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MIT(CS)-301

Introduction to Computing

Master of Science (Cyber Security)

3rd 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 Information Process. What is an algorithm? Define a mechanical procedure.

2. What is parse tree? Define a base case. What is proof by construction? Explain.

3. Define programming languages. What is a compiler? How it is different from an interpreter?

4. What is Halting Problem? Explain. What is brute-force approach?

5. Define the list-find-best procedure using the list-accumulate procedure with example and evaluate its asymptotic running time.

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 the difference between imperative programming and functional programming? Explain Imperative Control Structure.

2. Define a class. Explain the concept of subclass and superclass in OOP. What are constructors in OOP?

3. Define the sequence of factorials as an infinite list using delayed evaluation. What is lazy evaluation?

4. What is the difference between an algorithm and a procedure?

5. State Russell's paradox.

6. What is Universal Turing Machine?

7. Differentiate Computers with other machines.

8. Explain how to measure input sizes and running times.

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