Please check that this question paper contains 9 questions and 2 printed pages within first ten minutes.

MORNING

[Total No of Questions: 09] [Total No. of Pages: 02.]

Uni. Roll No. ..... 06 JAN 2023

Program: B.Tech. (Batch 2018 onward)

Semester: 3rd

Name of Subject: Computer Networks

Subject Code: PCCS-102

Paper ID: 16011

Scientific calculator is Allowed

Time Allowed: 03 Hours **Max. Marks: 60**

NOTE:

1) Parts A and B are compulsory
2) Part-C has Two Questions Q8 and Q9. Both are compulsory, but with internal choice
3) Any missing data may be assumed appropriately

Part – A **[Marks: 02 each]**

Q1.

a) What are the three criteria necessary for an effective and efficient Networks ?

b) A signal with 200 milliwatts power passes through 10 devices, each with an average noise of 2 microwatts. What is the SNR and SNRdb?

c) Differentiate between LAN and VLAN

d) Write the use of spread spectrum in bandwidth utilization?

e) What is RPC?

f) What is the significance of topologies?

Part – B **[Marks: 04 each]**

Q2. Given the data word 101001111 and the divisor 10111, show the generation of the CRC code word at the sender site (using binary division).

Q3. Explain in detail about the Simplex Stop and Wait protocol.

Q4. Explain the principle difference between connection-oriented communication and connection-less communications

Q5. With an example, explain any routing algorithm used in computer networks.

Q6. Explain the TCP and UDP header format with purpose of each field.

Q7. How TELNET works? Explain.

Part – C

[Marks: 12 each]

Q8. Discuss the two approaches of packet switching with neat diagrams. Also, Differentiate between circuit switching and packet switching. **[8+4]**

OR

Classify the media access protocols. Differentiate between random access protocols and controlled access protocols. Discuss the various strategies in CSMA/CA that are used to avoid collision. **[2+4+4]**

Q9. Explain transport layer protocols- TCP and UDP in terms of their features , header format and applications in detail (with diagram if any).

OR

Explain the various addresses in used in each layer of TCP/IP. Explain the IP header Format (with diagram if any). Also, Differentiate between IPv4 and IPv6.

[4+4+4]

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