QPC: RN18001176　　　AR - 18　　　Reg. No. ☐☐☐☐☐☐☐☐☐☐

GIET MAIN CAMPUS AUTONOMOUS GUNUPUR – 765022
B. Tech Degree Examinations, November – 2021
(Seventh Semester)
BEIPC7010 / BECPC7010 – COMPUTER NETWORKS
(AEI & ECE)

Time: 3 hrs　　　　　　　　　　　　　　　　　　　　　　　Maximum; 100 Marks

Answer ALL Questions
The figures in the right hand margin indicate marks.

PART – A: (Multiple Choice Questions)　　　　　　　**(2 x 10 = 20 Marks)**

Q.1. Answer *ALL* questions　　　　　　　　　　　　　　　　[CO#]　[PO#]

a. In cyclic redundancy checking, the divisor is _____ the CRC.　CO1　PO2
   (i) The same size as　　　　　　　(ii) one bit less than
   (iii) one bit more than　　　　　　(iv) none of the above

b. If the frame to be transmitted is 1101011011 and the CRC polynomial to be used　CO2　PO3
   for generating checksum is $x^4 + x + 1$, then what is the transmitted frame?
   (i) 11010110111011　　　　　　　(ii) 11010110111101
   (iii) 11010110111110　　　　　　 (iv) 11010110111001

c. In _____ congestion control, policies are applied to prevent congestion before　CO1　PO2
   it happens.
   (i) open-loop　　　　　　　　　　(ii) closed-loop
   (iii) either (a) or (b)　　　　　　　(iv) neither (a) nor (b)

d. "Parity bits" are used for which of the following purposes?　CO1　PO1
   (i) Encryption of data　　　　　　(ii) To transmit faster
   (iii) To detect errors　　　　　　 (iv) To identify the user.

e. The minimum size of the process data that can be encapsulated in a User datagram　CO1　PO1
   Protocol (UDP), datagram would be:
   (i) 0 bytes　　　　　　　　　　　(ii) 4 bytes
   (iii) 8 bytes　　　　　　　　　　 (iv) 28 bytes

f. Electronic mail uses which Application layer protocol?　CO1　PO1
   (i) SMTP　　　　　　　　　　　　(ii) HTTP
   (iii) FTP　　　　　　　　　　　　(iv) SIP

g. In the stop-and-wait method of flow control, the sender sends _____ at a time　CO1　PO1
   (i) A variable number of frames　　(ii) Only one frame
   (iii) A set number of frames　　　　(iv) Two frames

h. HTTP client requests by establishing a _____ connection to a particular port　CO2　PO2
   on the server.
   (i) User datagram protocol　　　　(ii) Transmission control protocol
   (iii) Border gateway protocol　　　(iv) Domain host control protocol

i. In Go-Back-N window, when the timer of the packet times out, several packets have　CO3　PO3
   to be resent even some may have arrived safe. Whereas in Selective Repeat window,
   the sender resends _____
   (i) Packet which are not lost　　　 (ii) Only those packets which are lost or
   　　　　　　　　　　　　　　　　　　corrupted
   (iii) Packet from starting　　　　　(iv) All the packet

j. On a simplex data link, which of the following is a possible error recovery　CO2　PO2
   technique?
   (i) Backward error correction (BEC)　(ii) The use of hamming codes
   (iii) Automatic Repeat Request (ARQ)　(iv) Downward error correction (DEC)

PART – B: (Short Answer Questions)   **(2 x 10 = 20 Marks)**

Q.2. Answer *ALL* questions

		[CO#]	[PO#]
a.	Compare and contrast CSMA/CD with CSMA/CA	CO1	PO2
b.	Define ICMP? What are the advantages of ICMP over IP?	CO2	PO1
c.	Change the following IPv4 addresses from binary notation to dotted-decimal notation. (i). 10000001 00001011 00001011 11101111 (ii). 11000001 10000011 00011011 11111111	CO2	PO2
d.	How is the preamble field different from the SFD field?	CO1	PO1
e.	If an Ethernet destination address is 07:01:02:03:04:05, what is the type of the address (unicast, multicast, or broadcast)?	CO3	PO1
f.	What do you mean by data communication? Mention the factors on which effectiveness of data communication depends?	CO2	PO2
g.	What is the role of the address field in a packet traveling through a datagram network?	CO1	PO2
h.	Explain the working of Domain name system (DNS).	CO1	PO1
i.	What can you say about the TCP segment in which the value of the control field is one of the following? (i). 000000 (ii). 000001 (iii). 010001	CO2	PO2
j.	What is the difference between a port address, a logical address, and a physical address?	CO1	PO2

PART – C: (Long Answer Questions)   **(15 x 4 = 60 Marks)**

Answer *ALL* questions

		Marks	[CO#]	[PO#]
3.a.	What do you mean by Transmission media? Describe different types of transmission media with advantages and disadvantages of each?	10	CO1	PO2
b.	Why does a datagram network need only end-to-end addressing during the data transfer phase, but no addressing during the setup and teardown phases?	05	CO2	PO2
	(OR)			
c.	What do you mean by flow control and Error control? Describe different types of flow control and Error control mechanisms with neat and clean diagram?	10	CO2	PO1
d.	Define Scrambling and give its purpose.	05	CO3	PO2
4.a.	Explain each type of networking / internetworking devices in data communication.	10	CO1	PO3
b.	What is the difference between Wifi and Lifi?	05	CO1	PO2
	(OR)			
c.	Describe the functions of each layer in the OSI model.	10	CO2	PO2
d.	Define SMTP? Describe how it works?	05	CO1	PO1
5.a.	What is ATM? Describe the architecture and various layers of Frame relay?	10	CO1	PO2
b.	What is HTTP? Describe different types of HTTP?	05	CO2	PO1
	(OR)			
c.	What is IPv4 and IPv6? What are the disadvantages of IPv4? Describe IPv6 packet format with neat and clean diagram? What are the advantages of IPv6?	10	CO3	PO2
d.	Explain any two protocols related to e-mail.	05	CO1	PO2
6.a.	Explain the concept of block coding with various schemes.	10	CO3	PO2
b.	How does the Ethernet address lA:3B:4C:6D:2E:1F appear on the line in binary?	05	CO2	PO2
	(OR)			
c.	Compare and contrast the Go-Back-N ARQ Protocol with Selective-Repeat ARQ.	10	CO1	PO1
d.	What is the difference between a unicast, multicast, and broadcast address?	05	CO1	PO2

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