



Date: 28/12/2018

Time: 4.15pm – 5.15pm

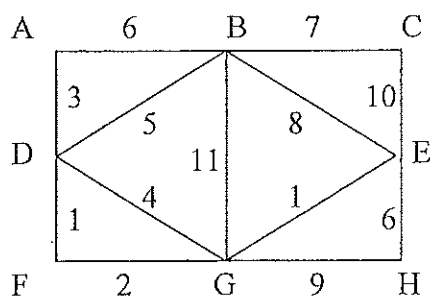
Answer All Questions.

QUESTION 1

- 1.1) What is the advantage of *ring topology* when comparing with a *bus topology*?
- 1.2) List the differences between *10Base2* and *10Base5* network cable standards.
- 1.3) Give the color codes of the 568A standard UTP network cable.
- 1.4) Using the IP address 185.11.20.31 and the network mask 255.255.248.0,
 calculate (i) network address and the subnet mask
 (ii) broadcast address
 (iii) first host and the last host addresses of the network.

QUESTION 2

- 2.1) List the layers and the layer numbers of the OSI model. State two (2) protocols operate in the layer 3 of the OSI model.
- 2.2) What are the differences between 1-persistent simplex protocol and 0.5-persistent simplex protocol? Which protocol has the highest throughput?
- 2.3) Calculate the shortest path from A to E using Dijkstra shortest path algorithm using the topology diagram given below. Show your steps in successive diagrams.



- 2.4) An institution has a head office in Colombo and two branches in Kandy and Matara. The speed of the connectivity to the Internet in Colombo, Kandy and Matara are 10Mbps, 8Mbps and 6Mbps respectively. The speed of the Internet connectivity of Matara reduces to 2Mbps for first 30 seconds in every 2 minutes time due to a technical fault. Calculate the time required to send a 4 Gigabyte file from Colombo to Kandy. State all the assumptions and show the calculations.

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