27/3/2018

DOON UNIVERSITY, DEHRADUN

Mid Semester Examination, Even Semester, 2018

Academic Year 2017-18 (Even Semester)

School of Technology

Integrated MCA, IV semester

TMC-253: Computer Networks

Time Allowed 2.00 Hours *Maximum Marks: 30*

SECTION : A **(Total Marks: 3 × 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 × 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 × 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 6^{th} 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?