

COURSE OUTCOME MAPPING

MAPPING COURSE OUTCOMES LEADING TO THE ATTAINMENT OF PROGRAM OUTCOMES

COURSE TITLE: Inorganic Chemistry-I

COURSE CODE: MOC18102

CREDITS: 4

DEPARTMENT:M.Sc. Organic Chemistry

PROGRAMME OUTCOMES(M.Sc.)Or POs :

PO1: Scientific Knowledge:Ability to build a strong foundation of knowledge, integrated with the latest developments in science and technology which help students develop critical thinking, reasoning, decision making in process of quality education.

PO2: Problem Analysis: Identify, formulate and analyse the complex scientific problems using the knowledge gained across various streams of science and technology.

PO3: Effective Communication: Ability to articulate ideas, communicate effectively using current tools in the field of ICT along with effective report writing and documentation.

PO4: Development of Skill and Attitude: Enabling the students with the required skill, right attitude, time management and self-discipline for prominent career in industry, research institutes and for further academic study.

PO5: Life Long Learning and Social Responsibility: Recognise the need and ability to engage in lifelong learning and work effectively as an individual and as a member of diverse team. Students get the ability to act with an informed awareness of issues to participate in civic life through volunteering.

PROGRAMME SPECIFIC OUTCOME (DEPARTMENT WISE):

| | |
|------|--|
| PSO1 | Understands, identify and interrelate with the background of organic reaction mechanisms, complex Stereochemical structures, molecular rearrangements, instrumental method of chemical analysis and separation techniques |
| PSO2 | Analyses the importance of various elements in the periodic table, coordination chemistry and structure of molecules, properties of compounds, and structural determination of complexes using theories. |
| PSO3 | Gathers attention about the physical aspects of atomic structure, dual behaviour, reaction pathways with respect to time, various energy transformations, molecular assembly in nanolevel, electrochemistry & infer their significance |
| PSO4 | Learns, constructs and analyses the potential uses of analytical techniques, medicinal chemistry and green chemistry. |
| PSO5 | Organise and carry out experiments in the area of organic analysis, estimation, separation, derivative process, preparation, conductometric, potentiometric and solve spectral analysis |

| | COURSE OUTCOMES | BLOOM'S TAXONOMY LEVEL |
|-----|--|-------------------------------|
| CO1 | Understands the concept of bonding in metal complexes | II (Understand) |
| CO2 | Interrelates 3-D structures of molecules with their symmetry elements | II (Understand) |
| CO3 | Categorises the mechanisms of inorganic complexes | IV (Analyze) |
| CO4 | Analyses the stability of the complexes through equilibria | IV (Analyze) |
| CO5 | Identifies the ligational aspects of diatomic molecules | I (Knowledge) |

TABLE 1: CO, PO, PSO MAPPING

| Course Outcomes | Program Outcomes | | | | | Program Specific Outcomes | | | |
|-----------------|------------------|-----|-----|-----|-----|---------------------------|------|------|------|
| | PO1 | PO2 | PO3 | PO4 | PO5 | PSO1 | PSO2 | PSO3 | PSO4 |
| 1 | H | | | | H | H | H | | |
| 2 | H | | H | | H | | | H | |
| 3 | H | | H | H | | | | H | |
| 4 | H | H | | | S | H | H | | |
| 5 | H | H | | H | | H | | | S |

H: Highly Supportive

S: Supportive

Table 2: COURSE OUTCOME ATTAINMENT

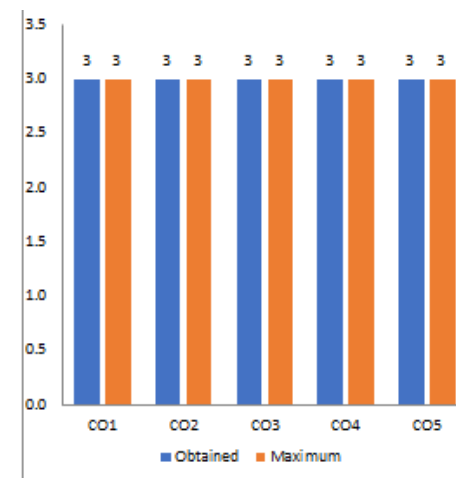
Attainment scale:

