



RAN-1048

Third Year B. Sc. (Mathematics) (Sem. V) Examination

March / April - 2019

Computer Oriented Numerical Methods - I

Time: 2 Hours]

[Total Marks: 50

સૂચના : / Instructions

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

Name of the Examination:

Third Year B. Sc. (Mathematics) (Sem. V)

Name of the Subject :

Computer Oriented Numerical Methods - I

Subject Code No.: 1 0 4 8

Seat No.:

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Student's Signature

Instructions:

- (1) All questions are compulsory.
- (2) Figures to the right indicate marks of the questions.
- (3) Follow usual notations.

Que-1. Answer the following (any five)

(10)

1. Give reason for the invalidity of the following Real/Integer constants.

(i) 22;5

(iii) 9.5/2.5

(ii) 49(82)

(iv) 12.6E=34

2. Classify following into Real/Integer variable name.

(i) AMOUNT

(iii) MASS

(ii) DIGIT

(iv) INT

3. Explain the reason for the invalidity of the type declaration.

(i) INTEGER BIG, FIRST.

(ii) REAL LEMDA; MU; MASS;

4. Give the reason for the invalidity of the following variable names:
- (i) VNSGU (iii) $\cos \theta$
(ii) K5-10 (iv) I * +3
5. Classify following into Real/Integer constants:
- (i) -14.5E-21 (iii) 5243
(ii) +2.018 (iv) -1194
6. Translate $\frac{(a + b + c)^{i+2018}}{x - y^3}$ into FORTRAN expression.

Que-2. Answer the following (any TWO) (10)

1. Explain different type of symbol and their use in flow chart.
2. Draw a flow chart to arrange three numbers in ascending order.
3. Define the following terms:
 - (i) Source program
 - (ii) Flow chart
 - (iii) Algorithm
 - (iv) Computer
 - (v) Compiler

Que-3. Answer the following (any TWO) (10)

1. Draw a flow chart to generate all Fibonacci numbers up to 200.
2. Given 100 pairs of length and breadth of rectangle. Draw a flow chart to find all rectangles whose area \geq parameter.
3. If I = 1, J = 2, A = 2.0, B = 3.0 then evaluate following:
 - (i) - A * * J + 3.5 * I
 - (ii) (A ** J + 4.5) * I
 - (iii) B/(J + A * * I * * 2)

Que-4. Answer the following (any TWO) (10)

- i. Mango's cost per dozen is given. It is require to prepare a bill for customer in Rupees and paisa. Write a program to prepare bill.
2. What is the final value of A & B?

<p>(i) A = 5 B = 99.0 B = B - A ** 4 A = A - B</p>	<p>(ii) A = 10.0 B = 20.0 I = A B = A A = B</p>
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3. Write a program to find sum of series

$$S = 1 + x + \frac{x^2}{2} + \frac{x^3}{3} + \frac{x^4}{4} + \frac{x^5}{5}$$

Que-5. Answer the following (any TWO)

(10)

1. What is the value of I in the following arithmetic statement?

(i) $I = J/2 * 4 - 3/8 + J ** 3$ (J = 3)

(ii) $I = 6/2 + 3 * (2 ** 3) - 50 * 10$

2. Five digit integer is given. Write a program to print it in a reverse order.

3. Give FORTRAN equivalent for the following given expression:

(i) $\frac{1 - e^{-a\sqrt{x}}}{1 + e^{-[x]}}$

(ii) $e^{up} + \cos 39^\circ$

(iii) $\frac{a}{\sqrt{a^2 + \omega^2}} \cos(\omega t + \phi)$
