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B. C. A. (Part - III) Examination, 2022
(New Course)
Paper Sixth
Computer System Architecture
(306)

Time : Three Hours]   *[Maximum Marks:80*

Note: All questions are compulsory. Attempt any two questions from each unit. All questions carry equal marks.

Unit - I

1. (A) What is number system? Explain the $1'^S$ & $2'^S$ complement method.

   (B) Discuss the overflow and underflow error.

   (C) Describe the Error detection & correcting codes.

Unit - II

2. (A) Explain and proof the Demorgan's theorem.

   (B) What is map simplification? Discuss about the K map.

   (C) What is flip - flop? Draw & explain the circuit diagram of JK & T flip - flop.

Unit - III

3. (A) What is microprocessor? Draw the Intel 8085 Microprocessor block diagram and explain it.

   (B) What is registers? Explain about the registers using in microprocessor.

   (C) Write short notes on -

   (i) Motherboard   (ii) SMPS

Unit - IV

4. (A) Describe the memory mapped I/O.

   (B) Explain the synchronous and Asynchronous data transfer.

   (C) Explain the properties of simple I/O devices and their controller.

Unit - V

5 (A) Explain the page table and page replacement.

(B) Describe the Auxiliary memory.

(C) Write short notes on :

(i) Memory Hierarchy

(ii) Virtual Memory