2022/07

B.Sc. CHEMISTRY
SIXTH SEMESTER
IT FUNDAMENTALS
BSC - 607A

(Use Separate Answer Scripts for Objective & Descriptive)

Duration : 1.5 hrs. **Full Marks : 35**

[PART-A: Objective]

Time : 10 min. **Marks : 10**

Choose the correct answer from the following: ***1X10=10***

1. The translator which converts high level language into machine language is called
   a. Assembler b ALU
   c. Compiler d None

2. How many NOR gates are required to construct an AND gate
   a. 2 b. 3
   c. 1 d. 4

3. The fastest type of computer is
   a. Mainframe computer b. Apple notebook
   c. Super computer d. Mini computer

4. The binary equivalent of decimal number number $(80.275)_{10}$ is
   a. 1100000.01 b. 1010001.10
   c. 1010000.01 d. 1010000.10

5. In 4:1 MUX, the number of select line is
   a. 3 b. 2
   c. 1 d. 4

6. DEMUX is also called
   a. Data distributor b. Data selector
   c. Data analyzer d. none

7. The 2's compliment of the number 10101101 is
   a. 01010010 b. 11010010
   c. 01010011 d. 11101111

8. Which of the following is responsible for arithmetic and logic operations?
   a. ALU b. CPU
   c. Memory d. All of these

9. CPU consists of
   a. ALU & Memory b. ALU & Control Unit
   c. Control Unit & Memory d. All of these

10 The hexadecimal form of the binary number 11111010 is

a. AF
b. EA
c. CD
d. FA

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PART-B : Descriptive

Time : 1 hr. 20 min. Marks : 25

[Answer question no.1 & any two (2) from the rest]

1. Explain with the help of block diagram the computer architecture. 5

2. a. Design with the help of truth table 4:1 MUX. 5+5=10

   b. What do you mean by Universal gate? Construct an OR gate using NAND gate only.

3. a. Find the binary equivalent of the decimal number 13.25. 3+3+4 =10

   b. Convert $(11011.1011)_2$ into decimal.

   c. Subtract $(11)_{10}$ from $(12)_{10}$ using 2's complement method.

4. a. What is Computer Language? Explain briefly. 4+6=10

   b. Discuss the features, advantages and disadvantages of generation of computer.

5. Write short notes on the followings: 5+5=10
   a. Demultiplexer
   b. Computer software.

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