

GANPAT UNIVERSITY

B. TECH. SEMESTER: V (COMPUTER ENGINEERING / INFORMATION TECHNOLOGY)

REGULAR EXAMINATION NOV-DEC 2015

2CE504 / 2IT504 : COMPUTER NETWORKS

Time: 3 Hours]

[Total Marks: 70

- Instruction:** 1: Figures to right side indicate full marks.
 2: Each section should be written in a separate answer book.
 3: Assume suitable data if required.
 4: Be precise and to the point in your answer.

Section - I

- Que. - 1** [A] Explain the at least three basic network criteria that are important for the good functioning of the overall network. 04
- [B] Explain following terms: (1) international standards for network protocols (2) WAN 04
- [C] Why framing is required at data link layer? Explain bit and byte oriented framing techniques. 04

OR

- Que. - 1** [A] Differentiate: Computer network and Distributed System 04
- [B] What is OSI model? Give functionalities of Data Link Layer, Network layer, and application layer. 04
- [C] Explain following terms: (1) piggybacking (2) forward error correction 04
- Que. - 2** [A] Explain CRC generator and checker with example. 06
- [B] Explain various controlled access protocols for multiple accesses at data link layer. 05

OR

- Que. - 2** [A] Explain checksum with example. "CRC is stronger than checksum" – Justify this statement. 06
- [B] Explain CSMA/CD. 05
- Que. - 3** [A] What is flow control? Explain Go-back-N ARQ flow control protocol. 06
- [B] Write short note on DNS. 04
- [C] Give difference between unicast and multicast Ethernet address. 02

Section – II

- Que. – 4 [A] An organization is granted the block 16.0.0.0/8. The administrator wants 06
to create 500 fixed-length subnets.
- a. Find the subnet mask.
 - b. Find the number of addresses in each subnet.
 - c. Find the first and last addresses in subnet 1.
 - d. Find the first and last addresses in subnet 500.
- [B] What is the need of fragmentation of packet at network layer? Explain 06
fragmentation in detail.

OR

- Que. – 4 [A] Draw IPV4 datagram format. Explain all fields of header datagram. 06
- [B] Explain updating routing table process in Distance vector routing 04
protocol.
- [C] Differentiate between classful and classless addressing mechanism. 02
- Que. – 5 [A] Explain TCP header in Detail. 06
- [B] What is NAT? How can NAT help in address depletion? 03
- [C] A packet has arrived in which the offset value is 150, the value of 02
HLEN is 10, and the value of total length is 200. What is the number of
first byte and last byte?

OR

- Que. – 5 [A] Explain backpressure and choke packet congestion control mechanisms. 05
- [B] What is the use of sequence number and acknowledgment number in 04
Data transfer process of TCP segment?
- [C] Why we need a sending and receiving buffers in TCP protocol? 02
- Que. – 6 [A] What is use of ARP protocol? Explain ARP packet format in detail. 04
- [B] Define Following: 04
- a) IPv6 address b) congestion control c) socket address d) virtual
connection
- [C] Write down difference between UDP and TCP protocol. 04

END OF PAPER