

Roll No



**PRESIDENCY UNIVERSITY
BENGALURU**

**SCHOOL OF INFORMATION SCIENCE
END TERM EXAMINATION - JUN 2023**

Semester : Semester II - 2022

Course Code : CSA2002

Course Name : Sem II - CSA2002 - Computer Organization

Program : BCA&BCG

Date : 14-JUN-2023

Time : 1.00PM - 4.00PM

Max Marks : 100

Weightage : 50%

Instructions:

- (i) Read all questions carefully and answer accordingly.
- (ii) Question paper consists of 3 parts.
- (iii) Scientific and non-programmable calculator are permitted.
- (iv) Do not write any information on the question paper other than Roll Number.

PART A

ANSWER ALL THE QUESTIONS

(5 X 2 = 10M)

1. Specify the different types of external connections required for organization of memory chip?
(CO3) [Knowledge]
2. Write the instructions in RTN for fetching the content of PC to store in IR and update the PC by 4 bytes?
(CO3) [Knowledge]
3. Explain Locality of Reference and its types?
(CO3) [Knowledge]
4. Find the delay of all carry bits and sum bits for a 4 bit ripple carry adder?
(CO2,CO4) [Knowledge]
5. Specify the hardware devices of I/O interface to connect an I/O device to the bus?
(CO2) [Knowledge]

PART B

ANSWER ALL THE QUESTIONS

(5 X 10 = 50M)

6. With a neat diagram explain the internal organization of a [64*16] Memory chip. Find the required number of external connections ?
(CO3) [Comprehension]

7. Differentiate the following with suitable example instructions:
a) Auto increment and Auto decrement addressing mode
b) Push and Pop operation of stack
c) Two address and three address instruction format
d) Big indian and little indian byte addressability

(CO3,CO2) [Comprehension]

8. Write short notes on
a) Clock rate
b) Subtraction of a signed numbers
c) Overflow
d) Character representation
e) Control unit

(CO1) [Comprehension]

9. With a neat diagram explain I/O mapping methods.

(CO2) [Comprehension]

10. Write the control sequence for the following instructions.
a) Move (R1), R2
b) Move R2, (R1)
c) MOVE R1, R4
d) ADD R1, R2, R3

(CO3) [Comprehension]

PART C

ANSWER ALL THE QUESTIONS

(2 X 20 = 40M)

11. a) Perform the multiplication on the following signed binary numbers using Booth's Algorithm?
11(Multiplicand)
5(multiplier)
b) Explain 4 carry look a head adder/addition with suitable diagram?

(CO4) [Application]

12. a) Write the steps for restoring division and draw the flow chart.
b) Perform Restoring Integer division on the following:
12(Dividend)
4(Divider)

(CO4) [Application]