NEW

2015

BCA

3rd Semester Examination

MICROPROCESSOR LAB

PAPER—2197 (SET-2)

(PRACTICAL)

Full Marks : 100

Time : 3 Hours

The figures in the margin indicate full marks.

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

Illustrate the answers wherever necessary.

Group—A

(Microprocessor Lab)

Answer any *one* question (*Lottery Basis*) : 1×25

1. Write a program for 8085 upto arrange 8-bit unarranged data array containing N-number of data in descending order. 25

2. Write a program for 8086 upto find no.of '0' and '1' in a given 8-bit data. 25

3. Write a program for 8085 upto move 6 number of 8-bit data (stored in an array starting from F101H) from one memory block to another (i.e., F201H to F206H) reversing the sequence of data array. 25

4. Write a program for 8085 upto multiply two 8-bit number using successive addition method. 25

5. Write a program for 8085 up with 8255 to display binary data at port A as given at port B. 25

6. Write a program to compute the average of six numbers (*using 8086*) —

   DATA (H) : 14, 1A, 2D, D4, 64, 7E. 25

7. Write a program that will convert 2-digit BCD number to the equivalent binary form. 25

8. Write an assembly language program to separate even and odd numbers from a data array. 25

9. Write a program to check a 8-bit number is even or odd for 8085. 25

10. Write a program to blink a light at post A to 8255 in every 1 second. The 8255 is connected with 8085 microprocessor. 25

Viva — 05

Practical Note Book — 05

[Internal Assessment — 15]

Group—B

(Numerical Lab)

Answer any *one* question (*Lottery Basis*) : 1×25

1. Compute the root of the equation $3x^2 + 5x - 40 = 0$ correct to 3 decimal places which between 1 & 2. Using Bisection method. 25

2. Evaluate f (1·1) from the table using Newton forward formula. 25

x	0	1	2	3	4	5
f(x)	0	3	8	15	24	35

3. Solve Gauss–Jacobi Method : 25

$$20x_1 - x_2 + x_3 = 23{\cdot}28$$
$$x_1 + 15x_2 - x_3 = 29{\cdot}92$$
$$2x_1 - x_2 - 20x_3 = -55{\cdot}64$$

4. Find the value of f (x) when x = 1·5 from the following interpolates by using Lagrange interpolation. 25

5. Evaluate the integal using Simpson's $\frac{3}{8}$ rule :

$$\int_{-1}^{1} |x| x^2 dx$$

25

6. Approximate y where $x = 0{\cdot}1$ and $x = 0{\cdot}2$ given that $y = 1$ when $x = 0$ and $h = 0{\cdot}1$ using Runga–Kutta method.

7. Find the value of y when $x = 1$, given $\frac{dy}{dx} = x + y$ and when $x = 0$, then $y = 1$ using Eular's method. 25

8. Find the Eigen values of the matrix : 25

$$\begin{bmatrix} 3 & 0 & 3 \\ 1 & 3 & 0 \\ 3 & 0 & 3 \end{bmatrix}$$

9. Calculate real root of the equation $x^3 + 2x - 2 = 0$ by Regular Fals; method, correct upto five significant figures. 25

10. Evalute $\int_0^3 \left(2x - x^2\right) dx$ taking 6 intervals by trapezoidal rule. 25

Viva — ***05***

Practical Note Book — ***05***

[Internal Assessment — ***15]***