BACHELOR OF COMPUTER APPLICATIONS (CBCS - 2018 COURSE)
B.C.A. Sem-II :SUMMER- 2022
SUBJECT : COMPUTER ORGANIZATION & ARCHITECTURE

Day : Monday
Date : 6/6/2022

S-18759-2022

Time : 10:00 AM-01:00 PM
Max. Marks : 60

N.B.:

1) **Q. No. 4** from Section –I is **COMPULSORY**.
2) Answer any **TWO** questions from Questions **1, 2 & 3** in **Section –I.**
3) Answer any **TWO** questions from Questions **5, 6 & 7** in **Section –II.**
4) Figures to the right indicate **FULL** marks.
5) Answers to both the sections should be written in **SAME** answer book.

SECTION-I

Q.1 **a)** What are different types of addressing modes? Explain six addressing modes with proper example. **(06)**

b) With the help of proper diagram, discuss Memory Hierarchy. **(06)**

Q.2 **a)** Construct and discuss 3 x 8 decoder with the help of 2x4 decoder. **(06)**

b) Explain various instruction formats with the help of examples. **(06)**

Q.3 **a)** Discuss term Machine Language, Assembly Language and Assembler. **(06)**

b) Explain instruction cycle with the help of flow chart. **(06)**

Q.4 Write short notes on any **THREE** of the following: **(12)**

a) Flip Flop
b) Bus and Memory Transfer
c) Peripheral Devices
d) Types of interrupts
e) Number system

SECTION-II

Q.5 **a)** Draw the circuit diagram and tabulate the truth table. **(06)**
$(BC' + A'D)(AB + CD')$

b) Prove $A + A'B + A'B'C + A'B'C'D = A + B + C + D$ **(06)**

Q.6 Solve the following: **(12)**

a) Simplify the following Boolean function using K-map
F(A, B, C, D) $\sum(0,2,4,5,6,7,8,10,13,15)$

b) 10010 * 111

c) 10000010 – 01010101 using 2's complement method.

Q.7 A sequential circuit with two D flip-flops A and B, two inputs x and y and one output z is specified by the following input equations: **(12)**

$D_A = x'y + xA$

$D_B = x'B + yA'$

$Z = xA + yB'$

a) Draw logic diagram
b) Derive the state diagram
c) Derive the state table

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