
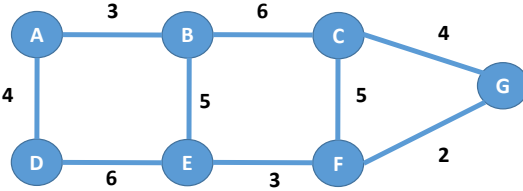


Name:			
Enrolment No:			
<b>UNIVERSITY OF PETROLEUM AND ENERGY STUDIES</b> <b>End Semester Examination, December 2022</b>			
<b>Course: Computer Networks</b> <b>Program: MCA (AIML/IoT/Cyber Security)</b> <b>Course Code: CSEG 8004</b>		<b>Semester : III</b> <b>Time : 03 hrs.</b> <b>Max. Marks: 100</b>	
<b>Instructions:</b>			
<b>SECTION A</b> <b>(5Qx4M=20Marks)</b>			
S. No.		Marks	CO
Q 1	Discuss congestion in networks? What are the methods available for Collision avoidance?	4	CO1
Q 2	Describe the differences between Bit rate and Baud rate and state the relation between them.	4	CO1
Q 3	List the functionalities of Multiplexing and De multiplexing	4	CO4
Q 4	Classify CSMA/CD and CSMA/CA?	4	CO2
Q 5	Illustrate the use of subnetting with example.	4	CO3
<b>SECTION B</b> <b>(4Qx10M= 40 Marks)</b>			
Q 6	Write a short note on the following: a) HDLC b) Stop and wait protocol	10	CO2
Q 7	Compare and contrast between circuit, message, packet switching.	10	CO1
Q 8	Obtain the 4-bit CRC code for the data bit sequence 10011011100 using the polynomial $x^4+x^2+1$ .  <b>OR</b> 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	CO2
Q 9	Describe the OSI Reference model in detail.	10	CO1

**SECTION-C**  
**(2Qx20M=40 Marks)**

Q 10	<p>a) Explain in brief about DNS. b) Explain the architecture of WWW. Discuss client and server-side functionality of this Architecture. Explain the two scenarios of architecture of E-Mail.</p>	<b>20</b>	<b>CO4</b>			
Q 11	<p>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.</p> <div style="text-align: center;">  </div> <p align="center"><b>OR</b></p> <p>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.</p> <table border="1" data-bbox="240 1075 1092 1129" style="width: 100%; border-collapse: collapse;"> <tr> <td style="width: 33%; padding: 5px;"><b>Network Address</b></td> <td style="width: 33%; padding: 5px;"><b>Usable Host Range</b></td> <td style="width: 33%; padding: 5px;"><b>Broadcast Address</b></td> </tr> </table>	<b>Network Address</b>	<b>Usable Host Range</b>	<b>Broadcast Address</b>	<b>20</b>	<b>CO3</b>
<b>Network Address</b>	<b>Usable Host Range</b>	<b>Broadcast Address</b>				