A–1292

Total Pages : 3 **Roll No. .....**

MCS-402/DCA-102/MIT(CS)-301

Introduction to Computing

Examination February, 2026

Time : 2:00 Hrs. 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 answers to the questions on the given answer sheet. No additional (B) answer sheet will be issued.

Section–A

(Long Answer Type Questions) (2×19=38)

***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.

1. What is Codel's Incompleteness Theorem ? Explain in detail.

2. What is Object-Oriented Programming ? Explain the concept of Inheritance and inheritance hierarchy.

3. Explain the concept of overriding methods.

4. Define a class. Explain the concept of subclass and superclass in OOP.

5. (a) What is sorting ? How is it performed ?

   (b) Define transitive property with the help of an example.

Section–B

(Short Answer Type Questions) (4×8=32)

***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.

1. Explain Recursive Transition Network with the help of an example.

2. (a) What is a compiler ? How is it different from an interpreter ?

   (b) Define a procedure. How can it be used to solve a problem ?

3. What is the difference between imperative programming and functional programming ?

4. Define the following terms :

   (a) Quicksort

   (b) Binary Search

5. Explain dynamic programming.

6. (a) Define CPU time, Real time and GC time.

   (b) Define asymptotic notations. Why they are used ?

7. Define the list-reverse procedure using list-accumulate.

8. (a) Data abstraction

   (b) Defensive programming

****