PSG COLLEGE OF ARTS & SCIENCE
(AUTONOMOUS)

BSc DEGREE EXAMINATION MAY 2019
(First Semester)

Branch - COMPUTER SCIENCE

PROBLEM SOLVING & PROGRAMMING IN C

Time: Three Hours   Maximum: 75 Marks

SECTION-A (10 Marks)
Answer ALL questions
ALL questions carry EQUAL marks   (10 x 1 = 10)

1   _____ _____ of algorithms is the determination of the amount of time and space resources required to execute it.
  (i)   Analysis   (ii)Execution
  (iii) Implementation   (iv)None

2   _____algorithm works by recursively breaking down a problem into two or more sub-problems of the same or related type and then each problem is solved independently.
  (i)   Dynamic programming   (ii) Greedy
  (iii) Divide and conquer   (iv)None

3   Which of the following is not a valid variable name declaration?
  (i) float PI = 3.14;   (ii) double PI = 3.14;
  (iii) int PI = 3.14;   (iv) pointer *P;

4   Result of a logical or relational expression in C is_____ .
  (i)   T o r F   (ii) 0 or 1
 j (iii) 0 if an expression is false and any positive number if an expression is true
  (iv) none of the mentioned

5   int a[5] = {1, 2,3}, what is the value of a[4]?
 1 0)   3   (ii) 1
 ; (iii) 2   (iv) 0

6   Which keyword is used to come out of a loop only for that iteration?
  (i)   break   (ii) continue
 | (iii) return   (iv) none

7   The default parameter passing mechanism is
  (i) call by value   (ii) call be reference
  (iii) call by default value   (iv) none

8   If the two strings are identical, then strcmp() function returns
  (i)   1   (ii) 0
  (iii)   -1   (iv) none

9   _____operator is called address operator.
  (i)   *   (ii) &
  (iii)   **   (iv) none

10 A structure can contain elements of_____ datatype.
  (i) unique   (ii) same
  (iii) different   (iv) none of these

SECTION - B (25 Marks)
Answer ALL questions
ALL questions carry EQUAL Marks (5 x 5 = 25)

11 a   Discuss the algorithm development and implementation to sum the digits of an integer number.

OR

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

12 a   Write about hierarchy of operators in C with suitable examples.

OR

b   Discuss about relational operators in C with suitable examples.

13 a   Discuss about various type of if......statement in C with suitable examples.

OR

b   Discuss the while......statement in C with suitable example program.

14 a   Discuss any five string functions in C with suitable examples.

OR

b   Write a program to search a string in the given set of strings.

15 a   Distinguish between structure and union with suitable examples.

OR

b   Write a program in C to copy the content of one file to another.

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 identifiers, keywords, constants and variables in C with suitable examples.

OR

b   Discuss about Bitwise and conditional operators in C with suitable examples.

18 a   Discuss about switch... statement in C with suitable example program.

OR

b   Discuss about various types of for.. .statement in C with suitable examples.

19 a   Discuss the following with suitable examples :
   (i) Functions with return variable and formal parameters
   (ii) Functions without return variable and formal parameters
   (iii) Functions with return variable and without formal parameters
   (iv) Functions without return variable and with formal parameters

OR

b   Write a program for arranging given set of strings in ascending order.

20 a   Discuss about the file functions : fopen (), fclose (), fread () and fwrite () with suitable illustrations.

OR

b   Discuss about : (i) array of pointers (ii) pointers as function arguments.

Z-Z-Z   END