E 7920　　　　　　　　(Pages : 3)　　　　　Reg. No......................

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B.Sc./B.C.A. DEGREE (C.B.C.S.S.) EXAMINATION, NOVEMBER 2017

First Semester

Core Course—METHODOLOGY OF PROGRAMMING AND PROGRAMMING IN C

(Common for B.Sc. Computer Science and B.C.A.)

[2013 to 2016 Admissions]

Time : Three Hours　　　　　　　　　　　　　　　　Maximum Marks : 80

Part A

Answer all questions.

1 mark each.

1. What is an algorithm ?

2. What is testing ?

3. What are conditional operators ?

4. How to declare string variables ?

5. Write the output of the following :

   Code : int arr [ ] = {1, 2, 3, 4, 5,} ;

   Print $f\left("\%d", arr[4] - arr[0]\right)$;

6. What is typecasting ?

7. Compare structure and union.

8. What is th return value if the function is called as int v = fun (10) ; int fun (int n)

   {

   if $\left(n == 1 \mid\mid n == 2\right)$ return 0 ;

   else return $\left(n - 1 + fun\left(n - 2\right)\right)$; }

9. Define pointers.

Turn over

10. What will be the output of the following program segment ?

```
main()
{
    int x ;
    x = 20 ;
    Change (& x)
    printf ("*%d", x) ;
}
Change (p)
int * p ;
{
    * p = * p + 10 ; }
```

(10 × 1 = 10)

Part B

Answer any **eight** *of the following.*
2 marks each.

11. What is bottom up design ?

12. What is looping ?

13. What is the purpose of enumeration data type ?

14. Write the relational operators in C.

15. List the string functions in C.

16. Compare break and continue in C.

17. What are static variables ?

18. How to declare a pointer variable ?

19. Write a C program to find the factorial of a number.

20. Write the syntax of for loop.

21. What is dynamic memory allocation ?

22. Distinguish (*P) [5] and *P[5].

(8 × 2 = 16)

Part C

Answer any **six** *of the following.*
4 marks each.

23. What is flowchart ? Draw a flowchart for finding the prime numbers within a range.

24. Write a note on programming techniques.

25. Explain the input and output statements in C.

26. Explain with an example how to declare 2 dimensional arrays ?

27. Explain array of structures.

28. Explain switch statement in C.

29. Write a function to remove duplicater from an ordered array.

30. Explain different methods to access members of a structure with suitable example.

31. Compare call by value and call by reference with examples.

(6 × 4 = 24)

Part D

Answer any **two** *of the following.*
15 mark each.

32. Explain the various stages in program development.

33. Explain the looping statements in C with example.

34. Explain pointer to structure with example.

35. Write a C program to add, subtract and multiply 2 matrices using functions.

(2 × 15 = 30)