Seat No.: _____ Enrolment No. _____

GUJARAT TECHNOLOGICAL UNIVERSITY

MCA – SEMESTER – I • EXAMINATION – SUMMER 2018

Subject Code: 2610004 Date: 28-May-2018

Subject Name: Fundamentals of Computer Organization

Time: 02.30 pm to 5.00 pm Total Marks: 70

Instructions:

1. **Attempt all questions.**
2. **Make suitable assumptions wherever necessary.**
3. **Figures to the right indicate full marks.**

Q.1 **(a)** Do as Directed

1. Define SOP **01**
2. What do you mean by addressing technique? **01**
3. What is ROM? **01**
4. List types of RAM **01**
5. What is word size? **01**
6. What is Gate? **01**
7. Give full form of ALU **01**

(b) Do as directed

1. Convert $(7458)_8$ to its equivalent hexadecimal number. **02**
2. What is Binary-coded-Decimal number system? Convert $(1234)_{10}$ to BCD. **02**
3. Convert $(A4C)_{16}$ into GRAY code. **02**
4. Convert decimal number 68.68 into its equivalent binary number **01**

Q.2 **(a)** Write and explain basic components of a Digital Computer with diagram. **07**

(b) What is printer? Explain types of Printer. **07**

OR

(b) What do you mean by Secondary memory? Explain Secondary memories. **07**

Q.3 **(a)** Explain Direct and Indirect addressing techniques. **07**

(b) Explain Instruction word with suitable examples. **07**

OR

Q.3 **(a)** What is Multiplexer? Explain Basic working and applications of Multiplexer. **07**

(b) Explain Indexed and Relative addressing techniques **07**

Q.4 **(a)** Explain Instruction Cycle and Execution Cycle along with used control registers. **07**

(b) What is Flip-flop? Explain RS flip-flop and its functionality. **07**

OR

Q.4 **(a)** Explain the working of Half-adder and Full-adder along with the circuit diagram. **07**

(b) Write a short note on: Shift registers. **07**

Q.5 **(a)** Explain architecture of 8086 Processor. **07**

(b) Draw the K – map for m5 + m7 +m15 + m10 + m2 (K-map in W,X,Y,Z) **07**

OR

Q.5 **(a)** Explain different parts of EU n 8086 microprocessor. **07**

(b) Draw the K – map for m1 + m5 + m7 + m6 + m12 + m13 + m15 + m11 (K – map in A, B, C, D) **07**

****