Dr. Babasaheb Ambedkar Technological University, Lonere – 402 103

Department of Computer Engineering

End Semester Examination, May 15, 2019

Subject: Computer Networks (CE602) Sem: VI Dur: 3 Hrs. Marks: 60

Instructions to the Students:

1. Question No. 1 is compulsory.
2. Attempt any ***FIVE*** Questions from 2 to 7.
3. Illustrate your answers with neat sketches, diagrams etc. wherever necessary.
4. Necessary data is given in the respective question. If such data is not given, it means that the knowledge of that data is a part of examination.
5. If some part or parameter is noticed to be missing, you may appropriately assume it and should mention it clearly.

Q. 1 Solve the following questions (10 marks)

a) What is TCP/IP model? A 100 Bytes message is sent through Internet using the TCP/IP protocol suite. If the protocol adds a 10-byte header at each layer, what is the efficiency of the system?

b) Compare and contrast the delays in connectionless and connection-oriented services. Which service creates less delay if the message is large? Which service creates less delay if the message is small?

c) How much time it will take to transmit minimum Ethernet frame over DS1 leased circuit?

d) What is computer networks? Enlist four uses of computer networks.

Q. 2 Solve the following questions (2 x 5 marks)

a) What are the different delays/latency in the network? Explain each one with brief discription and formula.

b) What is IEEE 802.11 Ethernet WiFi technology? Explain the fields available in the IEEE 802.11 frame format.

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Q. 3 Solve the following questions (2 x 5 marks)

a) Write short note on

i) Bluetooth technology

ii) RFID technology

iii) FDDI network

b) What is IP packet format? Can the value of the header length in an IP packet be less than 5? When is it exactly 5?

Q. 4 Solve the following questions (2 x 5 marks)

a) What is importance of error detection at data link layer? Explain in detail how CRC is used for error detection with suitable example.

b) If the bandwidth of the link is 1.5 Mbps, RTT is 45 msec and packet size is 1 KB, then find the link utilization in stop and wait protocol.

Q. 5 Solve the following questions (2 x 5 marks)

a) A 20 Kbps satellite link has a propagation delay of 400 ms. The transmitter employs the "**Go Back N**" protocol with N set to 10. Assuming that each frame is 100 Bytes long, what is the throughput of GBN protocol?

b) What is CSMA/CD protocol? Explain in brief working of the CSMA/CD protocol.

Q. 6 Solve the following questions (2 x 5 marks)

a) What is framing in network? Explain byte stuffing framing technique with suitable example.

b) What is socket? Explain the socket, bind and listen system call with suitable example.

Q. 7 Solve the following questions (2 x 5 marks)

a) Enlist and explain three network which are available in the Internet

b) What are the special IP addresses? Explain each address with simple network diagram and also mention whether it can be used as source or destination address.

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