Roll No. | | | | | | | | | | | | | **Total No. of Pages : 02**

Total No. of Questions : 07

B.Sc. (IT) (Sem–1)

COMPUTER SYSTEM ARCHITECTURE

Subject Code : UGCA-1908

M.Code : 76954

Date of Examination : 09-06-2023

Time : 3 Hrs. **Max. Marks : 60**

INSTRUCTIONS TO CANDIDATES :

1. **SECTION-A is COMPULSORY consisting of TEN questions carrying TWO marks each.**
2. **SECTION-B contains SIX questions carrying TEN marks each and students have to attempt any FOUR questions.**

SECTION-A

1. Write briefly :

a) Explain in brief about NOR Gate. Write its truth table.

b) Which Gates are called as the universal gates? Also write the advantages of Universal Gates.

c) State the limitations of K-Maps.

d) Define the term Binary Adder.

e) What do you mean by a Decoder? Explain.

f) Differentiate between Combinational & Sequential circuits?

g) What is the operation of D flip-flop?

h) What is the concept of Harvard architecture?

i) What are Register reference Instructions. List any two Register reference instructions.

j) What do you mean by Address Bus? Explain.

SECTION-B

2. a) **Explain about Boolean expression. Simplify the Boolean expression :**

   $F = C (B + C) (A + B + C)$.

   b) Explain in detail about Realization of Boolean Expression using Gates.

3. Write a detailed note on SOP and POS Forms.

4. **Explain the following terms in detail :**

   a) Half Subtractor.

   b) Full Adder

5. **Explain the following terms in detail :**

   a) Multiplexers

   b) Encoders

6. **Explain the working of following flip-flops with a truth table and logic circuit :**

   a) R-S Flip Flop

   b) Master- Slave J-K Flip Flop

7. Explain the Von Newmann Architecture in detail.

NOTE : Disclosure of Identity by writing Mobile No. or Making of passing request on any page of Answer Sheet will lead to UMC against the Student.