LT-03
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Roll No. ..... Total Pages : 03

008404

May 2024

B. Tech. (ECE) (Fourth Semester)

Computer Architecture (EC-404)

me : 3 Hours] [*Maximum Marks : 75*

Note : It is compulsory to answer all the questions (1.5 marks each) of Part A in short. Answer any *four* questions from Part B in detail. Different sub-parts of a question are to be attempted adjacent to each other.

Part A

1. (a) Differentiate between SR and JK Flip-flop. **1.5**

(b) Represent the decimal number 999 in Binary, Octal and Hexadecimal format. **1.5**

(c) How many bits are required to represent the all keys on keyboard ? **1.5**

(d) What are the characteristics of semiconductor RAM memories ? **1.5**

(e) What is PCI ? Explain. **1.5**

(f) Define system bus. **1.5**

(g) What is an assembly language ? **1.5**

(h) Define Mux and Demux operation. **1.5**

(i) Define the basic structure of computer. **1.5**

(j) What is micro-programmed control ? **1.5**

Part B

2. (a) Find the 9th, 10th, 2's and 1's complement of the given numbers X, Y and consider the value of : **8**

X = 432, Y=212. Perform the operation (X – Y) and (Y – X) using 9th and 10th complements and binary complements for the given numbers.

(b) Explain the type of stacks and operation of stacks in computer machines. **7**

3. Draw the processor organization and explain the basic functional units and flow of data between different units with neat diagrams. **15**

4. (a) Discuss about the basic instruction types and their formats. **8**

(b) Explain about multiplication and division mechanism in computer system for the two decimal numbers. **7**

5. (a) Compare and contrast micro-programmed control with hard wired control. 8

(b) Define an addressing mode. Explain about various addressing modes. 7

6. (a) Explain the different types of bus sharing mechanism. 8

(b) Differentiate between parallel and pipelining processing. 7

7. (a) Explain between EPROM and EEPROM. 5

(b) Computer Architecture and Computer Organization. 5

(c) Micro-operation and Micro-instruction. 5