

Code No. : A.C-393

2. Solve the following using K-Map :

$$F1(A, B, C, D) = \sum m (1, 3, 5, 8, 9, 11, 15) + d (2, 13)$$

Or

$$F2(A, B, C, D) = \prod M (0, 1, 3, 8, 9, 13, 15).$$

3. Explain the working of JK flip-flop with truth table.

Or

Explain various types of registers used in microprocessor.

4. Explain binary counters with neat and clean diagram.

Or

Explain various modes of data transfer.

5. Explain the various properties of simple input-output devices and their controller.

Or

Differentiate asynchronous and synchronous data transfer.

□ □ □ □ □ d □ □ □ □ □

Roll No.

Total No. of Sections : 3

Total No. of Printed Pages : 4

Code No. : A.C-393

Annual Examination, 2020

B.C.A. Part III

COMPUTER SYSTEM ARCHITECTURE

Paper III

Time : Three Hours] [Maximum Marks : 80

Note : Section 'A', containing 10 very short answer type questions, is compulsory. Section 'B' consists of short answer type questions and Section 'C' consists of long answer type questions. Section 'A' has to be solved first.

Section 'A'

Answer the following very short answer type questions in one or two sentences. 2×10=20

1. Convert $(1A5B)_{16}$ into $()_8$.
2. Convert $(172.878)_{10}$ into $()_2$.
3. Why NAND gate is called universal gate ?
4. State De Morgan's theorem.

Code No. : A.C-393

5. What is Half Subtractor ?
6. Write down formula to calculate hit ratio.
7. What is ALU ?
8. Write the name of one input device.
9. Name one error detecting and correcting code method.
10. Draw the logic diagram of EX OR gate.

Section 'B'

Answer the following short answer type questions with word limit 150–200. **6×5=30**

1. Explain 1's complement and 2's complement with appropriate example.

Or

Explain with example conversion of the following :

- (i) Binary to Decimal,
 - (ii) Decimal to Octal.
2. What is Overflow and Underflow ?

Or

Explain BCD codes with example.

[2]

Code No. : A.C-393

3. Explain D flip-flop with truth table.

Or

Explain RS flip-flop.

4. Write down 3 differences between combinational and sequential circuits.

Or

Explain RAM and ROM.

5. Write a short note on CPU organization.

Or

Explain pin and architecture of microprocessor.

Section 'C'

Answer the following long answer type questions with word limit 300–350. **10×5=50**

1. Explain Hamming code method with appropriate example.

Or

Explain ASCII and EBCDIC codes.

[3]

P. T. O.