UNIVERSITY OF PETROLEUM AND ENERGY STUDIES
End Semester Examination, March 2019

Programme Name: B.Tech-Mechatronics	**Semester**	: 8th
Course Name : Computer Networks	**Time**	: 03 hrs
Course Code : CSEG-4002	**Max. Marks : 100**	
Nos. of page(s) : 01		

Instructions:

SECTION A (Attempt all 5 Questions)-20 Marks

S. No.		Marks	CO
Q 1.	Discuss TCP layer role in TCP Model used for Internet Network?	4	CO1
Q2.	Draw HTTP protocol format for data communication.	4	CO5
Q3.	How collisions get reduced in Slotted aloha than Pure Aloha?	4	CO2
Q4.	Describe a technical contrast between Go back N and Selective repeat Protocols.	4	CO4
Q5.	How link state routing is better than Distance vector Routing?	4	CO4

SECTION B (Attempt all 4 Questions)-40 Marks

Q 6.	What are protocol data Units used in OSI layers, how they are encapsulated in functioning?	10	CO1
Q7.	Generate codeword for given dataword 1001101 using hamming code. And assume error has occurred at 3rd bit position (1 is replaced with 0), then detect and correct this error using hamming error correcting codes. OR	10	CO2
Q7.	If a divisor in form of polynomial is x^4+x+1 and data to send in network is 1101011011. What will be the CRC?	10	CO2
Q8.	As you are an administrator of a network company, you are allocated an IP address of 192.10.1.0. You have 3 Departments Sales with 110 users, Purchase department 55 Users and Management department with 5 users. You need to create subnets for all departments and allocate valid IP address to users.	10	CO3
Q9.	Design datagram packet format and write its fields.	10	CO4

SECTION-C-40 Marks

Q 10.	What is Cryptography? Differentiate between Symmetric and Asymmetric Cryptography. How Digital signature works Explain	3+7+10	CO5
Q11	Define working of Distant vector Routing? How it generates the shortest path among intermediate nodes, apply it in a suitable example. **OR**	20	CO3
Q11.	What is Link State routing How it works? Explain with the help of suitable example.	20	CO3

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SECTION A (Attempt all 5 Questions)-20 Marks		
S. No.		Marks	CO
Q 1.	How Network and Transport Layers work collaboratively in OSI Model?	4	CO1
Q2.	How DNS protocol works for data communication.	4	CO5
Q3.	What is Class full IP address and their ranges?	4	CO3
Q4.	How piggybacking offers Efficient transmission.	4	CO4
Q5.	How is Link State routing is better than Distance Vector Routing?	4	CO4
SECTION B (Attempt all 4 Questions)-40 Marks			
Q 6.	Differentiate technically between Aloha and Slotted Aloha protocols. Generate their throughput expressions also	10	CO2
Q7.	Give TCP packet format and write about its all fields.	10	CO4
Q8.	What is count to infinity Problem? And How it is resolved?	10	CO4
Q9	What are protocols data units used in layers of OSI model? Show their encapsulation and De-capsulation? **OR**	10	CO1
Q9.	What is role of routers and Gateways in a WWW network? What is significance of TTL and its maximum value.	10	CO1
SECTION-C-40 Marks			
Q 10.	What is Cryptography? Differentiate between Symmetric and Asymmetric Cryptography. How Digital signature works Explain	3+7+ 10	CO5
Q11.	Define working of Distant vector Routing? How it generates the shortest path among intermediate nodes, apply it in a suitable example **OR**	20	CO3
Q11.	What are the different approaches of packet switching? Explain with suitable diagram & Compare on the basis of efficiency and delay	20	CO3