame contain more than one bit corrupted
- (c) Frame contain more than one consecutive bit corrupted
- (d) None of the above

Q.3) If m bit message is to be sent by using r bits parity, then length of message to be transmitted is

- (a) m
- (b) r
- (c) $m+r$
- (d) $m+r+1$

Q.4) Frame is a data unit of

- (a) Physical layer
- (b) Data link layer
- (c) Network layer
- (d) Transport layer

Q.5) IPv6 is of

- (a) 32 bit
- (b) 64 bit
- (c) 128 bit
- (d) 256 bit

Q.6) Slotted aloha has maximum throughput _____ pure aloha.

- (a) Equal to
- (b) Twice of
- (c) Half of
- (d) None of the above

SECTION : B (Answer any four)

(Total Marks: $4 \times 3 = 12$)

Q.7) Define types of transmission media.

Q.8) Differentiate between global and local routing protocol.

Q.9) Discuss count to infinity problem.

Q.10) Station A uses 32 byte packets to transmit messages to Station B using a sliding window protocol. The round trip delay between A and B is 80 milliseconds and the bottleneck bandwidth on the path between A and B is 128 kbps. What is the optimal window size that A should use?

Q.11) The reference polynomial used in CRC scheme is $x^4 + x^3 + 1$. A data sequence 1010101010 is to be send. Determine the actual bit string that is to be transmitted.

SECTION : C (Answer any three)

(Total Marks: $3 \times 4 = 12$)

Q.12) Define OSI model with function of each layer.

Q.13) Construct hamming code for bit pattern 1010. Suppose while transmitting, error occurred in 6th bit. Explain how will you detect & correct the error.

Q.14) An organization has IP address 200.17.81.93 using subnet mask 255.255.255.224. Determine the :

- a) Network id
- b) Broadcast address of network
- c) Total no. of subnet and no. of host in each subnet
- d) Second host address and broadcast address of each subnet

Q.15) A 20 Kbps satellite link has a propagation delay of 400 ms. The transmitter employs the “go back n ARQ” scheme with n set to 10. Assuming that each frame is 100 bytes long, what is the maximum data rate possible?