BACHELOR OF COMPUTER APPLICATIONS (C.B.C.S.) (2014 COURSE)
B.C.A. Sem-II : WINTER : 2021
SUBJECT: COMPUTER ORGANIZATION & ARCHITECTURE

Day : Monday | Time : 02:00 PM-05:00 PM
Date : 10-01-2022 | **W-11029-2021** | Max. Marks: 100

N.B.:

1) Attempt any **FOUR** questions from Section –I and any **TWO** questions from Section –II.
2) Figures to the right indicate **FULL** marks.
3) Answers to both the sections should be written in **SAME** answer book.

SECTION-I

Q.1 Explain the functioning of 4 bit binary adder-subtractor with help of block diagram. **(15)**

Q.2 What is cache memory? Why it is necessary? Explain various mapping techniques associated with cache memory. **(15)**

Q.3 What do you mean by DMA? Discuss DMA transfer with help of DMA controller. **(15)**

Q.4 What is Interrupt? Explain various types of interrupts in detail. **(15)**

Q.5 Explain the following terms: **(15)**
i) Multiplexer ii) IC's iii) CISC

Q.6 What is an Interface? Explain Input-Output Interface in detail. **(15)**

Q.7 Write short notes on any **TWO** of the following: **(15)**

a) Flip-flops
b) Machine Language
c) RAM

SECTION-II

Q.8 The sequential circuit has two D flip flops A and B, two inputs x and y one output z. The flip flop input equations and circuit output is as follows: **(20)**

$D_A = x'y + xA$

$D_B = xA + y'B$

$z = y'x' + AB$

i) Draw logic diagram . ii) Tabulate state table.
iii) Draw state diagram.

Q.9 Solve the following: **(20)**
i) Find 2's complement: 11001100
ii) Solve using 2's complement: 11100011- 00111111
iii) Solve using stack: [(3 +4) (2+4+5)] (3*6)
iv) 100101* 111

Q.10 Explain the functioning of 4 bit bidirectional shift register with parallel load with help of block diagram. **(20)**

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