PRACTICE PAPER 2

Computer Network

Paper / Subject Code: 48891

Time: 3 hours   **Max. Marks: 80**

N.B. (1) Question one is Compulsory.
     (2) Attempt any 3 questions out of the remaining.
     (3) Assume suitable data if required.

Q. 1

a) List and describe the different network topologies with neat diagrams. **[05 marks]**

b) Describe the different guided transmission medias used in the network. **[05 marks]**

c) Enumerate the main responsibilities of the Data Link Layer (DLL). **[05 marks]**

d) Explain Repeater, Hub, Bridge, Switch & Routers. **[05 marks]**

Q. 2

a) Explain TCP/IP reference model with a neat diagram and compare it with OSI reference model. **[10 marks]**

b) What are the different DLL design issues? Describe them in brief. **[10 marks]**

Q. 3

a) What is ALOHA? Explain Pure ALOHA and Slotted ALOHA in detail with throughput analysis. **[10 marks]**

b) Explain IPv4 header format with a neat diagram. **[10 marks]**

Q. 4

a) Consider an error detecting CRC with the generator 10101. (i) Compute the transmitted bit sequence for the data bit sequence 110010101. (ii) The string of bits 110011001100 is received. Check whether there are errors in the received code word. **[10 marks]**

b) Explain Link State Routing (Dijkstra's algorithm) as shortest path routing with suitable example. **[10 marks]**

Q. 5

a) Explain Three Way Handshaking for connection establishment and TCP connection management & release with suitable diagrams. **[10 marks]**

b) What is subnetting? Given the class C network 192.168.10.0, use the subnet mask 255.255.255.192 to create subnets and answer: (i) Number of subnets created (ii) Hosts per subnet (iii) IP address of first host, last host and broadcast address of each subnet. **[10 marks]**

Q. 6

Write a short note on:

a) Sliding Window Protocol **[05 marks]**

b) OpenFlow messages **[05 marks]**

c) Cisco SONA Architecture **[05 marks]**

d) Static routing vs Dynamic routing **[05 marks]**

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