Pass percent of 75% and above= 3

Pass percent between 65% - 75%= 2

Pass percent between 55%- 65%= 1

Pass percent of less than 55%= 0



| co | WEEKLY TEST | | MID SEM | | PREFINAL | | ASSIGNMENT | | VIVA-VOCE | | co wis | External Exam | | | |
|-----|-------------|------------------|---------|------------------|----------|------------------|------------|------------------|-----------|------------------|--------|---------------|------------------|--------------------------|-----------------------|
| | pass% | Attainment level | pass% | Attainment level | pass% | Attainment level | pass% | Attainment level | pass% | Attainment level | | pass% | Attainment level | co wise external average | co wise total average |
| CO1 | 92.2 | 3.0 | 92.2 | 3.0 | 76.0 | 3.0 | | | | | 3.0 | 98.0 | 3.0 | 3.0 | 3.0 |
| CO2 | | | 92.2 | 3.0 | 76.0 | 3.0 | | | | | 3.0 | 98.0 | 3.0 | 3.0 | 3.0 |
| CO3 | | | | | 76.0 | 3.0 | | | | | 3.0 | 98.0 | 3.0 | 3.0 | 3.0 |
| CO4 | | | | | 76.0 | 3.0 | 100.0 | 3.0 | | | 3.0 | 98.0 | 3.0 | 3.0 | 3.0 |
| CO5 | | | | | 76.0 | 3.0 | | | 100.0 | 3.0 | 3.0 | 98.0 | 3.0 | 3.0 | 3.0 |

| AVERAGE | AVERAGE |
|---------|---------|
| 3 | 3 |

RESULT ANALYSIS: The total CO attainment of the course is satisfactory. Performance in the prefinal exam needs to be improved, to improve overall course outcome attainment level.

Table 3: PROGRAMME OUTCOME MAPPING



| OUTCOME | PO1 | PO2 | PO3 | PO4 | PO5 |
|------------------------|-----|-----|-----|-----|-----|
| CO1 | H 3 | | | | H 3 |
| CO2 | H 3 | | H 3 | | H 3 |
| CO3 | H 3 | | H 3 | H 3 | |
| CO4 | H 3 | H 3 | | | |
| CO5 | H 3 | H 3 | | H 3 | |
| AVERAGE OF COS FOR POS | 3 | 3 | 3 | 3 | 3 |
| AVERAGE OF POS | 3 | 3 | 3 | 3 | 3 |
| AVERAGE | 3 | | | | |

COURSE OUTCOME MAPPING

MAPPING COURSE OUTCOMES LEADING TO THE ATTAINMENT OF PROGRAM OUTCOMES:

COURSE TITLE: Organic Chemistry-I

COURSE CODE: MOC18103

CREDITS: 4

DEPARTMENT:M.Sc. Organic Chemistry

PROGRAMME OUTCOMES(M.Sc.)Or POs :

PO1: Scientific Knowledge:Ability to build a strong foundation of knowledge, integrated with the latest developments in science and technology which help students develop critical thinking, reasoning, decision making in process of quality education.

PO2: Problem Analysis: Identify, formulate and analyse the complex scientific problems using the knowledge gained across various streams of science and technology.

PO3: Effective Communication: Ability to articulate ideas, communicate effectively using current tools in the field of ICT along with effective report writing and documentation.

PO4: Development of Skill and Attitude: Enabling the students with the required skill, right attitude, time management and self-discipline for prominent career in industry, research institutes and for further academic study.

PO5: Life Long Learning and Social Responsibility: Recognise the need and ability to engage in lifelong learning and work effectively as an individual and as a member of diverse team. Students get the ability to act with an informed awareness of issues to participate in civic life through volunteering.

PROGRAMME SPECIFIC OUTCOME (DEPARTMENT WISE):

- PSO1 **Understands, identify and interrelate** with the background of organic reaction mechanisms, complex Stereochemical structures, molecular rearrangements, instrumental method of chemical analysis and separation techniques
- PSO2 **Analyses** the importance of various elements in the periodic table, coordination chemistry and structure of molecules, properties of compounds, and structural determination of complexes using theories.
- PSO3 **Gathers attention** about the physical aspects of atomic structure, dual behaviour, reaction pathways with respect to time, various energy transformations, molecular assembly in nanolevel, electrochemistry & **infer** their significance
- PSO4 **Learns, constructs and analyses** the potential uses of analytical techniques, medicinal chemistry and green chemistry.
- PSO5 **Organise** and carry out experiments in the area of organic analysis, estimation, separation, derivative process, preparation, conductometric, potentiometric and solve spectral analysis

| | COURSE OUTCOMES | BLOOM'S TAXONOMY LEVEL |
|-----|---|-------------------------------|
| CO1 | Acquires the 3-D aspects of organic molecules | II (Understand) |
| CO2 | Understands and compares the organic reaction mechanisms | II (Understand) |
| CO3 | Develops the fundamentals of reactive intermediates | III (Apply) |
| CO4 | Appreciates the various steps involved in the molecular rearrangements | V (Evaluate) |
| CO5 | Perceives the concept of conformational analysis | IV (Analyze) |

