

# **Directorate of Distance Education**

**T.D.C. VIth Semester Examination 2015 (2012-15)**

**Subject: Mathematics**

**Paper : 7<sup>th</sup>**

**Assignment Questions (Full Marks – 20)**

**Answer any two questions**

- 1) State D'Alemberts Principle and obtain the general equation of motion of a rigid body in three dimensions under the action of given external forces.
- 2) Define a compound pendulum and find the time of a complete oscillation of a compound pendulum .
- 3) Define equipotential surface and find the condition that a family of surfaces be a possible family of equipotential surface in free space.

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T.D.C. VIth Semester Examination 2015 (2012-15)

Subject: Mathematics

Paper : 8<sup>th</sup>

Assignment Questions (Full Marks – 20)

Answer any two questions

1. Discuss Bisection or Regular-Falsi method to find the roots of algebraic or transcendental equations.

2. Establish

Trapezoidal Rule

or

Simpson's 1/3<sup>rd</sup> Rule

3. Using Picard's method to obtain the solution upto third approximation of the differential equation

$$dy/dx = x + y^2, \text{ given that } y(0) = 0$$

or

$$dy/dx = x + y, \text{ given that } y(0) = 1$$

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