2018-19

## Five years Integrated M.Sc. Mathematics (Semester - 6) Assessment Policy

060090601: CC13 Partial Differential Equation (Theory - 4 Credits)

| Assessment Code | Assessment Type         | Duration of each | Occurrence | Each of marks | Weightage in CIE of<br>40 marks | Remarks  |  |
|-----------------|-------------------------|------------------|------------|---------------|---------------------------------|--|--|
| A1              | Unit Test               | 90 minutes       | 2          | 30            | 7 x 2 = 14                      | Unit Test – 1: After completion of Unit-1 and Unit-2  Unit Test – 2: After completion of Unit-3 and Unit - 4   |  |
| A2              | Internal<br>Examination | 180 minutes      | 1          | 60            | 14 x 1 = 14                     | All units.   |  |
| A3              | Assignment              | 10 days          | 4          | 10            | 1.75 x 4 = 7                    | Assignment -1 : After completion of Unit-1<br>Assignment -2 : After completion of Unit-2<br>Assignment -3 : After completion of Unit-3<br>Assignment -4 : After completion of Unit-4 |  |
| A4              | Viva/Presentation       | 15 minutes       | 1          | 10            | 5 x 1 = 5                       | Based on the partial differential equation   |  |

## **Assessment Type Classification:**

| Assessment Code : | A1  | Coverage of Content :                   | Unit Test – 1: Covers Unit-1 and Unit- 2. |  |  |  |  |  |
|-------------------|---|---|---|--|--|--|--|--|
| Assessment Type : | Unit Test-1   | Tentative Date :                        | Unit Test - 1:21/01/2019                  |  |  |  |  |  |
| Kind of Question  | Que. 1) a) Answer the following Question. (Any one out of two, each of 2 marks) |   |   |  |  |  |  |  |
| Format:           | b) Answer the following Question  | n. (Any one out of two, each of 3 marks | )   |  |  |  |  |  |
|                   | c) Answer the following Question. (Any two out of three, each of 5 marks)       |   |   |  |  |  |  |  |
|                   | Que. 2) a) Answer the following Question. (Any one out of two, each of 2 marks) |   |   |  |  |  |  |  |
|                   | b) Answer the following Question  | a. (Any one out of two, each of 3 marks | )   |  |  |  |  |  |
|                   | c) Answer the following Question. (Any two out of three, each of 5 marks)       |   |   |  |  |  |  |  |
| Assessment:       | Formative   |   |   |  |  |  |  |  |

Dr. Hardik S. Patel

2018-19

| Assessment Code : | A1  | Coverage of Content:   | Unit Test – 2: Covers Unit-3 and Unit-4. |  |  |  |  |  |  |
|-------------------|---|--|--|--|--|--|--|--|--|
| Assessment Type : | Unit Test -2  | Tentative Date :   | Unit Test - 2: 05/03/2019                |  |  |  |  |  |  |
| Kind of Question  | Que. 1) Answer the following                        | Que. 1) Answer the following Question. ( Any three out of four, each of 5 marks) |  |  |  |  |  |  |  |
| Format:           | Que. 2) a) Answer the followi                       | ng Question. (each of 8 marks)   |  |  |  |  |  |  |  |
|                   |   | Or   |  |  |  |  |  |  |  |
|                   | a) Answer the followi                               | a) Answer the following Question. (each of 8 marks)                              |  |  |  |  |  |  |  |
|                   | b) Answer the following Question. (each of 7 marks) |  |  |  |  |  |  |  |  |
|                   |   | Or   |  |  |  |  |  |  |  |
|                   | b) Answer the follow:                               | b) Answer the following Question. (each of 7 marks)                              |  |  |  |  |  |  |  |
| Assessment:       | Formative   |  |  |  |  |  |  |  |  |

