

Roll No. :

Total No. of Questions : 11]

[Total No. of Printed Pages : 3

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M.Sc. (Previous) Examination, 2022

INFORMATION TECHNOLOGY

Paper - MIT-104

(Computer Organisation and Architecture)

Time : 3 Hours]

[Maximum Marks : 50

Section-A

(Marks : 2 × 10 = 20)

Note :- Answer all *ten* questions (Answer limit **50** words). Each question carries **2** marks.

Section-B

(Marks : 3 × 5 = 15)

Note :- Answer all *five* questions. Each question has internal choice (Answer limit **200** words). Each question carries **3** marks.

Section-C

(Marks : 5 × 3 = 15)

Note :- Answer any *three* questions out of five (Answer limit **500** words). Each question carries **5** marks.

Section-A

2×10=20

1. Answer all *ten* questions (Answer limit **50** words). Each question carries **2** marks.

(i) Write about registers.

(ii) What do you mean by Fixed Point Representations ?

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- (iii) What is Virtual Memory ?
- (iv) Explain main memory.
- (v) Point out how DMA can improve I/O Speed.
- (vi) What is Serial Communication ?
- (vii) Brief about Relative addressing mode with an example.
- (viii) Explain with example how stack organization help in evaluation of Arithmetic Expression.
- (ix) What is a Micro-program Sequencer ?
- (x) Explain four pins of 8085 microprocessor.

Section-B

3×5=15

Note :- Answer all *five* questions. Each question has internal choice (Answer limit **200** words). Each question carries **3** marks.

2. Represent the following conditional control statement by two register transfer statements with control functions.

If ($p=1$), then ($R1 \leftarrow R2$) else if ($Q=1$), then ($R1 \leftarrow R3$).

Or

Convert $(1100101)_2 = (?)_8$.

3. What is the basic advantage of using interrupt initiated data transfer over transfer under program control without an interrupt ?

Or

What is Auxiliary Memory ?

4. Draw necessary diagram and explain with example the working of General Register Organization.

Or

What do you mean by Asynchronous Data Transfer ?

5. Draw necessary diagrams and explain the control signal generation using micro-programmed control.

Or

Write short note on Instruction Formats using example.

6. Explain Assembly language structure of 8085 with example.

Or

Explain instruction cycle with diagram.

Section–C

5×3=15

Note :- Answer any *three* questions out of five (answer limit **500** words). Each question carries **5** marks.

7. With a neat sketch explain the working principle of DMA.
8. What is the need for addressing in a computer system ? Explain the different addressing mode with suitable examples.
9. Explain the design of micro-programmed control unit in detail.
10. What do you mean by Floating Point Representation ? Also explain multiplexers.
11. Explain microprocessor architecture in detail.