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Roll No. : .....

**333452(33)**

**B. E. (Fourth Semester) Examination, April-May 2021**

**(New Scheme)**

**(IT Branch)**

**TELECOM SWITCHING & COMPUTER  
NETWORKS**

***Time Allowed : Three hours***

***Maximum Marks : 80***

***Minimum Pass Marks : 28***

***Note : Attempt all questions. Part (a) of each question is compulsory and carries 2 marks. Attempt any two from (b), (c) and (d) which carry 7 marks each.***

**Unit-I**

1. (a) Compare N-ISDN and B-ISDN. 2
- (b) Mr. A wants to communicate with Mr. B. over public communication network, when he places

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the call the switching equipment within the system looks for a dedicated path from A's network device to the B's network device. Brief about the switching technique used in this scenario and give advantages and disadvantages of same. 7

- (c) Draw the schematic diagram of telephone system and explain its working. 7
- (d) Why DSL are used in telephony? What is the service provided by telephone system using DSL? Explain ADSL. 7

### Unit-II

2. (a) What is transmission mode? which type of transmission mode is used for walky-talky. 2
- (b) The transport layer creates a connection between the source and destination. What are the 3 events involved in a connection and also write the difference between network layer delivery, transport layer delivery and session layer. 7
- (c) How do the 3 HDLC frame types differ from one another?. The frame is

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01111110 00000111 00101011 001011100-10100001011 FCS 01111110 is sent from a primary to a secondary. Answer the following question : 7

- (i) What is the address of the secondary?
- (ii) What is the type of frame?
- (iii) What is the sender sequence number?
- (iv) What is the acknowledgement number?
- (v) Does the frame carry user data? If yes what is the value of data?
- (vi) Does the frame carry management data If yes what is the value of data.
- (d) In stop and wait ARQ, what happen if a NAK is lost in transit? Why is there no need for NAKs to be numbered? Which sliding window ARQ is more popular and why? 7

### Unit-III

3. (a) Draw general format of ICMP message. 2
- (b) Give FDDI frame format and explain all its parameter. 7

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- (c) Explain briefly IEEE project 802.3. 7
- (d) What are the responsibilities of session layer, presentation layer and application layer? What protocol are generally used of application layer and for what purpose. 7

**Unit-IV**

4. (a) What are the services classes of ATM? 2
- (b) How is flow control handled by frame relay? Describe how does a frame gets retransmitted in frame relay? 7
- (c) What type of channel is used in ISDN and what are the data rates for this channel and also explain the architecture of ISDN network. 7
- (d) List the frame type X.25 and give their function. 7

**Unit-V**

5. (a) Define cryptogram and how it generates. 2
- (b) Describe the basic principle of digital signature? What type of security it provides? 7

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- (c) Give the two prime numbers  $p = 7$ ,  $q = 17$  try to find  $N$ , public key and secret key. Write RSA algorithm. 7
- (d) Write down all the necessary steps of Diffie Hellman key exchange algorithm and calculate the symmetric key, where two prime numbers are 23 and 7. Users pick private values  $a = 3$  and  $b = 6$ . 7