

U.G. 3rd Semester Examination - 2020

MATHEMATICS

[HONOURS]

Course Code : MATH(H)-CC-P-07

[PRACTICAL]

SET-13

Full Marks : 20

Time : 2 Hours

The figures in the right-hand margin indicate marks.

Symbols and notations have their usual meanings.

1. Answer any **one**: 10×1=10

- i) From the following table, find the value of $f(1.17)$ by implementing Newton's forward interpolation formula in C programming language:

x	1.00	1.05	1.10	1.15	1.20	1.25	1.30
$f(x)$	2.7183	2.8577	3.0042	3.1582	3.3201	3.4903	3.6693

- ii) Write a C program to solve the equation $x^3 - 5x + 3 = 0$ by using Newton-Raphson method.

- iii) Write a C program to evaluate the integral

$$\int_0^2 \frac{1}{x^3 + x + 1} dx \text{ by Simpson's one-third rule with } h=0.25.$$

2. Answer any **one**: 10×1=10

- i) Write a C program to sort the following set of real numbers in ascending order:

10.2, 14.6, 3.9, 8.6, 5.8, 13.5, 2.4, 7.5, 4.5 and 11.2.

- ii) Write a C program to evaluate

$$\sum_{m=1}^{20} \sum_{n=1}^{20} \frac{1}{m^2 + n^2}.$$

- iii) Write a program to find the sum of two square matrices of order $m \times m$.
