END SEMESTER/RETEST EXAMINATION 2020

Semester-5th

Subject Code: ET-502

MICROPROCESSOR

Full Marks: 70(Part A-25 + Part B-45)

Duration: 3 hours

Questions on Part A are compulsory.

Answer any five questions from Part B.

PART-A

Marks-25

1. **Fill in the blanks:** **(1x10=10)**
   (a) Address bus of 8085 microprocessor is of _____ bits.
   (b) An instruction has two parts: Opcode and the _____.
   (c) The method of specifying an Operand is called_____.
   (d) STA 2500 H takes _____ machine cycles.
   (e) There are _____ addressing modes.
   (f) The _____ ensures that only one IC is active at a time to avoid a bus conflict caused by two ICs writing different data to same bus.
   (g) When referring to instruction words, a _____ is a short abbreviation for the operation to be performed.
   (h) The technique of assigning a memory address to each I/O device in the computer system is called _____.
   (i) Intel 8085 operates on _____ MHz frequency.
   (j) 74LS373 is used to multiplex address bus of Intel 8085 with the _____ bus.

2. **Write true or false:** **(1x10=10)**
   (a) The 8085 is a 4-bit microprocessor.
   (b) ALE stands for Address Latch Enable.
   (c) Opcode fetch machine cycle of 8085 microprocessor has 4T states.
   (d) The memory is the brain of the computer.
   (e) 8085 microprocessor operates on +5V.
   (f) Port-A, Port-B, Port-C are the Ports of PPI 8255.
   (g) ROM is a non-volatile memory.
   (h) EPROM stands for Electrically Provided Read Only Memory.
   (i) Intel 8255 has three modes of operation.
   (j) Intel 8237A is a high performance DMA controller.

3. **Choose the correct answer:** **(1x5=5)**

(a) 8085 microprocessor has how many pins?

(i) 30

(ii) 39

(iii) 40

(iv) 41

(b) Which of the following is not a vectored interrupt?

(i) TRAP

(ii) INTR

(iii) RST 7.5

(iv) RST 3

(c) What is meant by ALU?

(i) Arithmetic Logic Upgrade

(ii) Arithmetic Logic Unsigned

(iii) Arithmetic Local Unsigned

(iv) Arithmetic Logic Unit

(d) CPU does not perform the operation.

(i) Data Transfer

(ii) Logical Operation

(iii) Arithmetic Operation

(iv) All of the above

(e) The five flags in 8085 are designed as

(i) Z, CY, S, P and AC

(ii) D, Z,S, P and AC

(iii) Z,C, S, P, AC

(iv) Z, CY, S, D, AC

Part – B

Marks-45

Answer any five questions.

4. (a) Explain with diagram the function of each register of 8085. **(3)**

(b) Give description of different types of bus of 8085 microprocessor with proper diagram. **(3)**

(c) Define machine language, assembly language and high level language. **(3)**

5. (a) What are the different addressing modes of 8085? **(3)**

(b) What is stack? Explain the operation of stack. **(3)**

(c) Explain why D/A conversion is required. **(3)**

6. (a) Write the meaning of the following 8085 instruction: LXI 2025H, INR C, JMP8023. **(3)**

   (b) What is the function of a programmable interrupt controller? **(3)**

   (c) Explain what is memory mapped I/O scheme. **(3)**

7. (a) What is DMA data transfer scheme? Discuss the function of DMA data controller 8257 or 8237. **(4½)**

   (b) Show the interface connections of ADC 0800 to 8085. Show important signals. **(4½)**

8. (a) Draw and explain the timing diagram for memory read operation. **(4½)**

   (b) Classify the instruction set for 8085 microprocessor in various groups. **(4½)**

9. (a) Draw the memory hierarchy diagram. Classify the memory. **(4½)**

   (b) Show with diagram how different control signals are generated. **(4½)**

10. Draw and explain the internal architecture of Intel 8085 microprocessor. **(9)**
11. Write an assembly language to add two 8-bit numbers, result is 8-bit. **(9)**
12. Write an assembly language to find the one's complement of an 8-bit number. **(9)**

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