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MCS-402/DCA-102

Introduction to Computing

(MSCIT/PGDCA/DCA)

1st Semester Examination, 2023 (June)

Time : 2 Hours] **[Max. Marks : 70**

Note : This paper is of Seventy (70) marks divided into two (02) Sections A and B. Attempt the questions contained in these sections according to the detailed instructions given therein. Candidates should limit their answer to the questions on the given answer sheet. No additional (B) answer sheet will be issued.

SECTION–A

(Long Answer Type Questions)

Note : Section 'A' contains Five (05) long answer type questions of Nineteen (19) marks each. Learners are required to answer any Two (02) questions only.

(2×19=38)

1. Define a procedure, biggest, that takes three inputs, and produces as output the maximum value of the three inputs.

2. Draw a parse tree for the Scheme expression (+400 (*6(+ 66))) and show how it is evaluated.

3. What is a composite procedures? Explain with the help of a diagram.

4. Do comparison expressions have higher or lower precedence than addition expressions? Explain why, using the grammar rules.

5. What is the difference between imperative programming and functional programming? Explain in detail.

SECTION–B

(Short Answer Type Questions)

Note : Section 'B' contains Eight (08) short answer type questions of Eight (08) marks each. Learners are required to answer any Four (04) questions only. (4×8=32)

1. What is a compiler? How it is different from an interpreter?

2. Define the XOR? function using only NAND functions.

3. Explain how machine can compute.

4. Define transitive property with the help of an example.

5. Define data abstraction.

6. Explain Why Natural Languages cannot be used as programming languages?

7. Is $\Theta(2^n)$ equivalent to $\Theta(3^n)$? Either prove they are identical, or prove they are different.

8. Define global environment.