

RAN-2103000206030013

T.Y.B.Sc. Mathematics (Sem.-VI) Examination March - 2026

Elective Generic - 6002

Computer Oriented Numerical Methods - II (OLD)

[Total Marks: 50

સૂચના : / Instructions (1) ઉપરોક્ત દર્શાવેલ વિગતો ઉત્તરવહી પર અવશ્ય લખવી. Fill up strictly the above details on your answer book (2) Question 1 is compulsory. (3) All questions carry equal marks. (4) Figures to the right indicate marks of the corresponding questions.	Seat No.: <table border="1" style="width: 100px; height: 30px;"> <tr> <td style="width: 20px; height: 20px;"></td> <td style="width: 20px; height: 20px;"></td> <td style="width: 20px; height: 20px;"></td> <td style="width: 20px; height: 20px;"></td> <td style="width: 20px; height: 20px;"></td> <td style="width: 20px; height: 20px;"></td> </tr> </table> Student's Signature						

Q-1. Answer the following : (Any five). 10

1. Explain the difference between DO statement and Implied DO statement.
2. Why GO TO statement is not extensively used in FORTRAN? Write the general form of GO TO statement.
3. Find the iteration count from DO 45 K = 12, -1.
4. Write the effect of FORMAT: 1X, 1HO.
5. Give the reason for the invalidity of following subscripted expression:

(i) VEL (-7)	(ii) ROLL (9.6)
(iii) B (41)	(iv) MINE (N, (M))

 1. Classify valid and Invalid following statement:
 - (i) GO TO, 22
 - (ii) DO 88 B = 1, 8, 2
 - (iii) DO 25 J = 2, 10, 3
 - (iv) GO TO 33
6. Find output of following numbers whose format are given.

Number	FORMAT
-2.7	F _{6,2}
7. If $A = \begin{bmatrix} 1 & -4 & 7 & -11 & 12 \\ -3 & 5 & -9 & 10 & -12 \\ 4 & -6 & 8 & -21 & 12 \end{bmatrix}$ then write multiple subscript of $A(3,2)$, $A(2,1)$, $A(1,4)$, $A(3,1)$.

Q-2. Answer the following: (Any Two) (10)

- (a) Explain the Block IF statement through flow chart.
- (b) Write a program to find average height of male and average height of female separately in certain class of students.
- (c) Set of n records each containing integers is given. Write a program to find total number of records which contains zero and serial number of such records.

- Q-3. Answer the following: (Any Two) 10**
- Explain the DO statement with illustration.
 - Write a program to find roots of the equation $ax^2 + bx + c = 0$, $a \neq 0$, $b \neq 0$, $c \neq 0$.
 - Analyze following program segment and find out what is printed by PRINT statement?
 - ```

KIR = 2
DO 40 MIR = 3, 9
 KIR = KIR + MIR
 IF (KIR.GT.20) GO TO 50
40 CONTINUE
50 KIR=2*KIR
PRINT*, KIR

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    - ```

DO 10 I = 1,8,2
DO 10 J = 2,6
PRINT*, I*J
10 CONTINUE

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- Q-4. Answer the following: (Any Two) 10**
- Explain DIMENSION statement with valid and invalid illustrations.
 - There are 50 students in a class. The marks obtained by each student in examination is given. Write a program to print out the highest and 2nd highest marks.
 - Write a program to find scalar product of two arrays.
- Q-5. Answer the following: (Any Two) 10**
- Explain: I- Format of FORMAT description.
 - Write a program to solve the equation $x^2 - 3 = 0$ by Bisection method.
 - Write print one line of the program


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I = -12589
J = 455
K = - 48989
PRINT 35 I, J, K
35 FORMATS (1Hb, 16, 14, 15)

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