

FIRST SEMESTER B.Sc. DEGREE EXAMINATION, NOVEMBER 2018

(CUCBCSS—UG)

Core Course (Computer Science)

BCS 1B 01—PROBLEM SOLVING USING C

(2014 Admissions)

Time : Three Hours

Maximum : 80 Marks

Part A

Answer all questions.

Each question carries 1 mark.

1. Which of the following is not a valid C variable name ?

- (a) int number ;
- (b) float rate ;
- (c) int variable_count ;
- (d) int \$main ;

2. What is the output of the following C code ?

```
#include <stdio.h>
#define a 10
int main()
{
    const int a = 5;
    printf("a = %d\n", a);
}
```

- (a) a = 5.
- (b) a = 10.
- (c) Compilation error.
- (d) Runtime error.

- 3. _____ is the arithmetic operator with lowest precedence.
- 4. A block of memory can be allocated using the function _____.
- 5. Flowchart is a logic development tool (TRUE/FALSE)
- 6. Maximum number of arguments that a function can take is 12 (True/False)

Turn over

7. Which type of files can't be opened using fopen() ?

- (a) .txt. (b) .bin.
(c) .c. (d) None of the mentioned.

8. What is the output of the C code ?

```
#include <stdio.h>
int main()
{
int i=10;
int *p=&i;
printf("%d\n", *p++);
}
```

- (a) 10. (b) 11.
(c) Garbage value. (d) Address of i.

9. If there is any error while opening a file, fopen() will return _____.

- (a) Nothing. (b) EOF.
(c) NULL. (d) Depends on compiler.

10. A _____ is a collection of data items under one name in which the items share the same storage.

(10 × 1 = 10 marks)

Part B

*Answer all five questions.
Each question carries 2 marks.*

11. What is the basic structure of a C program ?
12. What are keywords and identifiers ?
13. Write the general form of conditional operator and explain the evaluation procedure.
14. Explain how one dimensional array is declared and initialized ?
15. How pointer variables are initialized ?

(5 × 2 = 10 marks)

Part C

Answer any five questions.

Each question carries 4 marks.

16. Write an algorithm and draw a flowchart to find first and second largest of n numbers?
17. Write a program to compute the sum of digits of a given integer number to a single digit ?
18. Explain the concept of call by value and call by reference with suitable examples ?
19. Differentiate between structure and union with suitable examples ?
20. Explain any two string handling functions with example ?
21. Write a program to check whether a number is palindrome or not ?
22. What are pointers ? Explain how to perform arithmetic operations on pointers ?
23. Write a program to display the prime numbers in a list of numbers ?

(5 × 4 = 20 marks)

Part D

Answer any five questions.

Each question carries 8 marks.

24. Explain the different types of data types available in C with examples.
25. Explain a) Arrays of structures b) Multidimensional arrays.
26. Explain different looping structures available in C with suitable examples.
27. Write a recursive function to generate and print first n Fibonacci numbers.
28. What are pointer expressions ? Write a program using pointers to compute the sum of all elements stored in an array.
29. Write a program to merge two sorted array in to a single sorted array in ascending order.
30. What are Preprocessor directives in C ? Explain various forms of macro substitution.
31. Write a program that appends one file at the end of another file.

(5 × 8 = 40 marks)