Total No. of printed pages = 6

RETEST EXAMINATION - 2019

Semester : 3rd (Old Syllabus)

Subject Code : Co-305

COMPUTER ARCHITECTURE AND ORGANIZATION

Full Marks – 70

Time – Three hours

The figures in the margin indicate full marks for the questions.

Instructions :

1. *All* questions of PART–A are compulsory.
2. Answer any *five* questions from PART–B.

PART – A

Marks – 25

1. Fill in the blanks : 1×10=10

   (a) The BCD representation of 123 is _____.

   (b) The two's complement of 11110001 is _____.

[Turn over

(c) 1 megabyte is equal to _____ KB.

(d) The full form of VDU is _____.

(e) Intel 8085 is a _____ bit micro-processor.

(f) EPROM stands for _____.

(g) In memory hierarchy _____ are at the top level.

(h) The addressing mode, where you directly specify the operand value is _____.

(i) Scanner is a _____ device.

(j) The surface of the magnetic disk is divided into a number of concentric circles called _____.

2. Write true or false : 1×10=10

(a) Floating point representation is used to store Boolean values.

(b) Microprogrammed control unit is a input device.

(c) ROM is a volatile memory.

(d) In a microprocessor, the address of the new next instruction to be executed is stored in Program Counter.

(e) The registers used to store the flags are called as Status registers.

(f) In memory-mapped I/O a part of the memory is specifically set aside for the I/O operation.

(g) To reduce the memory access time we generally make use of secondary memory.

(h) Handshaking mode of data transfer is synchronous data transfer.

(i) Interrupts initiated by an instruction is called as memory interrupt.

(j) In memory-mapped I/O, the I/O devices have a separate address space.

3. Choose the correct answers : 1×5=5

(a) Which memory device is generally made of semi-conductors ?

(i) RAM (ii) Magnetic Tape

(iii) Hard disk (iv) CD-ROM

(b) The instructions like MOV or ADD are called as

(i) OP-Code

(ii) Operators

(iii) Commands

(iv) None of the mentioned above

(c) Which of the following is a part of the Central Processing Unit ?

(i) Printer

(ii) Key board

(iii) Mouse

(iv) Arithmetic and Logic unit

(d) The fastest data access is provided using _____.

(i) Caches (ii) DRAM

(iii) SRAM (iv) Registers

(e) The ALU makes use of _____ to store the intermediate results.

(i) Accumulator (ii) Registers

(iii) Heap (iv) Stack.

PART – B

Marks – 45

4. (a) Distinguish between fixed point numbers and floating point representation of numbers. 3

(b) What are weighted and non-weighted codes ? Give examples. 4

(c) What do you mean by round off error ? 2

5. (a) Explain the functions of CU and ALU of a computer. 4

(b) Write the functions of MAR and MBR. 2

(c) What are flags ? Name them. 3

6. (a) Write briefly about one address instruction and two address instruction. 4

(b) Define addressing modes. What are the direct and indirect addressing ? 3

(c) Write briefly about micro programmed control unit. 2

7. (a) What do you mean by DMA ? Write its basic principles. 5

(b) What is polling ? 2

(c) Write briefly about mouse. 2

8. (a) Differentiate between RAM and ROM. 3

(b) What do you mean by interrupt ? Explain any two types of interrupts. 6

9. (a) Differentiate between memory mapped I/O and Isolated I/O. 4

(b) Write brief notes on 'cache memory' and 'memory hierarchy'. 5

10. Write brief notes on printer and hard disk. 9

11. Draw the block diagram of Intel 8085 microprocessor and explain briefly about each unit. 9

12. Explain Booth's algorithm for multiplication of signed numbers. Multiply-12 and 6 using Booth's multiplication algorithm. 5+4=9