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(FOR THE CANDIDATES ADMITTED **24UMS408**

DURING THE ACADEMIC YEAR 2024-2025 ONLY) **REG.NO. :**

N.G.M. COLLEGE (AUTONOMOUS) : POLLACHI

END-OF-SEMESTER EXAMINATIONS: MAY 2026

B.Sc., MATHEMATICS **MAXIMUM MARKS: 75**

SEMESTER -IV **TIME : 3 HOURS**

PART - III

24UMS408 – PROGRAMMING IN 'C'

SECTION – A (10 X 1 = 10 MARKS)

ANSWER THE FOLLOWING QUESTIONS. (K1)

1. Variables are used in more than one function and it is called _____ variables.

a) main b) global c) inside d) void

2. Reading a single variable can be done by using _____ function.

a) getchar() b) char() c) putchar() d) scanf()

3. The header file _____ is required when using character handling functions.

a) stdio.h b) stdlib.h c) ctype.h d) string.h

4. A called function can return _____ value per call.

a) one b) two c) no d) three

5. _____ returns the number of bytes needed for the variable.

a) size() b) card() c) modulus() d) sizeof()

ANSWER THE FOLLOWING IN ONE (OR) TWO SENTENCES (K2)

6. What are the categories of the characters in C?

7. What do you mean by backward jump?

8. Write down the types of arrays.

9. Write down the two places in a C program in which prototype declaration may be placed.

10. What do you mean by 'call by reference'?

SECTION – B (5 X 5 = 25 MARKS)

ANSWER EITHER (a) OR (b) IN EACH OF THE FOLLOWING QUESTIONS. (K3)

11. a) Write down the conditions for declaring variable names.

(OR)

b) Write a program to convert a given number of days into months and days using integer arithmetic.

12. a) Write down the general points to keep in mind while writing a scanf statement.

(OR)

b) Write a program to evaluate the power series e^x.

13. a) Write a program using a single subscripted variable to evaluate $\sum_{i=1}^{10} x_i^2$.

(OR)

b) Write a program to read a line of text containing a series of words from the terminal.

14. a) Explain the function definition.

(OR)

b) Write a function **power** that computes x raised to the power y for integers x and y and returns double-type value.

15. a) Write down the benefits of pointers in C.

(OR)

b) Write a program to illustrate the use of pointers in arithmetic operations.

SECTION – C (5 X 8 = 40 MARKS)

ANSWER EITHER (a) OR (b) IN EACH OF THE FOLLOWING QUESTIONS.

(K4 (Or) K5)

16. a) Discuss various data types in C.

(OR)

b) Discuss type conversions in expressions.

17. a) Explain the 'else if ladder' with example program.

(OR)

b) Explain 'for' statement with example program.

18. a) Write a C program using a two dimensional array to compute and print the following from the table.

	Item 1	Item 2	Item 3
Girl 1	310	275	365
Girl 2	210	190	325
Girl 3	405	235	240
Girl 4	260	300	380

i. Total value of sales by each girl
ii. Total value of each item sold
iii. Grand total of sales of all items by all girls.

(OR)

b) Write a program that would sort a list of names in alphabetical order.

19. a) Explain the arguments which have no return values in C.

(OR)

b) Explain recursion in C.

20. a) Explain the concept 'pointers and arrays' with example program.

(OR)

b) Explain the concept 'pointers to arrays' with example program.

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