Total No. of Questions: 6 *Total No. of Printed Pages:3*

Enrollment No.....

Faculty of Engineering

End Sem Examination Dec-2023

EC3CO10 Microprocessors & Microcontrollers

Programme: B.Tech. Branch/Specialisation: EC

Duration: 3 Hrs. **Maximum Marks: 60**

Note: All questions are compulsory. Internal choices, if any, are indicated. Answers of Q.1 (MCQs) should be written in full instead of only a, b, c or d. Assume suitable data if necessary. Notations and symbols have their usual meaning.

Q.1 i. Which of the following flag is used to mask INTR interrupt? **1**

(a) Zero flag (b) Auxiliary carry flag

(c) Interrupt flag (d) Sign flag

ii. Which of the following is special purpose register of microprocessor? **1**

(a) Program counter (b) Instruction registers

(c) General purpose register (c) Accumulator

iii. How many address lines are present in 8086 microprocessors? **1**

(a) 16 (b) 32 (c) 20 (d) 8

iv. The instruction that is used to transfer the data from source operand to destination operand is- **1**

(a) Data copy instruction (b) Branch instruction

(c) Arithmetic instruction (d) String instruction

v. The register that stores all the interrupt requests in it in order to serve them one by one on a priority basis is- **1**

(a) Interrupt Request Register

(b) In-Service Register

(c) Priority resolver

(d) Interrupt Mask Register

vi. The number of counters that are present in the programmable timer device 8254 is- **1**

(a) 1 (b) 2 (c) 3 (d) 4

vii. 8051 microcontroller is manufactured by which of the following companies? **1**
(a) Atmel (b) Philips
(c) Intel (d) All of these

viii. Which of the following should a microcontroller at least consist of? **1**
(a) CPU, ROM, I/O ports, timers
(b) RAM, ROM, I/O ports, timers
(c) CPU, RAM, I/O ports, timers
(d) CPU, RAM, ROM, I/O ports, timers

ix. Which is the first company who defined RISC architecture? **1**
(a) IBM (b) Motorola (c) Intel (d) MIPS

x. In ARM processor, ARM stand for- **1**
(a) Advanced rate machine
(b) Advanced RISC machine
(c) Advanced running machine
(d) Aviary running machine

Q.2 i. Name and work of any 4 pins of 8085 microprocessor. **2**

ii. How many different types of interrupt are present in 8085 microprocessor? **3**

iii. Draw and explain the opcode fetch machine cycle in 8085 microprocessor. **5**

OR iv. Explain the internal architecture of 8085 microprocessor in detail. **5**

Q.3 i. Distinguish between 8085 and 8086 microprocessor. **4**

ii. Discuss the memory segmentation concept of 8086 microprocessor in detail. **6**

OR iii. Explain different addressing mode of 8086 microprocessor with suitable example. **6**

Q.4 i. What are different modes of 8253 timer? **3**

ii. Explain the working of 8259 Programmable Interrupt Controller with diagram. **7**

OR iii. Discuss the internal structure of 8257 DMA and its working. **7**

Q.5 i. Explain the different types of registers present in microcontroller. **4**

ii. Explain the different addressing mode of 8051 microcontroller with suitable example. **6**

OR iii. Draw internal architecture of 8051 microcontroller in detail. **6**

Q.6 Attempt any two:

i. What is difference between Von Neumann architecture and Harvard architecture? **5**

ii. Which type of technology is used in arm processor? Explain features of arm processor. **5**

iii. Give brief description about RISC and CISC processor. **5**

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