

CHAROTAR UNIVERSITY OF SCIENCE & TECHNOLOGY**Sixth Semester of B. Tech. (CE) Examination****June 2022****CE358: COMPUTER NETWORKS****Date: 28/06/2022, Tuesday****Time: 10:00 am To 01:00 pm****Maximum Marks: 70****Instructions:**

1. The question paper comprises of two sections.
2. Section I and II must be attempted in separate answer sheets.
3. Make & specify suitable assumptions and draw neat figures wherever required.
4. Use of scientific calculator is allowed.

SECTION – I**Q – 1 State True or false.****[05]**

- a) End systems are connected together by a network of communication links.
- b) End systems attached to the Internet provide a Protocol that specifies how a program running on one end system asks the Internet infrastructure to deliver data to a specific destination program running on another end system.
- c) With unguided media, the waves are guided along a solid medium, such as a fiber-optic cable, a twisted-pair copper wire, or a coaxial cable.
- d) The sequence of communication links and packet switches traversed by a packet from the sending end system to the receiving end system is known as a route.
- e) End systems, packet switches, and other pieces of the Internet run protocols that control the sending and receiving of information within the Internet.

Q - 2 Do as Directed (Any Three).**[15]**

- (a) Provide brief description of Store-and-forward packet switching with appropriate diagram.
- (b) What is interoperability, and why is it especially important in the Internet?
- (c) Difference between Packet Switching Versus Circuit Switching.
- (d) List the layers in the TCP/IP model, and give a brief explanation of any four layers.
- (e) Describe the human protocol and a computer network protocol.

Q - 3 Do as Directed (Any Three).**[15]**

- (a) Explain the steps for following scenario having HTTP with Non-Persistent Connections:
Transferring a Web page from server to client for the case of non-persistent connections. Let us suppose the page consists of a base HTML file and 10 JPEG images, and that all 11 of these objects reside on the same server. Further suppose the URL for the base HTML file is <http://www.someSchool.edu/someDepartment/home.index>
- (b) What are the characteristics of SMTP?
- (c) Describe HTTP request-response behavior.
- (d) What details does an application protocol specify?
- (e) Which are the things defined by an application-layer protocol?

SECTION – II

Q – 4 Do as Directed **[05]**

(a) Illustrate Client-server architecture in brief. [02]

(b) Do routers have IP addresses? If so, how many? [03]

Q - 5 Do as Directed (Any Three). **[15]**

- (a) What are the identifiable phases in a virtual circuit?
- (b) List down and illustrate the four identifiable components in the Router.
- (c) Explain IP fragmentation and reassembly with suitable diagram.
- (d) What are the main functions in the socket API?
- (e) Summarize the differences *Stream Paradigm* and *Message Paradigm*

Q - 6 Do as Directed (Any Three). **[15]**

- (a) Explain TCP segment structure with suitable diagram.
- (b) Compare the Server Application and Client Application in client-server model.
- (c) Illustrate Transport-layer multiplexing and demultiplexing with suitable diagram.
- (d) For a newly arriving host, the DHCP protocol is a four-step process. Which are these four steps? Describe them in detail.
- (e) List down Popular Internet applications and their underlying transport protocol.
