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Roll No. _____

22/3261

B.Sc. (Third Year) Examination, 2022

COMPUTER SCIENCE

Second Paper

(Computer Architecture & Data Communication)

Time : 1.30 Hours] *[Maximum Marks : 75*

Note : Attempt question of **Section-A** and **Section-B** as directed. The answers to short answer type questions should not exceed 150 words and the answers to long type questions should not exceed 350 words.

Section-A

(Short Answer Type Questions)

Note : Attempt any **five** questions. 7×5=35

P.T.O.

I. Define microprocessor, bus, Types of bus. Give three examples of a microprocessor.

II. Define Embedded Microprocessor, where are such devices used?

III. Draw a labelled diagram of the Intel 8085 microprocessor and its pin description. Explain in brief.

IV. Illustrate Read and write operations from CPU to memory in 8085 microprocessor.

V. Illustrate Data Transfer Instruction in Intel 8085 with examples.

VI. Differentiate between synchronous and Asynchronous Data Transfer.

VII. Define Interrupt. How is it handled?

VIII. Define : LAN, MAN, WAN with examples.

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Section-B

(Long Answer Type Questions)

Note : Attempt any **two** questions. 20×2=40

1. Write a detailed account of the evolution of Microprocessors over the period of time spanning fourth generation computers to the present times. Give examples of each type. 20

2. Differentiate between any two of the following with examples : (10+10)

   (i) RISC and CISC

   (ii) Registers-Generals purpose and special purpose.

   (iii) Direct Addressing and Indirect addressing modes.

   (iv) Assembly language and machine Language.

3. Write a detailed account of DMA method of I/O data transfer with the help of diagram. How does the CPU regain the control of buses after DMA operation completes? 20

4. Explain with clear diagram, the OSI model, clearly stating the functions, applications and Interfaces present at each layer. What is the relation betweeen the OSI model and the TCP/IP model? 20

5. Give an account of the following with diagrams. : 10+10

   (i) Network Topologies

   (ii) Transmission modes.