

Reg. No.																				
----------	--	--	--	--	--	--	--	--	--	--	--	--	--	--	--	--	--	--	--	--

Question Paper Code	12727
---------------------	-------

B.E. / B.Tech. - DEGREE EXAMINATIONS, APRIL / MAY 2024

First Semester

Computer Science and Business Systems

20ESPC106 - FUNDAMENTALS OF COMPUTER SCIENCE

Regulations - 2020

Duration: 3 Hours

Max. Marks: 100

PART - A (10 × 2 = 20 Marks)

Answer ALL Questions

	<i>Marks</i>	<i>K- Level</i>	<i>CO</i>
1. Write an algorithm to find the biggest among three numbers.	2	K1	CO1
2. Differentiate flow chart and algorithm.	2	K2	CO1
3. Differentiate Call by value and Call by reference.	2	K2	CO2
4. Write a program to find the factorial of a given number using recursion.	2	K1	CO2
5. How to access nth element in an array?	2	K1	CO4
6. Write a function using C that swaps the value of two integers using pointers.	2	K1	CO4
7. Write down the syntax for Union.	2	K1	CO5
8. How do you access the members of a structure?	2	K1	CO5
9. List out the types of Error handling functions.	2	K1	CO6
10. What is a debugging macro?	2	K1	CO6

PART - B (5 × 13 = 65 Marks)

Answer ALL Questions

11. a) Explain in detail about the Structure of C program and define each section with a relevant example.	13	K2	CO1
--	----	----	-----

OR

b) Illustrate the various Date types and Operators in C Programming with suitable examples.	13	K2	CO1
---	----	----	-----

12. a) Explain in detail about switch statement. Write a program to check whether the given character is vowel or not.	13	K2	CO2
--	----	----	-----

OR

b) Demonstrate a C program to evaluate the net salary of an employee given the following	13	K2	CO2
--	----	----	-----

Constraints:

DA : 16% of Basic salary

HRA : 22% of Basic salary

TA : 17% of Basic salary

Tax cuts – a) PF :15% of Basic salary and

b) IT: 17% of Basic salary

$$\text{Net Salary} = \text{Basic Salary} + \text{DA} + \text{HRA} + \text{TA} - (\text{PF} + \text{IT})$$

13. a) Explain how to declare and initialize a two dimensional array in C. 13 K2 CO4
Write a C program for Addition of 2 matrices.

OR

- b) Write a program in C to print a string in reverse using pointer and summarize the features of pointers. 13 K2 CO4

14. a) Illustrate a C program to display the grade of the students in an Institution. The grading is done according to the following criteria. 13 K2 CO5

% of Marks	Grade
75 to 100	Honours
60 to 74	First Class
50 to 59	Second Class
40 to 49	Third Class
0 to 39	Fail

OR

- b) In an organization, the employees are grouped according to their basic pay for the purpose of certain perks. The pay-range and the number of employees in each group are as follows: 13 K2 CO5

Group	Pay-Range	No of Employees
1	0 to 1500	12
2	1501 to 3000	23
3	3001 to 4500	35
4	4501 to 6000	20
5	0 to 39above 6000	11

Demonstrate a C program to display the pay range and the number of employees in each group.

15. a) Explain in detail about Unix System Interface. 13 K2 CO6

OR

- b) Illustrate the concept of makefile utility in detail. 13 K2 CO6

PART - C (1 × 15 = 15 Marks)

16. a) Explain in detail about Looping Statements in 'C'. 15 K2 CO3

OR

- b) Explain in detail about Functions. 15 K2 CO3