UG Odd Semester (CBCS) Exam., December—2017

COMPUTER SCIENCE

(1st Semester)

Course No. : MCSCC–104

(Introduction to Programming Language)

Full Marks : 70
Pass Marks : 28

Time : 3 hours

The figures in the margin indicate full marks for the questions

Answer **five** questions, taking **one** from each Unit

Unit—I

1. (a) Discuss the various uses of computer. 5

(b) Write the characteristics of a computer network. What are the hardwares required to set up a computer network? 5

(c) What are the similarities and differences between Internet and intranet? 4

2. (a) What is an operating system? Write the characteristics of operating system. 8

(b) What is information? Describe the data processing cycle. 6

Unit—II

3. (a) Define a variable. What are the different types of variables? Give an example. 1+6=7

(b) Write any four built-in-functions in FORTRAN. 2

(c) Write a FORTRAN program to determine the area of a triangle using the format

$$\text{Area} = \sqrt{s(s \quad a)(s \quad b)(s \quad c)}$$

where $s \quad \frac{a \quad b \quad c}{2}$. 5

4. (a) What is FORMAT specification? Write the general form of a FORMAT statement. 2

(b) Discuss about *F* format, *X* format and *A* format with an example each. 6

(c) How many columns will be printed using the format 20 FORMAT (1X, 5I2, F6.2)? 1

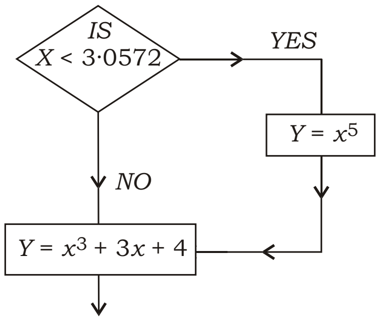
(d) A company gives 65% of the basic pay as bonus to its employees ₹ 200 is paid as exgratia payment. Write a FORTRAN program to read the basic pay and print the bonus, exgratia and the total. 5

UNIT—III

5. (a) Write the FORTRAN program segment for the following flow chart using—

(i) logical IF;

(ii) IF-THEN-ELSE : 4



(b) Write a FORTRAN program to check whether a given integer is a prime number. 5

(c) Write the FORTRAN statements for the following : 2

If *A* is greater than or equal to *B*, then store 10 in *C* else store 5 in *C*.

(d) Write the differences between unconditional GOTO statement and computed GOTO statement. 3

6. (a) What is nested DO Loop? Write the rules for nested DO Loop. 4

(b) Write the following segment as a DO Loop : 2

```
      KOUNT=0
      I=1
  100 READ (  , 5) A
      IF (A.GT.0) KOUNT=KOUNT+1)
      I=I+1
      IF (I.LE.250) GOTO 100
```

(c) Identify the error (if any) in the following program segments and correct it : 4

(i)

```
      DO  4I=100, 250, 5
          X=X/2.0
    4 IF (X.GT.0·0001) KOUNT=
                           KOUNT+1
      CONTINUE
```

(ii)

```
      KOUNT=0
   40 DO 50 I=1,100
      READ ( , 1) A
      IF (A LT.45.0) GOTO 40
   50 KOUNT=KOUNT+1
```

(d) Write a FORTRAN program to print the following output : 4

1 22 333 4444 55555

UNIT—IV

7. *(a)* What is an array? How is an array declared? 2

(b) Write a FORTRAN program to sort an array of *n* elements in ascending order. 6

(c) What is implied DO Loops? 1

(d) Write a FORTRAN program to transpose a matrix. 5

8. *(a)* What is FUNCTION subprogram? What are the advantages of using FUNCTION subprogram? 3

(b) Write the differences between FUNCTION subprogram and SUBROUTINE subprogram. 6

(c) Explain COMMON and EQUIVALENCE statements. 5

UNIT—V

9. *(a)* What is a logical variable? How is a logical variable declared? 2

(b) What is the difference between the following two programs? 5

Program—A	*Program—B*
DO 10 I=1, 5 DATA X/1.0/ X=X/2.0 10 WRITE (,) X	DO 10 I=1, 5 X=1.0 X=X/2.0 10 WRITE (,) X

(c) What is DATA statement? 2

(d) Write a program to concatenate two strings. 5

10. *(a)* What is OPEN statement? Write the general form of an OPEN statement. 3

(b) What is the work done by the following statements? 3

(i) OPEN (4, FILE='A.FLE', STATUS='NEW')

(ii) OPEN (3, FILE='RIN.DAT', STATUS= 'OLD')

(c) Write a program to prepare the electricity bill for a division, given name of the consumer, supply number, last month's meter reading. These pieces of information are available in a file and the current meter reading is given as input. 8

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