B.C.A. (Part-III) EXAMINATION, 2023
(Faculty of Science)
(Three-Year scheme of 10+2+3 Pattern)
Paper- 303 / 333
NETWORKING TECHNOLOGIES

Time Allowed: Three Hours

Maximum Marks – 100

PART-I: (Very short answer) consists of 10 questions of 2 marks each. Maximum limit for each questions is up to 40 words.

PART-II: (Short answer) consists of 5 questions of 4 marks each. Maximum limit of each question is up to 80 words.

PART-III: (Long answer) consists of 5 questions of 12 marks each with internal choice.

PART-I

1.   **[2*10=20]**

(i) What is line configuration in a network?

(ii) Write any two differences between LAN and WAN?

(iii) What is bandwidth and data rate?

(iv) What do you mean by network protocols?

(v) What is Telnet?

(vi) Explain MIME protocol?

(vii) What do you understand by multiplexing?

(viii) What is the difference between asynchronous and synchronous transmission?

(ix) What is a satellite?

(x) What are the benefits of optical fiber communication?

PART-II

2.   **[4*5=20]**

(i) Briefly explain the key components of data communication.

(ii) Explain router and gateway.

(iii) Explain the layers of TCP/IP protocol with proper diagram.

(iv) What is time division switching? Explain.

(v) Briefly explain the multiple layers used in SONET protocol.

PART-III

1. What do you mean by network topologies? Explain the types of topologies used in networking with proper diagram. **[12]**

OR

What are the types of transmission media? Explain each of them with proper diagram. **[12]**

2. Explain the OSI reference model in detail. **[12]**

OR

Define the term error detection. Explain Cyclic Redundancy Check (CRC) with example. **[12]**

3. Write the difference between following : **[6*2 = 12]**

(a) IPV4 and IPV6 protocol.

(b) TCP and UDP.

OR

Explain the following: **[3*4 = 12]**

(a) DNS

(b) SMTP

(c) HTTP

4. What is switching and explain the different types of switching techniques? **[12]**
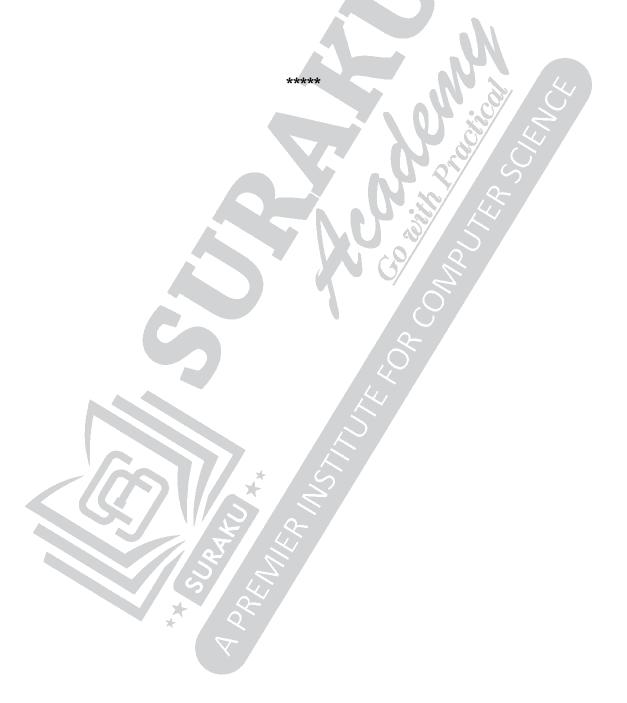
OR

What is Modem? Explain modulation and demodulation process of modem. **[12]**

5. Describe Geo-synchronous satellites. **[12]**

OR

Explain the mechanism of light propagation in optical fiber cable. **[12]**

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