TABLE 1: CO, PO, PSO MAPPING

| Course Outcomes | Program Outcomes | | | | | Program Specific Outcomes | | | |
|-----------------|------------------|----------|----------|----------|----------|---------------------------|----------|----------|----------|
| | PO1 | PO2 | PO3 | PO4 | PO5 | PSO1 | PSO2 | PSO3 | PSO4 |
| 1 | H | | H | | H | H | | H | |
| 2 | H | H | | | H | H | | | H |
| 3 | H | | H | | | H | | | H |
| 4 | H | | | H | | H | | | |
| 5 | H | H | | | | | H | | |

H: Highly Supportive

S: Supportive

Table 2: COURSE OUTCOME ATTAINMENT

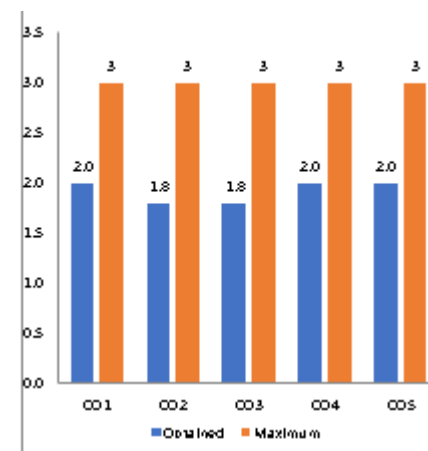
Attainment scale:

Pass percent of 75% and above= 3

Pass percent between 65% - 75%= 2

Pass percent between 55%- 65%= 1

Pass percent of less than 55%= 0



| co | WEEKLY TEST | | MID SEM | | PREFINAL | | ASSIGNMENT | | VIVA-VOCE | | External Exam | | | |
|-----|-------------|------------------|---------|------------------|----------|------------------|------------|------------------|-----------|------------------|----------------|--------------------------|--------------------------|---------------|
| | pass% | Attainment level | pass % | Attainment level | pass % | Attainment level | pass % | Attainment level | pass % | Attainment level | co wise pass % | co wise Attainment level | co wise external average | co wise total |
| CO1 | 96.1 | 3.0 | 73.0 | 2.0 | 57.0 | 1.0 | | | | | 2.0 | 66.0 | 2.0 | 2.0 |
| CO2 | | | 73.0 | 2.0 | 57.0 | 1.0 | | | | | 1.5 | 66.0 | 2.0 | 1.8 |
| CO3 | | | 73.0 | 2.0 | 57.0 | 1.0 | | | | | 1.5 | 66.0 | 2.0 | 1.8 |
| CO4 | | | | | 57.0 | 1.0 | 100.0 | 3.0 | | | 2.0 | 66.0 | 2.0 | 2.0 |
| CO5 | | | | | 57.0 | 1.0 | | | 100.0 | 3.0 | 2.0 | 66.0 | 2.0 | 2.0 |

| AVERAGE | AVERAGE |
|---------|---------|
| 2 | 1.92 |

RESULT ANALYSIS: The total CO attainment of the course is average. Performance in the prefinal exam needs to be improved, to improve overall course outcome attainment level.

Table 3: PROGRAMME OUTCOME MAPPING



| OUTCOME | PO1 | PO2 | PO3 | PO4 | PO5 |
|------------------------|-------|-------|-------|------|-------|
| CO1 | H 2 | | H 2 | | H 2 |
| CO2 | H 1.5 | H 1.5 | | | H 1.5 |
| CO3 | H 1.5 | | H 1.5 | | |
| CO4 | H 2 | | | | |
| CO5 | H 2 | H 2 | | H 2 | |
| AVERAGE OF COS FOR POS | 1.8 | 1.75 | 1.75 | 2 | 1.75 |
| AVERAGE OF POS | 1.15 | 1.12 | 1.12 | 1.28 | 1.12 |
| AVERAGE | 1.15 | | | | |

COURSE OUTCOME MAPPING

MAPPING COURSE OUTCOMES LEADING TO THE ATTAINMENT OF PROGRAM OUTCOMES:

COURSE TITLE: Organic Chemistry-III

COURSE CODE: MOC19302

CREDITS: 4

DEPARTMENT:M.Sc. Organic Chemistry

PROGRAMME OUTCOMES(M.Sc.)Or POs :

PO1: Scientific Knowledge: Ability to build a strong foundation of knowledge, integrated with the latest developments in science and technology which help students develop critical thinking, reasoning, decision making in process of quality education.

