

Code No: 862AA

**R19**

**JAWAHARLAL NEHRU TECHNOLOGICAL UNIVERSITY HYDERABAD**  
**MCA II Semester Examinations, March - 2023**  
**COMPUTER NETWORKS**

**Time: 3 Hours**

**Max.Marks:75**

**Note:** i) Question paper consists of Part A, Part B.

ii) Part A is compulsory, which carries 25 marks. In Part A, Answer all questions.

iii) In Part B, Answer any one question from each unit. Each question carries 10 marks and may have a, b as sub questions.

**PART – A**

**(25 Marks)**

- 1.a) Compare and contrast LAN and WAN. [5]
- b) Compute the CRC for a 8-bit sequence 10100001 and a divisor of 110101. [5]
- c) What are the merits and demerits of Store-and-Forward switching? [5]
- d) List various fields in TCP header and define each field. [5]
- e) Give a brief note on DNS Resource Records. [5]

**PART – B**

**(50 Marks)**

- 2.a) What are the six service primitives that provide a connection-oriented service? Explain them briefly.
- b) List and explain various guided media for transmitting actual data in a computer network. [5+5]

**OR**

3. Make a comparison of TCP/IP reference model and OSI reference model. [10]

- 4.a) Compare and contrast flow control and error control.
- b) Devise the algorithm for a stop-and wait protocol and explain in detail. [4+6]

**OR**

- 5.a) Explain the sliding window protocol using Go-Back-N algorithm in brief.
- b) How does slotted ALOHA protocol differs from Pure ALOHA protocol? Explain slotted ALOHA in brief. [5+5]

- 6.a) Briefly describe Broad cast and Multi cast routing.
- b) What are the services provided by the Network layer to the Transport layer? [6+4]

**OR**

- 7.a) Explain Hierarchical Routing algorithm with an illustrative example.
- b) State the advantages and disadvantages of Hierarchical Routing algorithm. [5+5]

- 8.a) Discuss various primitives for a simple transport service.  
b) Explain the steps in making a remote procedure call. [5+5]

**OR**

9. With the help of an example socket program explain how to implement a communication between an internet file server and its clients. [10]

10. Give an overview of how email systems are organized and what email system can do with a neat architectural diagram. [10]

**OR**

- 11.a) Write a brief note on streaming audio.  
b) Explain the Multipurpose Internet Mail Extensions (MIME) message header. [5+5]

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