

**SEMESTER EXAMINATION, 2022 – 23**  
**3<sup>rd</sup> year, B. Tech– Computer Science & Engg.**  
**Computer Network**

**Duration: 3:00 hrs****Max Marks: 100**

**Note:** - Attempt all questions. All Questions carry equal marks. In case of any ambiguity or missing data, the same may be assumed and state the assumption made in the answer.

Q 1.	<p>Answer any four parts of the following.</p> <p>a) What do you mean by layered network architecture. Explain using example.  b) Explain what do you mean by CSMA protocol and its usage.  c) Describe the working of stop and wait protocol.  d) Illustrate working of parity checking algorithm and what it is used for?  e) Differentiate between WWW and HTTP.  f) Explain header format of UDP using diagram.</p>	5x4=20
Q 2.	<p>Answer any four parts of the following.</p> <p>a) Differentiate between connectionOriented and connection-less services.  b) Differentiate between ARP, RARP and GARP protocol.  c) Explain working of Checksum algorithm using an example.  d) Explain working of datalink layer.  e) What do you mean by SNMP. Explain its usage.  f) Explain TCP and its header format using labelled diagram.</p>	5x4=20
Q 3.	<p>Answer any two parts of the following.</p> <p>a) Explain working of OSI model with a diagram of OSI model and its layers  b) Differentiate between IPv4 and IPv6 addressing using a diagram.  c) Explain CRC error detection using example of frame as 100111001 and generator 1011. Taking reference of source and sending side, explain how the process works.</p>	10x2= 20
Q 4.	<p>Answer any two parts of the following.</p> <p>a) You work for a large communications corporation named GlobeComm which has been assigned a Class A network address. Currently, the company has 1,000 subnets in offices around the world. You want to add 100 new subnets over the next three years, and you want to allow for the largest possible number of host addresses per subnet. Which subnet mask would you choose?  b) Explain ALOHA and its types. Also compare their performance.  c) NuTex Corporation has been assigned the Class B network address 165.87.0.0. NuTex needs to divide the network into eight subnets. What subnet mask should be applied to the network to provide the most hosts per subnet?</p>	10x2= 20
Q 5.	<p>Answer any two parts of the following.</p> <p>a) Explain Dijkstra's Algorithm using an example. Also explain why it is termed as least cost routing algorithm?  b) Illustrate Bellman-ford algorithm using an example. Also explain why it is termed as distance vector routing protocol?  c) Describe sliding window protocols and their types using an example.</p>	10x2= 20