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## C.U.SHAH UNIVERSITY

 Summer Examination-2016Subject Name : Embedded Fortran Programming

Subject Code : 5SC04EFE1
Semester : 4 Date : 12/05/2016

Branch : M.Sc.(Physics)
Time : 02:30 To 05:30 Marks :70

## Instructions:

(1) Use of Programmable calculator and any other electronic instrument is prohibited.
(2) Instructions written on main answer book are strictly to be obeyed.
(3) Draw neat diagrams and figures (if necessary) at right places.
(4) Assume suitable data if needed.

## SECTION - I

Q-1 Attempt the Following questions (07)
a. Define: Computer. 01
b. Define: Algorithms. 01
c. Define: flowchart in FORTRAN language. 01
d. Write full name of FORTRAN. 01
e. How can we identify integers in FORTRAN? 01
f. Write addition and multiplication equations in FORTRAN. 01
g. Define logical expression in FORTRAN. 01

Q-2 Attempt all questions
a. Discuss input/output statements in FORTRAN with suitable examples. 05
b. Explain constants in FORTRAN with suitable examples. 05
c. Discuss looping and arrays in FORTRAN. 04 OR
Q-2 Attempt all questions
a. Explain variables in FORTRAN with examples. 05
b. Discuss basic features of FORTRAN. 05
c. Explain control statements in FORTRAN with examples. 04

Q-3 Attempt all questions
a. Define simple program in FOTRAN. Explain it with suitable examples in flowchart.
b. Write short notes on (1) logical IF statement and (2) go to statement in FORTRAN.

## OR


Q-3 a. What is subroutine in FOTRAN? Explain it with suitable examples in flowchart. ..... 07
b. What is DO statement in FORTRAN? Discuss in brief with its suitable ..... 07 examples.
SECTION - II
Q-4 Attempt the Following questions(07)a. What is linear equation?01
b. What is multiplication of matrices? ..... 01
c. Define: Pivot element. ..... 01
d. What is addition of matrices? ..... 01
e. What is harmonic analysis? ..... 01
f. Write different types of integration methods. ..... 01
g. Which technique is used for solving large system? ..... 01
Q-5 Attempt all questions(14)
a. Discuss Trapezoidal rule with example. ..... 05
b. Explain inverse of matrix with example. ..... 05
c. Write short note on determinant with example ..... 04
OR
Q-5 Attempt all questions(14)
a. Describe Eigen values and Eigen vector of matrix. ..... 05
b. Explain in detail Simpson's $(1 / 3)$ rule with example. ..... 05
c. Elucidate pivotal condensation method. ..... 04
Q-6 Attempt all questions(14)
a. Explain in brief Runge-Kutta method with example. ..... 07
b. Explain in brief Euler method with example. ..... 07
OR
Q-6 Attempt all Questions(14)
a. Discuss in brief Gauss elimination method with example. ..... 07
b. Explain in brief differential equations with examples. ..... 07


