* R B - 0 7 6 5 / 2 0 0 *

RB-0765
Second Year B. Sc. (I.C.) Examination
April / May – 2010
Mathematics : Paper - IV

Time : **3** Hours] [Total Marks : **105**

Instructions :

(1)

નીચે દર્શાવેલ ☛ નિશાનીવાળી વિગતો ઉત્તરવહી પર અવશ્ય લખવી.
Fillup strictly the details of ☛ signs on your answer book.

Name of the Examination :
☛ S.Y. B.Sc. (I.C.)

Name of the Subject :
☛ MATHEMATICS - 4

☛ Subject Code No. : 0 7 6 5 ☛ Section No. (1, 2,.....) : NIL

Seat No. :

Student's Signature

(2) All the questions are compulsory.
(3) Digits to the right indicate marks of question.
(4) Follow usual notations.

1 Answer the following questions : **15**

(1) What are the differences between algebraic and FORTRAN expressions.

(2) What is the purpose of putting 'C' and '*' in column 1 ?

(3) What is the purpose of columns, (i) 6; (ii) 7 to 72 ?

(4) Explain the meaning of statement.

MAX = Y

IF (X.GT.Y) MAX = X.

(5) What is a nested DO LOOP ? Give an example.

2 (a) Draw a flow chart to find a root of quadratic equation. **9**

(b) What are operations ? Give type of operators. **9**

OR

2 (a) Write a short note on I/O statements. 8

(b) Write short notes on : 10
(i) Do statement
(ii) Continue statement.

3 (a) What is the difference between a variable and a constant ? What are the rules for naming a FORTRAN variable ? 9

(b) Find the value of K for the following program segment : 9

```
A = 2.5
I = 3
B = 5.0
A = A – B * I
k = A + B + I
```

OR

3 (a) What is an arithmetic expression ? What do you mean by (i) integer (ii) real (iii) complex expressions with examples. 9

(b) Find the value of AJ : 9

$$AJ = L*(M/2)+C/(2**C1E01/2)-\log(J/2**L)$$

where $J = 4, L = 2, M = 3, C = 4.0$

4 (a) Write a program to find the maximum and minimum among N numbers. 9

(b) What is role of IF statement ? What are the various type of IF statement, also give examples. 9

OR

4 (a) Write a program to test whether a given integer is divisible by 70 or not. 10

(b) Write short notes on READ statement and on PRINT statement. 8

5 (a) Write a program to find product of two matrices of order $m \times n$ and $n \times l$. **10**

(b) Write short notes on : **8**

(i) Subscripted variable

(ii) Dimension statement.

OR

5 (a) Write a program to read an array of n elements $A_i; i = 1, 2, 3, ..., n$ and another element k, check whether the element k is in the array A_i. **9**

(b) What is multidimensional array ? Explain how it is different from one dimensional array. **9**

6 (a) The following data relate to the age of 10 employees and the number of days on which they reported sick in a month : **9**

Age :	20	30	32	35	40	46	52	55	58	62
Sick Days :	1	2	0	3	4	6	5	7	8	9

Calculate Karl-Pearson's coefficient of correlation.

(b) From the following data find the value of x when $y = 3$: **9**

x :	2	5	3	2	1	1	7	3
y :	6	1	0	0	1	2	1	5

OR

6 (a) Calculate the coefficient of correlation from the following data : **10**

Advertising Expenditure Rs. Lakhs	10	12	13	23	27	30
Sales turnover Rs. Crores	40	42	46	48	50	56

(b) Two regression equation are given by, 8

$3x + 2y - 26 = 0$

$6x + y - 31 = 0$

then find,

(i) $\bar{x}$ and $\bar{y}$

(ii) b_{yx} and b_{xy}

(iii) r.