PO2: Problem Analysis: Identify, formulate and analyse the complex scientific problems using the knowledge gained across various streams of science and technology.

PO3: Effective Communication: Ability to articulate ideas, communicate effectively using current tools in the field of ICT along with effective report writing and documentation.

PO4: Development of Skill and Attitude: Enabling the students with the required skill, right attitude, time management and self-discipline for prominent career in industry, research institutes and for further academic study.

PO5: Life Long Learning and Social Responsibility: Recognise the need and ability to engage in lifelong learning and work effectively as an individual and as a member of diverse team. Students get the ability to act with an informed awareness of issues to participate in civic life through volunteering.

PROGRAMME SPECIFIC OUTCOME (DEPARTMENT WISE):

- PSO1 **Understands, identify and interrelate** with the background of organic reaction mechanisms, complex Stereochemical structures, molecular rearrangements, instrumental method of chemical analysis and separation techniques
- PSO2 **Analyses** the importance of various elements in the periodic table, coordination chemistry and structure of molecules, properties of compounds, and structural determination of complexes using theories.
- PSO3 **Gathers attention** about the physical aspects of atomic structure, dual behaviour, reaction pathways with respect to time, various energy transformations, molecular assembly in nanolevel, electrochemistry & **infer** their significance
- PSO4 **Learns, constructs and analyses** the potential uses of analytical techniques, medicinal chemistry and green chemistry.
- PSO5 **Organise** and carry out experiments in the area of organic analysis, estimation, separation, derivative process, preparation, conductometric, potentiometric and solve spectral analysis

| | COURSE OUTCOMES | BLOOM'S TAXONOMY LEVEL |
|-----|---|-------------------------------|
| CO1 | • Perceives the concept of conformational analysis | III (Perceives) |
| CO2 | • Analyses the cruciality of stereochemical process | IV (Analyze) |
| CO3 | • Classify and interrelates types of asymmetric synthesis | II (Interrelates) |
| CO4 | • Understands and formulates retrosynthesis | IV (Formulates) |
| CO5 | Learns new techniques and concepts in organic synthesis | IV (concepts) |

TABLE 1: CO, PO, PSO MAPPING

| Course Outcomes | Program Outcomes | | | | | Program Specific Outcomes | | | |
|-----------------|------------------|----------|----------|----------|----------|---------------------------|----------|----------|----------|
| | PO1 | PO2 | PO3 | PO4 | PO5 | PSO1 | PSO2 | PSO3 | PSO4 |
| 1 | | | H | | H | H | | H | |
| 2 | | H | | | H | H | | | H |
| 3 | H | | H | | S | H | | | H |
| 4 | H | | | H | | H | | | |
| 5 | H | H | | | | | H | S | |

H: Highly Supportive

S: Supportive

Table 2: COURSE OUTCOME ATTAINMENT

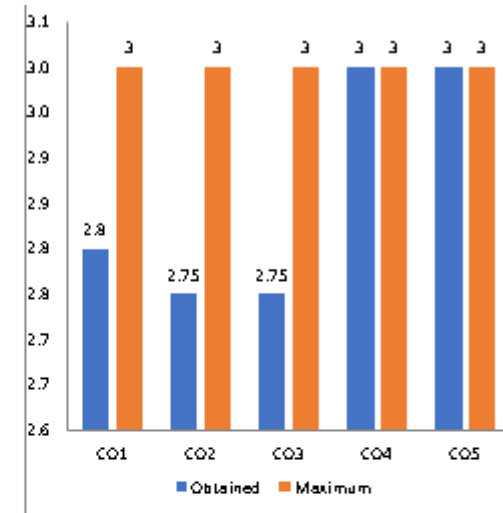
Attainment scale:

