

DR. BABASAHEB AMBEDKAR TECHNOLOGICAL UNIVERSITY, LONERE

Regular End Semester Examination – Summer 2022

Course: B. Tech. Branch : Computer Science and Engineering Semester : VI

Subject Code & Name: Computer Networks (BTCOC602)

Max Marks: 60

Date:17/08/2022

Duration: 3.45 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.

(BT Level) Marks

Q.1 Solve Any Two of the following. 12

- A) Explain network software with respect to protocol hierarchy and design issue for layer? Understand 6
- B) Compare connection oriented and connectionless protocol? Understand 6
- C) Define following performance metrics
Bandwidth ,Latency, data rate, Delay -bandwidth product and throughput Remember 6

Q.2 Solve Any Two of the following. 12

- A) Compare token ring and FDDI with their frame format. Application 6
- B) With reference of ATM answer the following
a. How is an ATM virtual connection identified?
b.. Name the ATM layers and their functions.
c. Why does ATM use small, fixed-length cells? Understand 6
- C) Explain in brief 802.11 architecture and protocol stack? Understand 6

Q.3 Solve Any Two of the following. 12

- A) Illustrate the services provided to the network layer by the data link layer. Understand 6
- B) Calculate CRC code for Message “11101010111101010100011” if divisor polynomial is $X^5 + X^3 + X^2 + 1$ Apply 6
- C) In a block of addresses, we know the IP addresses of two hosts are 25.34.12.56/16, 182.44.82.16/26. What are the first address (network address) and the last address (limited broadcast address) in each of these blocks? Apply 6

Q.4 Solve Any Two of the following. 12

- A) The following is a dump of a TCP header in hexadecimal format.
(05320017 00000001 00000000 500207FF 00000000) ₁₆ Apply 6
- a. What is the source port number and the destination port number?

- c. What the sequence number?
- d. What is the acknowledgment number?
- e. What is the length of the header?
- f. What is the type of the segment?
- g. What is the window size?

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| B) | Compare IPv4/IPv6 protocols? | Understand | 6 |
| C) | Illustrate with example leaky bucket and token bucket algorithms for traffic shaping? | Understand | 6 |

Q. 5 Solve Any Two of the following. 12

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| A) | Explain types of DNS messages? | Understand | 6 |
| B) | Compare SMTP and POP Protocols. | Understand | 6 |
| C) | Illustrate with example public key and private key cryptography? | Understand | 6 |

*** End ***