Enrolment No. | | | | | | | |

S_2(PCA02C13) MCA

MCA 2nd Semester End Term Examination- 2022

Name of Subject: Computer Organization and Architecture

Paper Code: PCA02C13

Full Marks: **50** Time: **2 Hour**

[The figures in the margin indicate full marks for the question]

Group A: Very Short Questions (Any Five)

(2X5=10)

1) Express the names of different types of cache replacement algorithms.

2) Write two advantages and disadvantages of pipelining architecture.

3) Explain the function of the Microprogram counter (μ PC) in the Control unit.

4) Define Auxiliary Carry Flag and Overflow Flag.

5) Explain the Memory Operation: $R_1 \leftarrow M[R_1]$

6) Draw the sketch of the Three BUS organization structure.

Group B: Short Answer Questions (Any Five)

(4X5=20)

7) Explain the concept of virtual memory with examples and its advantages.

8) Compare RISC Architecture and CISC Architecture.

9) How IR and PC registers are used for fetching the instruction for execution.

10) Explain the direct mapping in cache memory with an example.

11) Consider the arithmetic expression:

(4*5) + (5*7)

Convert the expression to the reverse polish notation and show the stack operations for evaluating the result.

12) Write a short Note on MIMD Parallel Architecture.

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S_2(PCA02C13) MCA

MCA 2nd Semester Mid Term Examination- 2022

Name of Subject: Computer Organization and Architecture

Paper Code: PCA02C13

Full Marks: **20**

Time: **1 Hour**

[The figures in the margin indicate full marks for the question]

Group A: Very Short Questions (1 mark each)

(1X4=4)

1) Express IEEE standard double-precision floating-point format.

2) Define MDR.

3) Explain Array Multiplier.

4) List the Types of shift Micro operation.

Group B: Short Questions (2 marks each)

(2X4=8)

5) Is there any alternative to von-Neumann architecture? Justify your answer.

6) Compare Computer organization and Computer architecture?

7) Classify the computer level hierarchy with proper examples.

8) Show the memory transfer function in RTL.

Group C: Descriptive Questions (4 marks each)

(4X2=8)

9) Design Hardware Implementation of following controlled Transfer with Timing Diagram.

P: R2 ← R1

10) Calculate the signed binary multiplication of (+3) and (-4) using Booth's Algorithms.

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