Pass percent of 75% and above= 3

Pass percent between 65% - 75%= 2

Pass percent between 55%- 65%= 1

Pass percent of less than 55%=0



| co | WEEKLY TEST | | MID SEM | | PREFINAL | | ASSIGNMENT | | VIVA-VOCE | | co wis | External Exam | | | |
|-----|-------------|------------------|---------|------------------|----------|------------------|------------|------------------|-----------|------------------|--------|---------------|------------------|--------------------------|-----------------------|
| | pass% | Attainment level | pass% | Attainment level | pass% | Attainment level | pass% | Attainment level | pass% | Attainment level | | pass% | Attainment level | co wise external average | co wise total average |
| CO1 | 68.0 | 2.0 | 85.0 | 3.0 | 78.0 | 3.0 | | | | | 2.6 | 88.0 | 3.0 | 3.0 | 2.8 |
| CO2 | | | 82.0 | 3.0 | 76.0 | 2.0 | | | | | 2.5 | 83.0 | 3.0 | 3.0 | 2.8 |
| CO3 | | | 79.0 | 3.0 | 75.0 | 2.0 | | | | | 2.5 | 83.0 | 3.0 | 3.0 | 2.8 |
| CO4 | | | | | 85.0 | 3.0 | 100.0 | 3.0 | | | 3.0 | 83.0 | 3.0 | 3.0 | 3.0 |
| CO5 | | | | | 84.0 | 3.0 | | | 100.0 | 3.0 | 3.0 | 83.0 | 3.0 | 3.0 | 3.0 |

| AVERAGE | AVERAGE |
|---------|---------|
| 3 | 2.8 |

RESULT ANALYSIS: The total CO attainment of the course is very good.

Table 3: PROGRAMME OUTCOME MAPPING



| OUTCOME | P01 | P02 | P03 | P04 | P05 |
|------------------------|-------|-------|-------|-----|-----|
| CO1 | | | H 3 | | H 3 |
| CO2 | | H 3 | | | H 3 |
| CO3 | H 3 | | H 2.5 | H 3 | |
| CO4 | H 3 | | | H 3 | |
| CO5 | H 1.3 | H 2.5 | | | |
| AVERAGE OF COS FOR POS | 2.75 | 2.75 | 2.75 | 3 | 3 |
| AVERAGE OF POS | 2.75 | 2.75 | 2.75 | 3 | 3 |
| AVERAGE | 2.85 | | | | |

COURSE OUTCOME MAPPING

MAPPING COURSE OUTCOMES LEADING TO THE ATTAINMENT OF PROGRAM OUTCOMES

COURSE TITLE: Analytical Techniques & Spectroscopy-I

COURSE CODE: MOC18105

CREDITS: 4

DEPARTMENT: M.Sc. Organic Chemistry

PROGRAMME OUTCOMES(M.Sc.)Or POs :

PO1: Scientific Knowledge: Ability to build a strong foundation of knowledge, integrated with the latest developments in science and technology which help students develop critical thinking, reasoning, decision making in process of quality education.

PO2: Problem Analysis: Identify, formulate and analyse the complex scientific problems using the knowledge gained across various streams of science and technology.

PO3: Effective Communication: Ability to articulate ideas, communicate effectively using current tools in the field of ICT along with effective report writing and documentation.

PO4: Development of Skill and Attitude: Enabling the students with the required skill, right attitude, time management and self-discipline for prominent career in industry, research institutes and for further academic study.

PO5: Life Long Learning and Social Responsibility: Recognise the need and ability to engage in lifelong learning and work effectively as an individual and as a member of diverse team. Students get the ability to act with an informed awareness of issues to participate in civic life through volunteering.

PROGRAMME SPECIFIC OUTCOME (DEPARTMENT WISE):

| | |
|------|--|
| PSO1 | Understands, identify and interrelate with the background of organic reaction mechanisms, complex Stereochemical structures, molecular rearrangements, instrumental method of chemical analysis and separation techniques |
| PSO2 | Analyses the importance of various elements in the periodic table, coordination chemistry and structure of molecules, properties of compounds, and structural determination of complexes using theories. |
| PSO3 | Gathers attention about the physical aspects of atomic structure, dual behaviour, reaction pathways with respect to time, various energy transformations, molecular assembly in nanolevel, electrochemistry & infer their significance |
| PSO4 | Learns, constructs and analyses the potential uses of analytical techniques, medicinal chemistry and green chemistry. |
| PSO5 | Organise and carry out experiments in the area of organic analysis, estimation, separation, derivative process, preparation, conductometric, potentiometric and solve spectral analysis |

| | COURSE OUTCOMES | BLOOM'S TAXONOMY LEVEL |
|-----|---|-------------------------------|
| CO1 | Recognises the importance of various chromatographic techniques | I (Knowledge) |
| CO2 | Understands the magnetic properties of nuclei | II (Understand) |
| CO3 | Analyses the approach of IR and Raman spectra for structural elucidation | IV (Analyze) |
| CO4 | Identifies the electronic transitions in organic molecules | I (Knowledge) |
| CO5 | Gains knowledge about electronic spin spectroscopy | II (Understand) |

