UNIVERSITY OF THE PUNJAB

B.S. 4 Years Program / Sixth Semester – 2019

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Paper: FORTRAN Computer Language
Course Code: STAT-318 Part – I (Compulsory) Time: 15 Min. Marks: 10

ATTEMPT THIS PAPER ON THIS QUESTION SHEET ONLY.
Division of marks is given in front of each question.
This Paper will be collected back after expiry of time limit mentioned above.

Q1. a) **Write a FTN expression corresponding to mathematical expression using library functions** (5x1=5)

i) $\sin(x-2y)+e^{xy}-|x^2-y^2|$ ____________________

ii) $\cos(\log_{10}(an+3b^2))$ ____________________

iii) $\dfrac{\sin x}{|y|+\cos xz}$ ____________________

iv) $1+\sin^3(\phi)$ ____________________

v) $1+\dfrac{a}{b+\dfrac{1}{c}}$ ____________________

b) Tick the correct option. (5x1=5)

i) The process of detecting and correcting logical errors in a program is known as
A) Tracing B) Debugging
C) Error D) Accuracy

ii) A Fortran variable is also called
A) Identifier B) Standard
C) Grouping variable D) All of the above

iii) A two dimensional array in Fortran is used to represents a_______.
A) vector B) Matrix
C) Subscript D) None of the above

iv) To terminate a Do loop ________ statement is used.
A) FORMAT B) CONTINUE
C) EndIF D) DIMENSION

v) E- Specification is used for ___________
A) Integer variable B) Real variable
C) Mix mode D) All of the above

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B.S. 4 Years Program / Sixth Semester – 2019

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Paper: FORTRAN Computer Language
Course Code: STAT-318 Part – II
Time: 2 Hrs. 45 Min. Marks: 50

ATTEMPT THIS (SUBJECTIVE) ON THE SEPARATE ANSWER SHEET PROVIDED

Q.2.a) Write a program to find the sum of geometric series. **(5)**

b) Find the final value of K **(5)**

i)
```
      K = 2
10    DO 20  I = 3, 8, 2
      IF(I. EQ. 5) GOTO 20
      K = K + I
20    continue
      K = 2 * K
```

ii)
```
      K = 3
      M = 2
      DO 10  J = 4, 9, M
      IF(J. EQ. 6) GOTO 10
      K = K + 2 * J
10    continue
      K = 3 * K
```

c) write a note on Fortran worksheet. **(5)**

d) write the types of main memory. **(5)**

Q.3. Write a function subprogram to compute f(x) where **(7)**

$$f(x) = \begin{cases} x^{3/2} + 9x & \text{if } x < 0 \\ x^5 + 2\sqrt{x} + 5 & 0 \le x < 9.5 \\ |x| + 2.5 & x \ge 9.5 \end{cases}$$

Q.4. Write a Fortran program which reads an array and then sort this array in ascending order. **(7)**

Q.5. Write a Fortran program which prints multiplication table from 2 to 10. **(7)**

Q.6. Define subprogram and differentiate between function subprogram and subroutine subprogram. **(7)**

Q.7. Differentiate between I specification and F specification. **(2)**