KUMARAGURU
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B.E DEGREE EXAMINATIONS: DEC 2022

(Regulation 2018)

Fifth Semester

ELECTRONICS AND COMMUNICATION ENGINEERING

U18ECI5203: Communication Networks

COURSE OUTCOMES

CO1:   Describe network topologies, protocols and models (K2).

CO2:   Demonstrate and analyse data link layer protocols and LAN standards (K3,S4).

CO3:   Analyze routing algorithms and methods to improve QoS. (K3,S4)

CO4:   Summarize transport layer protocols and congestion controls methods.(K2)

CO5:   Describe various application layer services. (K2)

CO6:   Implement and Analyze cryptographic and security techniques. (K3,S4)

Time: Three Hours   **Maximum Marks: 100**

Answer all the Questions:-
**PART A (10 x 2 = 20 Marks)**
(Answer not more than 40 words)

1. Consider that the Sender A is using ASCII encoding and the receiving station is using EBCDIC encoding. Select the layer responsible for the translation.	CO1	[K_3]
2. List the functions of Datalink layer.	CO1	[K_1]
3. Outline the advantages and disadvantages of piggy backing.	CO2	[K_2]
4. Compare the standards of IEEE 802.4 with IEEE 802.5.	CO2	[K_2]
5. Identify the error in the following IPV4 addresses: a) 75.45.301.14 b)221.34.7.8.20	CO3	[K_3]
6. Identify the class of the following IP addresses: (a) 192.168.2.0 (b) 127.0.0.0	CO3	[K_3]
7. Compare SMTP with FTP.	CO5	[K_2]
8. Recall few applications that have UDP as its underlying protocol.	CO4	[K_1]
9. List few potential security threats.	CO6	[K_1]
10. Outline different substitution techniques.	CO6	[K_1]

Answer any FIVE Questions:-
PART B (5 x 16 = 80 Marks)
(Answer not more than 400 words)

11.		With neat sketch explain the functions of each layer of the OSI model and compare OSI with TCP/IP model.	16	CO1	[K₂]

Rewriting properly:

11. With neat sketch explain the functions of each layer of the OSI model and compare OSI with TCP/IP model. 16 CO1 [K$_2$]

12. a) Examine the role of CSMA/CA in hidden terminal and exposed terminal problem in IEEE 802.11. 10 CO2 [K$_2$]

b) Analyze the operation of Go Back N with suitable example. 6 CO2 [K$_2$]

13. With necessary diagrams, explain the Connectionless transport protocol in detail. 16 CO4 [K$_2$]

14. People prefer the more mnemonic host name identifier, while routers prefer fixed-length, hierarchically structured IP addresses. In order to reconcile these preferences, we need a directory service that translates host names to IP addresses. Show the operation of the translation with an example. 16 CO5 [K$_4$]

15. Use Dijkstra's algorithm to find the shortest path from one node to every other node in the network. Construct the final table. Also explain the algorithm with necessary steps. 16 CO3 [K$_3$]
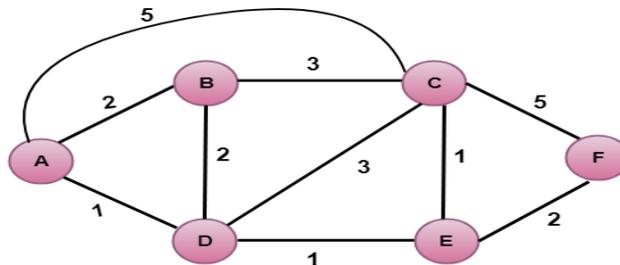
16. a) With neat sketch, explain the encryption process of DES algorithm. 8 CO6 [K$_2$]

b) Illustrate the encryption, decryption and key generation process of RSA algorithm with example. 8 CO6 [K$_3$]

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