0CS4	

Fourth Semester B.E.

Fourth Semester B.E. Degree Examination, Jan./Feb. 2021

Computer Organization

Time: 3 hrs.

F

Max. Marks:100

Note: Answer any FIVE full questions, selecting at least TWO questions from each part.

PART – A

- 1 a. With a neat block diagram, explain the basic steps required to execute an instruction.

 (08 Marks)
 - b. With the help of suitable examples, illustrate the encoding of a machine instruction.

(06 Marks)

- c. Convert the following pairs of decimal numbers of 4 bit, signed, 2's complement binary number and perform the operation: (i) -3-7 (ii) +2+4 (iii) +2-3 (06 Marks)
- 2 a. Explain with examples, all the generic addressing modes. (10 Marks)
 - b. What is stack frame? Explain how the parameters are passed to sub routines with an example. (10 Marks)
- 3 a. What is interrupt? Explain daisy chain with multiple priority levels and multiple devices in each level. (10 Marks)
 - b. With neat block diagram, explain: (i) DMA controller (ii) Exceptions (10 Marks)
- 4 a. With a neat diagram, explain in detail the output interface circuit. (10 Marks)
 - b. Explain the significant features of USB. (10 Marks)

PART - B

- 5 a. Sketch and explain the internal organization of a 2M × 8 dynamic memory chip. (10 Marks)
 - b. Explain: (i) Virtual memories (ii) Set associative mapped CACHE (10 Marks)
- 6 a. Explain Booth's algorithm. Multiply 01110(+14) and 11011(-5) using Booth's multiplication. (10 Marks)
 - b. Explain the design of a 4-bit carry look ahead adder. (06 Marks)
 - c. List the rules for addition, subtraction, multiplication and division of floating point numbers.

 (04 Marks)
- 7 a. Explain Multiple Bus Organization. (10 Marks)
 - b. With a neat block diagram, explain the organization of a micro programmed control unit and microinstructions. (10 Marks)
- 8 a. Explain the programmer's view of shared memory with an example. (10 Marks)
 - b. Write notes on: (i) Amdahl's law (ii) SIMD in X86 (10 Marks)

Any revealing of identification, appeal to evaluator and lor equations written eg, 42+8=50, will be treated as malpractice. Important Note: 1. On completing your answers, compulsorily draw diagonal cross lines on the remaining blank pages.