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BSC/Part-II/COS(H)-V(Prac)(Set-II)(Unit-I)

2019

Part – II

COMPUTER SCIENCE

(Honours)

Paper – V

(Practical)

(Set – II)

Full Marks – 50

Time : 4 Hours

The figures in the right-hand margin indicate marks.

Candidates are required to give their answers in their own words as far as practicable.

Unit – I

Answer any **two** questions taking one from each group on lottery basis :

Group – A

20×1

(C–Programming)

1. Write a program for finding H.C.F and L.C.M. of two numbers.

P.T.O.

2. Write a program to find all the Armstrong numbers between 100 to 999.

3. Write a program to find the value of $\sin(x)$ from the

following series :
$$\sin(x) = x - \frac{x^3}{3} + \frac{x^5}{5} - \frac{x^7}{7} + \dots$$

Use it to find the value of $\sin(x)$ for $x=30^\circ$ & 45° taking terms $\geq 10^{-3}$.

4. Write a program to print leap years 1901 to 2100.

5. Write a program to convert a decimal number to its equivalent binary number.

6. Write a program to convert the upper case to lower case letters and vice-versa.

7. Write a program to find the multiplication of two matrices.

8. Write a C program to sort a set of strings in alphabetic order. The set of string will be supplied by the examiner.

(Numerical programming using C)

1. Compute the value of y , for $x=3.75$ from the table using Lagrange's interpolation.

x	3.5	4.0	4.8	5.5
y	1.205	2.656	3.65	5.66

2. Find $f(1.5)$ using Newton's forward interpolation formula.

x :	1	2	3	4	5	6	7	8
f(x) :	1	8	27	64	125	216	343	512

3. Find the real root of the equation $x^3 - x - 2 = 0$ by Regula-Falsi method.

4. Evaluate $\int_1^2 e^{-x} dx$ by taking $h=0.1$ using Trapezoidal rule.

5. Solve the following equation using Euler's method for $x=1$, by taking $h=0.2$ $\frac{dy}{dx} = (x+y)$, $y=1$, when $x=0$.

6. Write a program to find a real root of $f(x)=0$ by Bisection method : $f(x) = x^3 + x^2 + x + 7 = 0$
7. Write a program to find a real root of $f(x) = x^3 + x - 1 = 0$ by iteration method.
8. Solve the system of Linear equations by Gauss-Seidal method :
- $$10x + y + z = 12$$
- $$2x + 10y + z = 13$$
- $$2x + 2y + 10z = 14$$

Viva-voce : 5 marks

Practical Note book : 5 marks
