6. (a) What do you mean by conditional statements and how are they expressed in Fortran 90 ?

(b) Write a program in FORTRAN 90 to find the roots of a quadratic equation.

7. (a) Write a program in FORTRAN 90 to find the sum of digits of a number using DO loops.

(b) Define Logical constants, variables and expressions. Also define the rules of precedence of operators in evaluating the logical expressions.

8. (a) Explain function subprograms and subroutines.

(b) Define one-dimensional and multi-dimensional arrays. Write a program to print a matrix $A_{2\times3}$.

S.C.No.—M/22/21703106

M.Sc. EXAMINATION, 2022

(Batch 2021s) (First Semester)

MATHEMATICS

21MTH-106

Introduction to MS-Excel and Programming in FORTRAN

Time : 3 *Hours* *Maximum Marks :* 80

Note : Attempt *Five* questions in all. All questions carry equal marks.

1. (a) What do you mean by scenario manager in Excel ?

(b) Define Format free print command.

(c) State different types of Fortran operators.

(d) Correct the following incorrect IF construct :

```
IF (a ≥ b)
    THEN x = y + z
    ELSE x = y – z
ENDIF
```

(e) Evaluate the following expressions :

REAL :: $a = 2.5,\ b = 2.5$

(i) $a + 2.5/b + 4.5$

(ii) $a/2.5/b$.

(f) State Transfer commands and arithmetic IF commands.

(g) What do you mean by cycle statement ?

(h) Define Dynamic Allocation of Arrays.

2. Discuss the following :

(a) Data Filtering and Sorting of Data

(b) Basic Formatting

(c) Conditional Formatting

(d) Data Formatting.

3. (a) Define and explain the different types of charts with their creations and modifications.

(b) Define Formulas in MS-Excel. How formula created and evaluated ? Discuss.

4. (a) Explain Input and Output statements in Fortran 90. Also write the program to find area and perimeter of a rectangle.

(b) Define and discuss the different types of numeric constants which are used in Fortran 90.

5. (a) How can the FORMAT statements write to read data and print outputs in more flexible form ? Explain different format description for numerical data.

(b) Define the following :

(i) IMPLICIT NONE statements

(ii) The ASSIGNMENT statements

(iii) Precedence of operations in expressions

(iv) Declaring variable names.

9. Define the following :

(a) Dummy arguments and actual arguments.

(b) READ AND WRITE statements for sequential and Direct access file.

(c) Library functions.

(d) Pointers in Fortran.

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