Roll No. : .....

Total No. of Questions : **16**] [Total No. of Printed Pages : **3**

SCOM–116

M.Sc. (Ist Semester) Examination, 2021

COMPUTER SCIENCE

Paper – MCS–103

(Computer Organization)

Time : 1½ Hours] [*Maximum Marks : **40***

Section–A **(Marks : 1 × 10 = 10)**

Note :– Answer all *ten* questions (Answer limit **50** words). Each question carries **1** mark.

Section–B **(Marks : 3 × 5 = 15)**

Note :– Answer all *five* questions by selecting at least *one* question from each Unit (Answer limit **200** words). Each question carries **3** marks.

Section–C **(Marks : 5 × 3 = 15)**

Note :– Answer any *three* questions by selecting *one* question from each Unit (Answer limit **500** words). Each question carries **5** marks.

Section–A 1 each

1. Attempt all *ten* questions. Answers should not exceed **50** words in each question.

   (i) Define Processor.

   (ii) What do you understand by Input-Output Unit ?

(iii) What is 1's Complement ?

(iv) What is Half Adder ?

(v) What is Virtual Memory ?

(vi) What do you understand by I/O Interface ?

(vii) Explain the need of Virtual Function.

(viii) What is ALU ?

(ix) What is Register Set ?

(x) What do you know about Data and Address Bus ?

Section–B 3 each

Note :– Answer *five* questions in about **200** words, by selecting at least *one* question from each Unit.

Unit–I

2. Explain difference between organization and architecture.

3. Find out 2's complement of $(378)_{10}$ and $(10011)_2$.

4. Subtract $(125)_{10}$ from $(100110110)_2$ and find out results in base of Binary and 10.

Unit–II

5. Explain full adder in detail.

6. What do you understand by Multiplexers ? Explain.

7. Explain SR Flip-Flops with suitable example.

Unit–III

8. What is timing and control unit ?

9. Explain addressing modes in detail.

10. What is Instructional Format ? Explain Opcode and Operand also.

Section–C

5 each

Note :– Answer *three* questions in this Section, by selecting *one* question from each Unit in about **500** words.

Unit–I

11. Convert the following :

    (a) From $(225)_8 + (463)_{10}$ to $(\quad)_{16}$.

    (b) From $(10010110)_2$ to $(\quad)_8$ and $(\quad)_{10}$.

    (c) From $(ABCD)_{16}$ to $(\quad)_{10}$, $(\quad)_2$ and $(\quad)_8$.

12. Explain map simplification in detail with suitable example.

Unit–II

13. Discuss asynchronous data transfer.

14. Explain memory organization, types and their capacity in detail.

Unit–III

15. Discuss complete Intel 8085 Instruction Set.

16. Explain pin configuration and Intel 8085 programs.