| Assessment Code : | A2  | Coverage of Content:                     | All Units  |  |  |  |  |
|-------------------|---|--|------------|--|--|--|--|
| Assessment Type : | Internal Examination                                | Tentative Date :                         | 01/04/2019 |  |  |  |  |
| Kind of Question  | Que. 1) a) Answer the following Question            | a. (Any one out of two, each of 2 marks) |            |  |  |  |  |
| Format:           | b) Answer the following Question                    | n. (Any one out of two, each of 3 marks  |            |  |  |  |  |
|                   | c) Answer the following Question                    | ı. (Any two out of three, each of 5 mark | as)        |  |  |  |  |
|                   | Que. 2) a) Answer the following Question            | a. (Any one out of two, each of 2 marks) |            |  |  |  |  |
|                   | b) Answer the following Question                    | n. (Any one out of two, each of 3 marks  |            |  |  |  |  |
|                   | c) Answer the following Question                    | ı. (Any two out of three, each of 5 mark | cs)        |  |  |  |  |
|                   | Que. 3) Answer the following Question. (            | Any three out of four, each of 5 marks   |            |  |  |  |  |
|                   | Que. 4) a) Answer the following Question            | ı. (each of 8 marks)                     |            |  |  |  |  |
|                   | Or  | ſ  |            |  |  |  |  |
|                   | a) Answer the following Question                    | ı. (each of 8 marks)                     |            |  |  |  |  |
|                   | b) Answer the following Question                    | n. (each of 7 marks)                     |            |  |  |  |  |
|                   | Or .  |  |            |  |  |  |  |
|                   | b) Answer the following Question. (each of 7 marks) |  |            |  |  |  |  |
| Assessment:       | Formative   |  |            |  |  |  |  |

Dr. Hardik S. Patel



2018-19

| Assessment Code : | A3                            | Coverage of Content:   | Assignment - 1 : After completion of Unit-1 |  |  |  |  |  |
|-------------------|-------------------------------|--|---|--|--|--|--|--|
|                   |                               |  | Assignment - 2 : After completion of Unit-2 |  |  |  |  |  |
|                   |                               |  | Assignment - 3 : After completion of Unit-3 |  |  |  |  |  |
|                   |                               |  | Assignment - 4 : After completion of Unit-4 |  |  |  |  |  |
| Assessment Type : | Assignment                    | <b>Tentative Date:</b>   | Assignment - 1 : 14/12/2019                 |  |  |  |  |  |
|                   |                               |  | Assignment - 2 : 19/01/2019                 |  |  |  |  |  |
|                   |                               |  | Assignment - 3 : 28/02/2019                 |  |  |  |  |  |
|                   |                               |  | Assignment - 4 : 25/03/2019                 |  |  |  |  |  |
| Kind of Question  | 1. 10 questions (short ques   | 1. 10 questions (short questions and long questions) from all units will be given as assignment. |   |  |  |  |  |  |
| Format:           | 2. Questions will be given i  | 2. Questions will be given in the very next lecture once the unit gets over.                     |   |  |  |  |  |  |
|                   | 3. Assignment has to be sul   | 3. Assignment has to be submitted after two days of completion of whole unit.                    |   |  |  |  |  |  |
|                   | 4. Zero mark will be given to | 4. Zero mark will be given for submission after given deadline.                                  |   |  |  |  |  |  |
| Assessment:       | Formative                     |  |   |  |  |  |  |  |

| Assessment Code : | A4   | Coverage of Content: | All Units  |  |  |  |  |
|-------------------|--|----------------------|------------|--|--|--|--|
| Assessment Type : | Viva   | Tentative Date :     | 01/04/2019 |  |  |  |  |
| Kind of Question  | 1. Topic should be given from the syllabus before 20 days of the presentation.                                       |                      |            |  |  |  |  |
| Format:           | 2. 15 minutes should be given for presentation   |                      |            |  |  |  |  |
|                   | 3. Viva should be taken after completion of presentation   |                      |            |  |  |  |  |
|                   | 4. Zero marks will be given, if students remain absent on the day of presentation without taking prior permission of |                      |            |  |  |  |  |
|                   | leave or students not give the presentation of given topic   |                      |            |  |  |  |  |
| Assessment:       | Formative  |                      |            |  |  |  |  |

Dr. Hardik S. Patel

2018-19

Five years Integrated M.Sc. Mathematics (Semester - 6)

