B.E. Fourth Semester (Electrical Engineering (Electronics & Power) / Power Engineering) (C.B.S.)

Computer Programming

P. Pages: 2 Time: Three Hours



NKT/KS/17/7282/7309

Max. Marks: 80

- Notes: 1. All questions carry marks as indicated.
 - 2. Solve Question 1 OR Questions No. 2.
 - Solve Question 3 OR Questions No. 4. 3.
 - Solve Question 5 OR Questions No. 6. 4.
 - Solve Question 7 OR Questions No. 8. 5.
 - Solve Question 9 OR Questions No. 10. 6.
 - Solve Question 11 OR Questions No. 12. 7.
 - Due credit will be given to neatness and adequate dimensions. 8.
 - Assume suitable data whenever necessary. 9.
 - Illustrate your answers whenever necessary with the help of neat sketches. 10.
- What are the various data types available in 'C'? Give their ranges.

- 7
- What are the program control statements available in 'C'? Explain in brief. b)

7

OR

- Explain various storage classes available in 'C'. State the importance of storage class. 2. a)
 - 7

7

- Write a function program to calculate factorial of a number and use it to find the sum of b) the series -
 - $1 + \frac{1}{2!} + \frac{1}{3!} + \frac{1}{4!} + \dots + \frac{1}{10!}$
- What do you understand by 'Array'? Explain the methods of initialization of array 3. a) elements with example.

Write a program to calculate average of 20 numbers using array. b)

6

Explain different methods of searching an element in an array. Explain binary search 4. a) technique.

Write a C program for finding sum of two 3 x 3 matrices. Resultant matrix must be b) printed as output of the program.

6

What is meant by the following terms? 5. a)

7

Nested Structure i)

ii) Array of Structures

What is a pointer? Write a program in 'C' to interchange values of two variables using pointers.

OR

0.	a)	what is a structure? How is it different from an array? Explain how a structure is defined with an example.	10
9	b)	Explain the following file functions and give their syntax. i) fopen() ii) fprintf() iii) fseek()	6
		III) ISEEK ()	
7.	a)	Explain the characteristics of object oriented programming.	7
	b)	What are objects and classes in C++? Explain with example.	6
		OR	
8.		Write short notes on -	
		i) Data Abstraction.	3
(0	3	ii) Polymorphism	3
16	9)	iii) Data Hiding and Encapsulation	3
		iv) Inheritance	4
9.	a)	What are the types of files available in MATLAB? Explain with example.	7
	b)	Explain the purpose of following MATLAB commands: i) lookfor ii) rank iii) title	6
		iii) title OR	
10.	a)	What are the various decision making statements available in MATLAB? Explain the switch - case statement with an example.	7
	b)	Write a MATLAB program to print Fibonacci series upto 50 terms.	6
11.	a)	Write a MATLAB program for sorting the given array in ascending order by using bubble sort mechanism.	7
		A = [17, 4, 23, 68, 9, 12, 42]	
	b)	Find transpose, inverse and determinant of the matrix $X = \begin{bmatrix} 10,12,14; 4,8,9; 24,12,6 \end{bmatrix}$	7
12.	a)	OR Write a MATLAB program for plotting of a curve $y = \sin x$; $0 \le x \le 4\pi$. The graph should have a title with appropriate labels.	7
E	b)	Write appropriate MATLAB commands for the following set of equations for finding - i) Rank of matrix ii) Transpose of matrix iii) Inverse of matrix if it exists. $x_1 + 2x_2 - 4x_3 = 12$ $-3x_1 + x_2 + 2x_3 = 4$ $2x_1 + 4x_2 + 3x_3 = 0$	700
