U.G. 2nd Semester Examination - 2020
COMPUTER SCIENCE
[PROGRAMME]
Course Code : CMSP/CC-L-201B-T
[NEW SYLLABUS]

Full Marks : 60   Time : $2\frac{1}{2}$ Hours

The figures in the right-hand margin indicate marks.

Candidates are required to give their answers in their own words as far as practicable.

GROUP–A

1. Answer any **ten** of the following questions:

    $2\times10=20$

    a)   Write down the truth table of AND gate.

    b)   Convert (11100011) this number into its decimal equivalent.

    c)   What are the major components of CPU?

    d)   Convert the $(25)_2$ to its binary equivalent.

    e)   What do you mean by parallel transfer and serial transfer?

    f)   Differentiate between CPU and I/O processors.

    g)   What do you mean by addressing modes?

    h)   What is 1's complement and 2's complement?

    i)   What do you mean by start bit, character bit and stop bit in serial asynchronous transfer?

    j)   What is need of cache memory?

    k)   What do you mean by flip flop?

    l)   Subtract two Binary numbers 1111100 and 1111010.

GROUP-B

Answer any **four** of the following questions: $5\times4=20$

2. Explain input output operation with proper diagram.
    5

3. Write down the truth table, logical expression, block diagram and circuit of full adder.   5

4. Explain briefly memory reference, register reference, input-output instruction. Differentiate between direct and indirect addressing. $3+2=5$

5. What is an Instruction cycle? Draw and explain flowchart for instruction cycle. $2+3=5$

6. Explain De-Morgan's Theorems and prove these Theorems using Truth table. $2+3=5$

7. Differentiate in detail between RISC and CISC architecture.   5

GROUP-C

Answer any **two** of the following questions: 10×2=20

8.   What do you understand by cache memory? Explain the direct mapping concept used in cache memory with examples.   2+8=10

9.   What is write through method and write back method? Explain with block diagram of RAM chip and ROM chip.   3+7=10

10.   Explain in detail about the different addressing modes and give an example in each case.   2+8=10

11.   Write short notes on any **two** of the following:

                                     5×2=10

     a)   Demultiplexer

     b)   Opcode

     c)   Computer registers

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