

PSG COLLEGE OF ARTS & SCIENCE
(AUTONOMOUS)
BSc DEGREE EXAMINATION DECEMBER 2018
(First Semester)

Branch - **COMPUTER SCIENCE**

PROBLEM SOLVING & PROGRAMMING IN C

Time: Three Hours

Maximum: 75 Marks

SECTION-A DO Marks)

Answer ALL questions

ALL questions carry EQUAL marks (10x1 = 10)

- 1 Program verification is the use of formal, mathematical techniques to debug software and software specifications.
(i) analysis (ii) verification
(iii) validation (iv) None
- 2 Divide and conquer approach is the decomposition of a system into smaller parts in order to comprehend its compositional sub-systems.
(i) divide and conquer (ii) An algorithmic division
(iii) An algorithmic partition (iv) None
- 3 What is the size of an int data type?
(i) 4Bytes (ii) 8Bytes
(iii) Depends on the system/compiler (iv) None
- 4 Which of the following operator takes only integer operands?
(i) + (ii) *
(iii) / (iv) %
- 5 Result of a logical or relational expression in C is
(i) T or F
(ii) 0 or 1
(iii) 0 if an expression is false and any positive number if an expression is true
(iv) None of the mentioned
- 6 Which keyword is used to come out of a loop only for that iteration?
(i) break (ii) Continue
(iii) return (iv) none
- 7 Any C program
(i) must contain Zero or more function (ii). must contain one or more function
(iii) must contain only one function (iv) None
- 8 The default parameter passing mechanism is
(i) call by value (ii) call by reference
(iii) call by default value (iv) none
- 9 Pointer is a variable which stores the address of another variable
(i) int ptr; (ii) int *ptr
(iii) pointer (iv) struct
- 10 _____ is called as 'Value at address' Operator
(i) * (ii) &
(iii) ** (iv) None

Cont...

SECTION - B (25 Marks)

Answer ALL questions

ALL questions carry EQUAL Marks (5x5 = 25)

11 a Discuss the algorithm development and implementation of character to number conversion.

OR

b Discuss the algorithm development and implementation to count number of digits in an integer number.

12 a Explain about bitwise operators in C with suitable examples.

OR

b Discuss about relational operators in C with suitable examples.

13 a Write the general syntax and working of for Statement in C with suitable example program.

OR

b Write a program to find maximum and minimum element in the given one dimensional array of integer numbers.

14 a Write a program using function concept for finding factorial of a number.

OR

b Discuss any five string functions in C with suitable examples

15 a Write a note on defining and declaring structured variable in C.

OR

b Write a program in C to find the maximum and minimum number in an array by passing array as pointer.

SECTION -C (40 Marks)

Answer ALL questions

ALL questions carry EQUAL Marks (5 x 8 = 40)

16 a What do you meant by analysis of algorithms? Discuss in detail with suitable illustrations.

OR

b Discuss with suitable examples the worst case, average case and best case time complexities of an algorithm.

17 a Discuss about various data types in C with suitable examples

OR

b Discuss about (i) Conditional operator in C
(ii) Declaration and assignment statement in C

18 a Write a program to perform arithmetic operations using switch ... in c (Note: addition, subtraction , multiplication and division of two integer numbers)

OR

b Write a program in C to transpose the given matrix.

19 a Discuss about various categories of functions in C with suitable examples.

OR

b Distinguish various storage classes in C

20 a Write a C program using structure variable to prepare a savings bank account for a customer.