TABLE 1: CO, PO, PSO MAPPING

| Course Outcomes | Program Outcomes | | | | | Program Specific Outcomes | | | |
|-----------------|------------------|-----|-----|-----|-----|---------------------------|------|------|------|
| | PO1 | PO2 | PO3 | PO4 | PO5 | PSO1 | PSO2 | PSO3 | PSO4 |
| 1 | H | | | H | H | H | | | H |
| 2 | H | | H | | H | | H | | H |
| 3 | H | H | S | | H | | | H | H |
| 4 | H | | | H | | | | H | H |
| 5 | H | | | H | | H | | | H |

H: Highly Supportive

S: Supportive

Table 2: COURSE OUTCOME ATTAINMENT

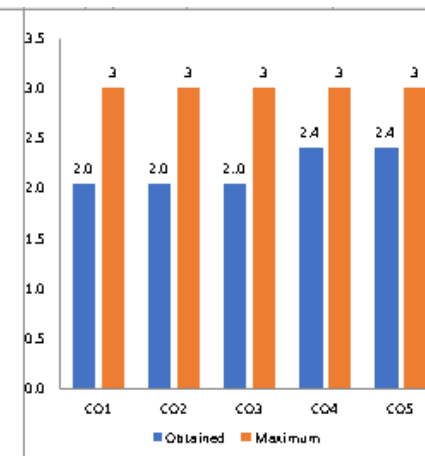
Attainment scale:

Pass percent of 75% and above= 3

Pass percent between 65% - 75%= 2

Pass percent between 55%- 65%= 1

Pass percent of less than 55%= 0



| CO | WEEKLY TEST | | MID SEM | | PREFINAL | | ASSIGNMENT | | VIVA-VOCE | | External Exam | | | | |
|-----|-------------|------------------|---------|------------------|----------|------------------|------------|------------------|-----------|------------------|---------------|-------|------------------|--------------------------|-----------------------|
| | pass% | Attainment level | pass% | Attainment level | pass% | Attainment level | pass% | Attainment level | pass% | Attainment level | co wise | pass% | Attainment level | co wise external average | co wise total average |
| CO1 | 44.0 | 0.0 | 73.0 | 2.0 | 46.0 | 0.0 | | | | | 0.7 | 76.0 | 3.0 | 3.0 | 2.0 |
| CO2 | | | 73.0 | 2.0 | 46.0 | 0.0 | | | | | 0.7 | 76.0 | 3.0 | 3.0 | 2.0 |
| CO3 | | | 73.0 | 2.0 | 46.0 | 0.0 | | | | | 0.7 | 76.0 | 3.0 | 3.0 | 2.0 |
| CO4 | | | | | 46.0 | 0.0 | 100.0 | 3.0 | | | 1.5 | 76.0 | 3.0 | 3.0 | 2.4 |
| CO5 | | | | | 46.0 | 0.0 | | | 100.0 | 3.0 | 1.5 | 76.0 | 3.0 | 3.0 | 2.4 |

| AVERAGE | AVERAGE |
|---------|---------|
| 3 | 2.18 |

RESULT ANALYSIS: The total CO attainment of the course is below average. Performance in the prefinal exam needs to be improved, to improve overall course outcome attainment level.

Table 3: PROGRAMME OUTCOME MAPPING:



| OUTCOME | PO1 | PO2 | PO3 | PO4 | PO5 |
|------------------------|--------|--------|--------|--------|--------|
| CO1 | H 0.66 | | | H 0.66 | |
| CO2 | H 0.66 | | H 0.66 | | H 0.66 |
| CO3 | H 0.66 | H 0.66 | | | H 0.66 |
| CO4 | H 1.5 | | | H 1.5 | H 0.66 |
| CO5 | H 1.5 | | | H 1.5 | |
| AVERAGE OF COS FOR POS | 0.99 | 0.66 | 0.66 | 1.22 | 0.66 |
| AVERAGE OF POS | 0.7 | 0.47 | 0.47 | 0.88 | 0.47 |
| AVERAGE | 0.6 | | | | |

COURSE OUTCOME MAPPING

MAPPING COURSE OUTCOMES LEADING TO THE ATTAINMENT OF PROGRAM OUTCOMES:

COURSE TITLE: Inorganic Chemistry-II

COURSE CODE: MOC19202

CREDITS: 4

DEPARTMENT:M.Sc. Organic Chemistry

PROGRAMME OUTCOMES(M.Sc.)Or POs :

PO1: Scientific Knowledge:Ability to build a strong foundation of knowledge, integrated with the latest developments in science and technology which help students develop critical thinking, reasoning, decision making in process of quality education.

PO2: Problem Analysis: Identify, formulate and analyse the complex scientific problems using the knowledge gained across various streams of science and technology.

