DR. BABASAHEB AMBEDKAR TECHNOLOGICAL UNIVERSITY, LONERE

Supplementary Summer 2024

Course: B. Tech.   **Branch: Computer Engineering & Allied**   **Semester: VI**

Subject Code & Name: BTCOC602_Y20   Computer Networks

Max Marks: 60   **Date: 15/06/2024**   **Duration: 3 Hr.**

Instructions to the Students:

1. *All the questions are compulsory.*
2. *The level of question/expected answer as per OBE or the Course Outcome (CO) on which the question is based is mentioned in ( ) in front of the question.*
3. *Use of non-programmable scientific calculators is allowed.*
4. *Assume suitable data wherever necessary and mention it clearly.*

		(Level/CO)	Marks
Q.1	**Solve Any Two of the following.**		**12**
A)	Explain the OSI model in detail. Discuss the difference between the OSI model and TCP/IP model with their significance in networking.	**Understand**	**6**
B)	Why is network standardization crucial for global communication? Identify key organizations involved in the standardization process and their roles.	**Understand**	**6**
C)	Discuss the comparison of connection-oriented and connectionless communication.	**Remember**	**6**
Q.2	**Solve Any Two of the following.**		**12**
A)	Explain the frame structure of Ethernet 802.3 in detail.	**Understand**	**6**
B)	Explain the Wi-MAX in detail, and how does it differ from Wi-Fi?	**Understand**	**6**
C)	Describe the main components of an RFID system and their functions.	**Understand**	**6**
Q.3	**Solve Any Two of the following.**		**12**
A)	Explain the concept of framing in the Data Link Layer. Describe the various methods of framing used in the Data Link Layer.	**Understand**	**6**
B)	Explain flow control in the Data Link Layer. What are the challenges associated with implementing flow control in the Data Link Layer?	**Understand**	**6**
C)	What are error-correcting codes? How do they differ from error-detecting codes?	**Remember**	**6**
Q.4	**Solve Any Two of the following.**		**12**
A)	Explain the structure of the IPv6 address. Discuss the difference between IPv4 and IPv6.	**Understand**	**6**
B)	Explain the Distance Vector Routing Algorithm in detail.	**Understand**	**6**
C)	What is network congestion? Discuss the concept of load shading in congestion prevention.	**Understand**	**6**

Q.5   **Solve Any Two of the following.**   **12**

A)   Write a short note on: i) DNS   ii) HTTP   **Remember**   **6**

B)   Explain the purpose of firewalls in network security. What factors should be   **Understand**   **6**
        considered when designing a firewall policy?

C)   Describe the principles of public key and private key cryptography. How they   **Understand**   **6**
        differ from each other?