# BACHELOR OF MEDICAL LABORATORY TECHNOLOGY
## SECOND SEMESTER
## FUNDAMENTALS OF COMPUTER SCIENCE
## BMLT – 206 [SPECIAL REPEAT]
[USE OMR SHEET FOR OBJECTIVE PART]

**SET A**

Duration: 3 hrs.                                                                                      Full Marks: 70

( **Objective** )

Time: 30 min.                                                                                              Marks: 20

*Choose the correct answer from the following:*                                          $1 \times 20 = 20$

1. The binary form of decimal 7 is
   a. 101
   b. 110
   c. 111
   d. 010

2. Which of the following is Universal gate?
   a. AND
   b. OR
   c. NOT
   d. NOR

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

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

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

6. In 8:1 MUX, the number of select lines are
   a. 3
   b. 2
   c. 1
   d. 4

7. A Half Adder performs binary addition of
   a. 1 bit
   b. 2 bits
   c. 3 bits
   d. All of these

8. The hexadecimal form of the binary number 11111010 is
   a. AF
   b. EA
   c. CD
   d. FA

9. The 1's compliment of the number 10101101 is
   a. 01010010
   b. 01100001
   c. 10010010
   d. 01010011

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10. The expression for OR gate is
    a. Y=AB                                    b. Y=A+B
    c. Both (a) &(b)                           d. None

11. How many NAND gates are required to construct an OR gate?
    a. 2                                       b. 4
    c. 3                                       d. 1

12. Transistor was used in
    a. 3rd generation of computer              b. $2^{nd}$ generation of computer
    c. 1st generation of computer              d. $5^{th}$ generation of computer

13. The base of Hexa-decimal number system is
    a. 2                                       b. 10
    c. 8                                       d. 16

14. The octal form of $(101110)_2$ is
    a. $(65)_2$                                b. $(56)_2$
    c. $(23)_2$                                d. $(32)_2$

15. Vacuum tube was used in
    a. 3rd generation of computer              b. $2^{nd}$ generation of computer
    c. 1st generation of computer              d. $5^{th}$ generation of computer

16. An example of output device is
    a. Keyboard                                b. Mouse
    c. CPU                                     d. Printer

17. Which of the followings can store data permanently
    a. Main memory                             b. Secondary memory
    c. Both (a) & (b)                          d. None

18. Which of the following is a volatile memory?
    a. Hard-disk                               b. ROM
    c. RAM                                     d. All of these

19. A computer can understand
    a. Machine language                        b. High level language
    c. Assembly language                       d. None of the above

20. Which is the fastest RAM?
    a. SRAM                                    b. DRAM
    c. Both                                    d. None of these

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## ( <u>Descriptive</u> )

Time : 2 hrs. 30 min.                                                        Marks : 50

### [ Answer question no.1 & any four (4) from the rest ]

1.  Discuss the features, advantages and disadvantages of                    10
    generation of computer.

2.  What do you mean by MUX? Design a 4:1 MUX with the help of               10
    truth table.

3.  a. Find the binary equivalent of the decimal number 13.25.          5+5=10
    b. Convert ( $11011.1011)_2$ into decimal.

4.  a. Subtract $(10)_{10}$ from $(15)_{10}$ in 1's Compliment method.   5+5=10
    b. Subtract $(20)_{10}$ from $(15)_{10}$ in 2's compliment method.

5.  a. Define DEMUX. Design a 1:2 DEMUX.                                 6+4=10
    b. Convert $(101110101111)_2$ into hexadecimal number.

6.  a. Explain with the help of diagram the Computer architecture.      5+5=10
    b. What Do you mean by Universal gate? Realize an OR gate
       using NAND gate only.

7.  Define Full -Adder. Design a Full- adder with the help of truth          10
    table.

8.  Write short notes on the followings:                                5+5=10
    a.    Half-Subtractor.
    b.    Half Adder.

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[3]