PO3: Effective Communication: Ability to articulate ideas, communicate effectively using current tools in the field of ICT along with effective report writing and documentation.

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PO5: Life Long Learning and Social Responsibility: Recognise the need and ability to engage in lifelong learning and work effectively as an individual and as a member of diverse team. Students get the ability to act with an informed awareness of issues to participate in civic life through volunteering.

PROGRAMME SPECIFIC OUTCOME (DEPARTMENT WISE):

- PSO1 **Understands, identify and interrelate** with the background of organic reaction mechanisms, complex Stereochemical structures, molecular rearrangements, instrumental method of chemical analysis and separation techniques
- PSO2 **Analyses** the importance of various elements in the periodic table, coordination chemistry and structure of molecules, properties of compounds, and structural determination of complexes using theories.
- PSO3 **Gathers attention** about the physical aspects of atomic structure, dual behaviour, reaction pathways with respect to time, various energy transformations, molecular assembly in nanolevel, electrochemistry & **infer** their significance
- PSO4 **Learns, constructs and analyses** the potential uses of analytical techniques, medicinal chemistry and green chemistry.
- PSO5 **Organise** and carry out experiments in the area of organic analysis, estimation, separation, derivative process, preparation, conductometric, potentiometric and solve spectral analysis

| | COURSE OUTCOMES | BLOOM'S TAXONOMY LEVEL |
|-----|--|-------------------------------|
| CO1 | Perceives understanding about terms, term symbols and microstates | IV (Analyze) |
| CO2 | Enlights the knowledge about higher point groups | II (Understand) |
| CO3 | Analyses the reaction pathways of complex formation | IV (Analyze) |
| CO4 | Learn the structural patterns of metal clusters | II (Understand) |
| CO5 | Validate the role of bioinorganic chemistry in everyday life | V (Evaluate) |

TABLE 1: CO, PO, PSO MAPPING

| Course Outcomes | Program Outcomes | | | | | Program Specific Outcomes | | | |
|-----------------|------------------|-----|-----|-----|-----|---------------------------|------|------|------|
| | PO1 | PO2 | PO3 | PO4 | PO5 | PSO1 | PSO2 | PSO3 | PSO4 |
| 1 | H | | | | H | H | H | | S |
| 2 | H | | H | | H | | | H | |
| 3 | H | | H | H | | | | H | |
| 4 | H | H | | | S | H | H | | S |
| 5 | H | H | | H | | H | | S | |

H: Highly Supportive

S: Supportive

Table 2: COURSE OUTCOME ATTAINMENT

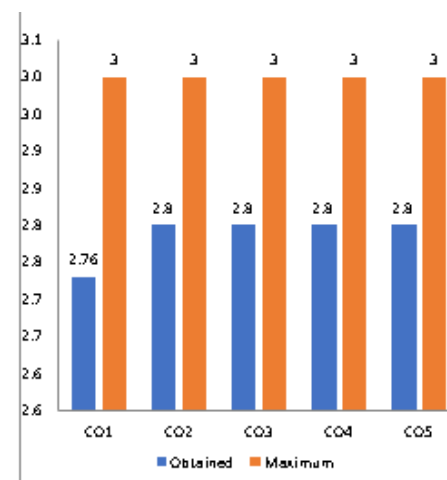
Attainment scale:

Pass percent of 75% and above= 3

Pass percent between 65% - 75%= 2

Pass percent between 55%- 65%= 1

Pass percent of less than 55%= 0



| co | WEEKLY TEST | | MID SEM | | PREFINAL | | ASSIGNMENT | | VIVA-VOCE | | External Exam | | | | |
|-----|-------------|------------------|---------|------------------|----------|------------------|------------|------------------|-----------|------------------|---------------|-------|------------------|--------------------------|-----------------------|
| | pass% | Attainment level | pass% | Attainment level | pass% | Attainment level | pass% | Attainment level | pass% | Attainment level | co wise | pass% | Attainment level | co wise external average | co wise total average |
| CO1 | 62.5 | 2.0 | 84.0 | 3.0 | 68.0 | 2.0 | | | | | 2.3 | 88.0 | 3.0 | 3.0 | 2.7 |
| CO2 | | | 84.0 | 3.0 | 68.0 | 2.0 | | | | | 2.5 | 88.0 | 3.0 | 3.0 | 2.8 |
| CO3 | | | 84.0 | 3.0 | 68.0 | 2.0 | | | | | 2.5 | 88.0 | 3.0 | 3.0 | 2.8 |
| CO4 | | | | | 68.0 | 2.0 | 100.0 | 3.0 | | | 2.5 | 88.0 | 3.0 | 3.0 | 2.8 |
| CO5 | | | | | 68.0 | 2.0 | | | 100.0 | 3.0 | 2.5 | 88.0 | 3.0 | 3.0 | 2.8 |

| AVERAGE | AVERAGE |
|---------|---------|
| 3 | 2.78 |

RESULT ANALYSIS:The total CO attainment of the course is good. Performance in the prefinal exam needs to be improved, to improve overall course outcome attainment level.

