UNIVERSITY OF PETROLEUM AND ENERGY STUDIES
Online End Semester Examination, December 2020

Course: Computer Networks   **Semester: III**
Program: BCA - IoT   **Time 03 hrs.**
Course Code: CSBC 2001   **Max. Marks: 100**

SECTION A

1. Each Question carries 5 Marks.
2. Instruction: Attempt all the questions.

S. No.		Marks	CO
Q 1	What do you mean by congestion control? Explain in brief.	5	CO5
Q 2	Compare and contrast between Analog and digital signal.	5	CO1
Q 3	Differentiate between Wired and Wireless Networks in detail.	5	CO1
Q 4	What is DNS? Differentiate between recursive and iterative queries.	5	CO5
Q 5	Explain ARQ Techniques.	5	CO3
Q 6	Explain HTTP with an example.	5	CO5

SECTION B

1. Each Question carries 10 marks.
2. Instruction: Write short / brief notes.

Q 7	Use the given Graph and find out the shortest distance from Node A to Node G with Distance vector routing. You have to write the systematic process.	10	CO4
Q 8	What is switched networks? Distinguish between Circuit Switched and Packet Switched networks with diagram.	10	CO1
Q 9	What is ALOHA? Compare and contrast between Pure ALOHA vs. Slotted ALOHA. Write the formula to calculate throughput of Pure and slotted ALOHA. A pure ALOHA network transmits 200-bit frames on a shared channel of 200 kbps. What is the throughput if the system (all stations together) produces a) 1000 frames per second b) 500 frames per second c) 250 frames per second	10	CO3
Q 10	Illustrate OSI reference model with a neat diagram by explaining the functions of different layers.	10	CO2

Q 11	An organization has given you the below IP address and Subnet Mask IP Addressing 200.130.7.10 Subnet mask 255.255.255.240 As a Network Administrator, you have to find out the Network Address, Usable host range and broadcast address in the given format.	10	CO4

Network Address	Usable Host Range	Broadcast Address

SECTION-C

1. Each Question carries 20 Marks.
2. Instruction: Write long answer.

Q 12	a. Obtain the 4-bit CRC code for the data bit sequence 10011011100 using the polynomial x^4+x^2+1.	10	
	b. Explain the term checksum in reference to error detecting codes with suitable example.	10	
	OR		CO3
	a. Encode a binary word 1010110 into the even parity hamming code. Let us assume the even parity hamming code is transmitted, and the received code is (10000110001). You have to detect and correct the error.	10	
	b. What is an error? What are the different types of errors, its detection and correction methods? Explain all with suitable example.	10	