No. of Printed Pages : 4

UG0801

Roll No. 117792

BCA-75T-305

Three/Four Year B.C.A. Semester - V

Examination, Dec. - 2025

(Faculty of Science)

Subject - BCA

Data Communication & Computer Networks

Time Allowed : Three Hours *Maximum Marks: 120*

No supplementary answer-book will be given to any candidate. The candidates should write the answers precisely in the main answer-book only.

Answers to short answer-type questions must be given in sequential order.Similarly, all the parts of one question of descriptive part should be answered in one place in the answer-book.

Write your roll number on the question paper before start writing the answers of questions.

The paper consists of three parts A, B and C

Part A Question No. 1 contains 10 short answer Questions. Each question is of two marks with a limit of 20 words.

Part B The candidate is required to attempt any two questions out of four questions. Each question is of 10 marks with a limit of 150 words.

Part C (long-answer) The candidate is required to attempt any four questions with internal choice. 20 marks each.

Part-A

1. Attempt all questions each question carries 2 marks [10×2=20]

(a) What is a network?

(b) What is IP Address.

(c) Differentiate between analog and digital signals.

(d) What are the some drawbacks of implementing a ring topology.

(e) What is Protocol?

(f) What is microwave.

(g) What is network security?

(h) What is congestion control?

(i) What do you mean by multiplexing?

(j) What is Satellite?

Part-B

2. Explain different types of Network topologies with their advantages? [10]

3. Define the term "Error Detection". Explain cyclic redundancy check (CRC) with example. [10]

4. Describing routing algorithms in networks. [10]

5. What are the basics of network security concepts? [10]

Part-C

UNIT-I

6. Describe the various layers in TCP/IP protocol suite. [20]

OR

What is three way handshaking? Differentiate between clientserver and peertopeer models.

UNIT-II

7. What is transmission media? Describe the structure of an optical fiber and explain mechanism of light propagation along with the fiber? [20]

OR

Describe flow control in data link layer with respect to

(i) STOP and Wait ARQ (ii) Go Back N ARQ

UNIT-III

8. Write short notes on the following [5×4=20]

(i) DNS Protocol

(ii) WWW & HTTP

(iii) IPv6

(iv) The Berkeley socket interface.

OR

Compare between circuit switching and packet switching w.r.t

(i) Transport delay

(ii) Path and fault tolerance

(iii) Bandwidth

(iv) Intermediate storage

UNIT-IV

9. What is UDP? How does the transport layer ensure that the complete message arrives at the destination, and in the proper order? [20]

OR

How does a MAC address facilitate device identification in a local network, and what roles do switches, bridges, and routers play in managing and directing data traffic within and between networks? Additionally, explain how a router uses a public IP address to enable communication between the local network and the internet.

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