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Total No. of Questions : 11 ]

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# **BPG-1102**

**M.Sc. (Previous) Examination, 2021**

**COMPUTER SCIENCE**

**MCS-101**

**(Computer Organization)**

*Time : 1½ 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 each

1. (i) Define 1's complement.
- (ii) Define Overflow.
- (iii) What is Flip-flop ?

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- (iv) What is De Morgan's theorem ?
- (v) Define I/O interface.
- (vi) Define I/O processor.
- (vii) Define Buffer.
- (viii) What is Memory Hierarchy ?
- (ix) Define accumulator register.
- (x) What is Address Bus ?

**Section-B**

3 each

2. Explain the use of 2's complement in Computer Arithmetics.

*Or*

Explain Division algorithm.

3. Explain Full Adder.

*Or*

Explain JK flip-flop.

4. Explain asynchronous data transfer.

*Or*

Explain Priority Interrupt.

5. Explain Associative memory.

*Or*

Describe Cache Memory.

6. Explain Intel 8085 microprocessor register set.

*Or*

Explain addressing modes.

**Section-C**

5 each

7. Explain Booth's algorithm with example.

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8. Minimize the following Boolean function using K-map :

$$F(a, b, c, d) = \sum_m (0,1,2,5,7,8,9,10,13,15)$$

9. Describe the working of DMA in detail.
10. Explain the working of virtual memory.
11. Explain instruction cycle.