## **Assessment Policy**

060090601: CC13 Partial Differential Equation (Practical - 2 Credits)

| Assessment Code | Assessment Type          | Duration of each | Occurrence | Each of marks | Weightage in CIE of<br>40 marks | Remarks  |
|-----------------|--------------------------|------------------|------------|---------------|---------------------------------|--|
| P1              | Practical<br>Examination | 90 minutes       | 2          | 30            | $15 \times 2 = 30$              | Practical – 1: After completion of Unit-2<br>Practical – 2: After completion of Unit-3 |
| P2              | Practical<br>Examination | 90 minutes       | 1          | 40            | 20×1 = 20                       | Practical – 3: After completion of Unit-4  |

| Assessment Code : | A5                             | Coverage of Content :           | Practical – 1: After completion of Unit-1 and Unit-2 |  |  |  |  |
|-------------------|--------------------------------|---------------------------------|--|--|--|--|--|
|                   |                                |                                 | Practical – 2: After completion of Unit-3            |  |  |  |  |
|                   |                                |                                 | Practical – 3: After completion of Unit-4            |  |  |  |  |
| Assessment Type : | Practical Examination          | Tentative Date :                | Practical – 1: 24/01/2019                            |  |  |  |  |
|                   |                                |                                 | Practical – 2: 11/03/2019                            |  |  |  |  |
| Kind of Question  | 1. Practical Programme (2 out  | t of 3, each of 10 Marks)       |  |  |  |  |  |
| Format:           | 2. Journal Submission (5 Marks | 2. Journal Submission (5 Marks) |  |  |  |  |  |
|                   | 3. Viva Voce (5 Marks)         | 3. Viva Voce (5 Marks)          |  |  |  |  |  |
| Assessment:       | Formative                      |                                 |  |  |  |  |  |

## **Assessment Type Mapping with Course Outcomes and Program Outcomes:**

#### **Course outcomes:**

Upon completion of the course, students shall be able to

**CO1:** identify partial differential equation and its order and degree.

**CO2:** Classify partial differential equations into linear and nonlinear equations and formulate partial differential equation form general solution.

**CO3:** identify appropriate solution procedures for a given partial differential equation.

**CO4:** find the general solution of second order linear homogeneous equations with constant coefficients.

2018-19

**CO5:** use the method of variation of parameters to find particular solutions of second order, linear homogeneous equations

**CO6:** apply a selection of standard solution techniques such as separation of variables and integral transform methods to the solution of partial differential equations.

## **Programme Outcomes (PO)**

### PO 1:Knowledge

Provides knowledge about the fundamentals of pure, applied and computing mathematics and its applications to students that creates the opportunities in industries and research centers.

### **PO 2: Core Competence**

Creates competency in science and mathematics to formulate, analyses and solve problem and/or also to pursue advanced study or research.

### PO 3:Breadth

Trains students having good knowledge in unearth core of academia and industry by the roots of mathematics.

#### PO 4: Evaluation

Imparts in students to raise trial and error based curiosity and problem solving functionality with research based advanced tutorial for higher level decision makings tools.

| Assessment<br>Code | Course Outcomes |          |     |     |     |     |     | Programme Outcomes |     |     |  |
|--------------------|-----------------|----------|-----|-----|-----|-----|-----|--------------------|-----|-----|--|
|                    | CO1             | CO2      | CO3 | CO4 | CO5 | CO6 | P01 | P02                | P03 | P04 |  |
| A1                 | ✓               | <b>✓</b> | ✓   | ✓   | ✓   | ✓   | ✓   | ✓                  |     | ✓   |  |
| A2                 | ✓               | ✓        | ✓   | ✓   | ✓   | ✓   | ✓   | ✓                  | ✓   |     |  |
| А3                 | ✓               | ✓        | ✓   | ✓   | ✓   | ✓   |     | ✓                  |     | ✓   |  |
| A4                 | ✓               |          | ✓   |     | ✓   | ✓   | ✓   |                    | ✓   | ✓   |  |
| A5                 | ✓               | ✓        | ✓   | ✓   |     |     | ✓   | ✓                  | ✓   | ✓   |  |

Dr. Hardik S. Patel 5 | Page