501

Register No.:

April 2018

Time – Three hours
(Maximum Marks: 75)

[N.B: (1) Q.No. 8 in PART – A and Q.No. 16 in PART – B are compulsory. Answer any FOUR questions from the remaining in each PART – A and PART – B

(2) Answer division (a) or division (b) of each question in PART – C.

(3) Each question carries 2 marks in PART – A, 3 marks in Part – B and 10 marks in PART – C.]

PART – A

1 Which are known as universal gates? Why is it called so?

2. Write +6 and –6 in signed binary.

3. Draw the basic SR flip flop circuit.

4. What is EEPROM and EPROM?

5. In a 8085 micro processor, what is the function of a program counter and stack pointer?

6. What is known as tristate logic?

7. In a memory, what is known as read and write operation?

8. What is the 2's compliment of 11001010?

PART – B

9. Convert the $(2A8)_{16}$ hexadecimal into decimal equivalent.

10. Draw the logic diagram and truth table of half subtractor.

11. What is called triggering? State its types.

12. What are the differences between static RAM and dynamic RAM?

13. What is an interrupt? State the types of hardware interrupts that a 8085 microprocessor has.

14. Draw the truth table of full adder.

15. What are the types of instructions in a microprocessor according to the length of the instruction? Give one example each.

16. Simplify the Boolean expression $AB\bar{C} + A\bar{B}C + \bar{A}BC + ABC$.

PART – C

17. (a) What are the characteristics of CMOS logic circuit? Explain the operation of a CMOS NAND gate.

(Or)

(b) Simplify $f(A,B,C,D) = \sum(0, 2, 4, 5, 6, 7, 8, 10, 12, 13, 14, 15)$ using K-map. Draw the logic diagram after simplification.

18. (a) Explain the operation of a full subtractor with necessary diagrams. What is the difference between half and full subractor?

(Or)

(b) What is the difference between a multiplexer and demultiplexer? Explain the operation of a 8 to 1 multiplexer.

19. (a) Explain the operation of a JK-MS flip flop with a neat diagram. State how it can be converted into a T (toggle) flip flop.

(Or)

(b) Explain how read and write operation is performed in a serial in parallel out shift register.

20. (a) What is known as flash memory? Explain ROM organisation.

(Or)

(b) (i) Explain the operation of dynamic RAM.
(ii) In a memory, what is called as address?

21. (a) Explain the different types of addressing modes in a microprocessor with example.

(Or)

(b) 1) What is ALU?
2) Compare memory mapped I/O and I/O mapped I/O in a microprocessor.
