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T.Y.B.Sc. Mathematics (Sem. V) Examination October - 2025

SEC - 5001 Computer Oriented Numerical Methods - I (New)

Time: 2 Hour] **[Total Marks: 25**

સૂચના : / Instructions

(1) ઉપરોક્ત દર્શાવેલ વિગતો ઉત્તરવહી પર અવશ્ય લખવી.
Fill up strictly the above details on your answer book
(2) All questions are compulsory.
(3) Figures to the right indicate marks of the questions.
(4) Follow usual notations.

Seat No.:

Student's Signature

Q.1. Answer the following questions (Any Five): (5)

1. Give reason for the invalidity of the following integer constants.
   (i) 22. (ii) 54, 6852
   (iii) +-786 (iv) $2025
2. Give reason for the invalidity of the following real constants.
   (i) 75 (ii) 85,678,99
   (iii) - 856 (iv) -3/2
3. Classify in valid and invalid real constants in the exponents form:
   (i) 251.E08 (ii) 521*E9
   (iii) 35.2E8 (iv) +541.9E
4. Classify in valid and invalid real variable names:
   (i) LOSS (ii) COS
   (iii) ROLLNO. (iv) FIG25
5. Give reason for the invalidity of the following integer variable names:
   (i) ID-NO (ii) INTEREST
   (iii) MIN50. (iv) NUMR.
6. Give reason for the invalidity of the following type declarations:
   (i) REAL LABS, MIX. (ii) INTEGER BIG, MIX, FIRST,

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

1. Explain the components of computer and explain their functions.
2. Draw a flow chart to find sum of the series $1 + x + \frac{x^2}{2!} + \frac{x^3}{3!} + \frac{x^4}{4!} + \cdots + \frac{x^{25}}{25!}$
3. Explain integer expressions in an arithmetic operator in FORTRAN 77.

Q-3. Answer the following (Any two): 10

1. Write FORTRAN equivalent for the following given expression:
   (a) $mv^2/2.5 + gh/4d$ (b) $(2^k)^n$
2. What is the final value of K in the following program?

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K=5
I=3
IA=252
M=I*1000+IA*10
K=M/1000+K
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3. Explain the Fractional part of real constant with illustrations.