Hall Ticket Number:

Code No. : 5134

VASAVI COLLEGE OF ENGINEERING *(Autonomous)*, HYDERABAD
M.E. (ECE: CBCS) I-Semester Main Examinations, Jan./Feb.-2017

(Communication Engineering & Signal Processing)

Data and Computer Communication Networks

Time: 3 hours

Max. Marks: 70

*Note: Answer ALL questions in Part-A and any FIVE from Part-B*

Part-A (10 × 2 = 20 Marks)

1. Differentiate between TCP/IP and OSI Model.

2. Compare the channel capacity in bps, if the spectrum of the channel is between 1 MHZ and 3 MHZ and SNR (dB) is 32.

3. Sketch the DS-1 frame format.

4. List any two differences between Go-Back N and selective repeat protocols.

5. Compare blocking and non-blocking switches.

6. Describe routing in Packet Switching.

7. Explain loop resolution in bridges.

8. Calculate the number of links needed to connect 'n' nodes in a mesh topology.

9. Analyze the layers of TCP/IP that are related to flow control mechanism.

10. Illustrate the Proxy servers that protect the computer networks.

Part-B (5 × 10 = 50 Marks)
(All bits carry equal marks)

11. a) Describe in detail about ISO reference model. Explain the basic functionality of each layer.

    b) Discuss the significance of transport layer and internet layer in TCP/IP and analyze the TCP/IP addressing concepts.

12. a) Compare and contrast stop and wait and sliding window protocol in detail with an illustration.

    b) Describe HDLC protocol with an example.

13. a) Discuss Shortest path routing and flooding with a suitable example.

    b) Apply Bellman-Ford algorithm to find the shortest path from A to H in the network shown in the figure.
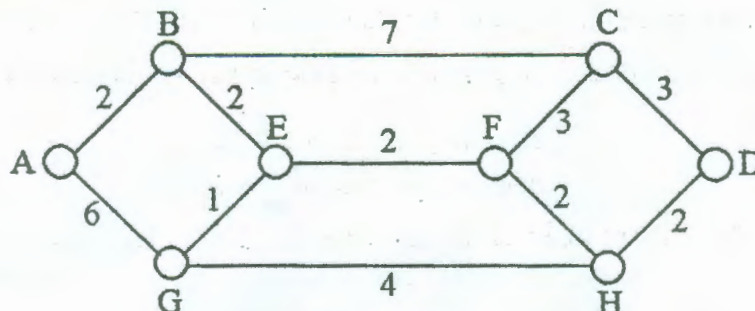
14. a) Describe how channel access is done in Wireless LANs.

    b) Discuss Architecture and services of IEEE 802.11

15. a) Discuss the congestion control and QoS in ATM networks.

    b) Draw the TCP header and explain the significance of each field.

16. a) Compare TCP and UDP.

    b) Illustrate the architecture and frame format of SONET with an example.

17. Answer any *two* of the following:

    a) SS7 protocol Architecture

    b) Explain MAC in detail

    c) Enumerate on the various reasons that are present behind the transition from IPV4 to IPV6.

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