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VELAGAPUDI RAMAKRISHNA

SIDDHARTHA ENGINEERING COLLEGE

(AUTONOMOUS)

II/IV B.Tech. DEGREE EXAMINATION, March, 2022

Third Semester

INFORMATION TECHNOLOGY

20IT3304 COMPUTER ORGANIZATION

Time: 3 hours ***Max. Marks: 70***

Part-A is compulsory

Answer One Question from each Unit of Part - B

Answer to any single question or its part shall be written at one place only

PART-A

10 x 1 = 10M

1. a. Write the generic instruction types in a computer system.

   b. What is the difference between a direct and an indirect address instruction?

   c. List two basic functions of the CPU.

   d. What is an interrupt service routine in microprocessor?

   e. What is the role of stack in calling a subroutine and returning from the routine?

   f. What is the need of Linker?

   g. What is the difference between a macro and a procedure?

   h. Distinguish between overflow and underflow.

   i. Differentiate isolated I/O and memory mapped I/O.

   j. What is a multiprocessor system?

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PART-B

4 x 15 = 60M

UNIT-I

2. a. List the registers for the basic computer and give their functionality in program execution. **7M**

   b. Explain about different computer instruction formats. **8M**

(or)

3. a. Briefly discuss about interrupt cycle with its flowchart. **7M**

   b. Describe about the control unit of a basic computer. **8M**

UNIT-II

4. a. Write short note micro instruction format. **7M**

   b. Differentiate between CISC and RISC characteristics. **8M**

(or)

5. a. Evaluate the following arithmetic statement using zero, one, two and three address instructions:
   X=(A+B) * (C+D) **8M**

   b. Differentiate between relative and indexed addressing modes. **7M**

UNIT-III

6. a. Write about auxiliary and read only memories. Explain their applications. **7M**

   b. Briefly discuss about associative memory. **8M**

(or)

7. a. Write Booth's algorithm for multiplication of signed-2's complement number. **7M**

   b. Write about locality of preference, write-through protocol and write -back protocol in cache memory. **8M**

UNIT-IV

8. a. Explain the usage of daisy chains and priority in simultaneous interrupt handling. **7M**

   b. Compare interrupt driven data transfer scheme with DMA. **8M**

(or)

9. a. Illustrate asynchronous communication interface in detail. **8M**

   b. Explain different types of modes of transfer. **7M**

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