UNIVERSITY OF PETROLEUM AND ENERGY STUDIES
End Semester Examination, December 2018

Course: IPv6 Analysis & its Applications   Semester: 6th
Programme: B.Tech CSE+IoT   Course Code: ECEG 3010
Time: 03 hrs.   Max. Marks: 100
Instructions: Attempt all questions

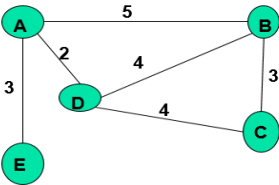| SECTION A			
S. No.		Marks	CO
Q 1	Why do we need LowPAN? Mention its characteristics.	4	CO1
Q.2	Characterize the different terminologies for RFC 7252.	4	CO1
Q.3	Why do we need Loopback address?How do we represent it in IPv6?	4	CO2
Q.4	Differentiate between IPv6 and IPv4 by giving minimum 4 differences.	4	CO3
Q.5	Why do we need TTL?	4	CO4
SECTION B			
Q.5	Draw the frame format of IPv6 and explain all the fields thereon.	10	CO1
Q.6	How Loop detection & avoidance is done in RPL?	10	CO2
Q.7	Draw the CoAP message format and explain all the fields thereon.	10	CO4
Q.8	Why do we need Neighbor discovery protocol? Discuss the different type of messages in NDP with the help of suitable diagrams. **OR** Why do we need ICMP? Discuss different error messages for ICMP in detail.	10	CO3
SECTION-C			
Q .10	Draw the 6LowPAN architecture and explain the communication involved in it.	20	CO3
Q.11	Draw the IPv4 frame format and explain all fields thereon. **OR** Apply the RIPNG protocol to following figure and categorize the stages involved. 	20	CO1

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SECTION A

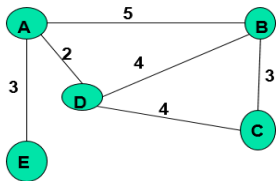| S. No.		Marks	CO
Q 1	Classify various reasons to move from IPv4 to IPv6.	4	CO1
Q.2	Differentiate between transient and solicited node address in IPv6.	4	CO2
Q.3	Mention various features of CoAP protocol.	4	CO4
Q.4	Discuss various characteristics of LowPAN device.	4	CO3
Q.5	Why do we need unspecified address in IPv6?	4	CO2

SECTION B

Q.6	Draw the frame format of IPv6 and explain all the fields thereon.	10	CO1
Q7	Why do we need NAT protocol? Draw the diagram for NAT in IPv6.	10	CO2
Q.8	Draw the ICMPv6 message format and explain all fields thereon. Also mention different query messages present in it.	10	CO3
Q.9	How loop avoidance is done in RPL? Explain loop avoidance with the help of suitable diagrams. **OR** Draw and explain the Request methods used in CoAP message .	10	CO4

SECTION-C

Q.11	Apply OSPFv3 protocol to the following figure and categorize the stages involved. 	20	CO2
Q.12	Draw the frame format of IPv4 and explain all the fields thereon. **OR** Why do we need Neighbor Discovery Protocol? Explain the different messages for NDP.	20	CO1,CO3