E 2178 (Pages : 3) Reg. No.....

Name.....

B.Sc. DEGREE (C.B.C.S.S.) EXAMINATION, MAY 2015

Second Semester

Vocational Course—PROGRAMMING LANGUAGE I—ANSI-C

(For Vocational Subject—Computer Applications of Model II Physics)

[2013 Admission onwards]

Time : Three Hours Maximum : 60 Marks

Candidates can use non-programmable scientific calculators/Mathematical tables.

Part A

Very Short Answer Questions.
Answer **all** *questions briefly.*
Each question carries 1 mark.

1. What are keywords ? Give *two* examples.
2. What is the need of backlash constants ?
3. Explain the use of a comma operator with an example.
4. Locate errors in the following :—
   (i) Scanf ("%d %f %c," x, y, z) ;
   (ii) Printf ("%s, %f," name, sum) ;
5. Explain the "break" and "continue" statements.
6. Write two different methods of initialising a two-dimensional array ?
7. Give the number elements and size in memory of each of the following :—
   (i) int count [2] [5] ;
   (ii) float price [7] [8] ;
8. What is the need of function declaration ?

(8 × 1 = 8)

Turn over

Part B

Brief Answer Questions.
Answer any **six** *questions.*
Each question carries 2 *marks.*

9. Explain mixed mode operation and automatic conversion.

10. Convert the following mathematical expressions into C expressions :

    (i) $T = \text{Sin}(\theta) + \cos(\phi) - /g - h/ + \sqrt{ab}$.

    (ii) $+\sqrt{1+x} + \dfrac{\log \cos 2\theta}{1+|y|}$.

11. Determine the value of the following if $a = 5, b = 10, c = -6$.

    (i) $a == c \,||\, b > a$.

    (ii) $b > C \,\&\&\, C < 0 \,||\, a > 0$.

12. Can loops be nested within "if-else" statements ? Can "if–else" statements be nested within loops ?

13. Compare the use of "switch" statement with the use of nested "if-else" statements. Which is more convienent ?

14. What is the purpose of "for" statement ? How does it differe from the "while" statement ?

15. Can the names of the formal arguments within a function coincide with the names of other variables defined outside the function ? Explain.

16. What relationship must exist between the data type appearing at the beginning of the first line of the function definition and the value returned by the "return" statement ?

17. State the rule that determines the order in which initial values are assigned to multidimensional array elements ?

18. Can an array be passed from a function to the calling portion of the program via a "return" statement ?

(6 × 2 =12)

Part C

Short Essays / Problems.
Answer any **four** *questions.*
Each carries 4 *marks.*

19. Write a C program which computes the roots of a quadratic equation in all cases.

20. Write a C program which reads in a word, reverses it and displays the reversed word.

21. Explain the various input-output functions in C, with respective format specifications. Give examples.

22. Write a C program, which finds the number of characters ccur consecutively more than two times in a string of 100 characters generated as input.

23. What is meant by recursion ? Give an example of a recursion function. What are their advantages ?

24. Write a C program to read a 2 × 2 matrix and calculate its determinant.

(4 × 4 = 16)

Part D

Long Answer/Essay questions.
Answer any **two** *questions.*
Each carries 12 *marks.*

25. Write a C program to test whether a given word is Palindrome *or* not.

26. Write a C program to sort a list of N names of students in alphabetic order.

27. Write a function in C to check whether a given matrix is orthogonal or not. Call this function from a main function and print the result.

28. Write a C program to generate and print a PASCAL's triangle. Use proper formatted output statement.

(2 × 12 = 24)