Table 3: PROGRAMME OUTCOME MAPPING



| OUTCOME | P01 | P02 | P03 | P04 | P05 |
|------------------------|-------|-------|-------|-------|-------|
| CO1 | H 2.3 | | | | H 2.3 |
| CO2 | H 2.5 | | H 2.5 | | H 2.5 |
| CO3 | H 2.5 | | H 2.5 | H 2.5 | |
| CO4 | H 2.5 | H 2.5 | | | |
| CO5 | H 2.5 | H 2.5 | | H 3 | |
| AVERAGE OF COS FOR POS | 2.46 | 2.5 | 2.5 | 2.5 | 2.41 |
| AVERAGE OF POS | 2.27 | 2.31 | 2.31 | 2.31 | 2.23 |
| AVERAGE | 2.28 | | | | |

COURSE OUTCOME MAPPING

MAPPING COURSE OUTCOMES LEADING TO THE ATTAINMENT OF PROGRAM OUTCOMES

COURSE TITLE: Organic Chemistry-II

COURSE CODE: MOC19203

CREDITS: 4

DEPARTMENT:M.Sc. Organic Chemistry

PROGRAMME OUTCOMES(M.Sc.)Or POs :

PO1: Scientific Knowledge:Ability to build a strong foundation of knowledge, integrated with the latest developments in science and technology which help students develop critical thinking, reasoning, decision makingin process of quality education.

PO2: Problem Analysis: Identify, formulate and analyse the complex scientific problems using the knowledge gained across various streams of science and technology.

PO3: Effective Communication: Ability to articulate ideas, communicate effectively using current tools in the field of ICT along with effective report writing and documentation.

PO4: Development of Skill and Attitude: Enabling the students with the required skill, right attitude, time management and self-discipline for prominent career in industry, research institutes and for further academic study.

PO5: Life Long Learning and Social Responsibility: Recognise the need and ability to engage in lifelong learning and work effectively as an individual and as a member of diverse team. Students get the ability to act with an informed awareness of issues to participate in civic life through volunteering.

PROGRAMME SPECIFIC OUTCOME (DEPARTMENT WISE):

- PSO1 **Understands, identify and interrelate** with the background of organic reaction mechanisms, complex Stereochemical structures, molecular rearrangements, instrumental method of chemical analysis and separation techniques
- PSO2 **Analyses** the importance of various elements in the periodic table, coordination chemistry and structure of molecules, properties of compounds, and structural determination of complexes using theories.
- PSO3 **Gathers attention** about the physical aspects of atomic structure, dual behaviour, reaction pathways with respect to time, various energy transformations, molecular assembly in nanolevel, electrochemistry & **infer** their significance
- PSO4 **Learns, constructs and analyses** the potential uses of analytical techniques, medicinal chemistry and green chemistry.
- PSO5 **Organise** and carry out experiments in the area of organic analysis, estimation, separation, derivative process, preparation, conductometric, potentiometric and solve spectral analysis

| | COURSE OUTCOMES | BLOOM'S TAXONOMY LEVEL |
|-----|--|-------------------------------|
| CO1 | Develops an understanding about organic reaction mechanisms | III (Apply) |
| CO2 | Appreciates the fundamentals of pericyclic reactions | IV (Analyse) |
| CO3 | Apply the theories of pericyclics to molecular reactions | V (Evaluate) |
| CO4 | Understands the importance of photochemistry | II (Understand) |
| CO5 | Gains the potential of organic reagents | VI (Create/Synthesis) |

TABLE 1: CO, PO, PSO MAPPING

| Course Outcomes | Program Outcomes | | | | | Program Specific Outcomes | | | |
|-----------------|------------------|-----|-----|-----|-----|---------------------------|------|------|------|
| | PO1 | PO2 | PO3 | PO4 | PO5 | PSO1 | PSO2 | PSO3 | PSO4 |
| 1 | H | | H | | H | H | | H | |
| 2 | H | H | | | H | H | | | H |
| 3 | H | | H | | S | H | | | H |
| 4 | H | | | H | | H | | | |
| 5 | H | H | | | | | H | S | |

H: Highly Supportive

S: Supportive

Table 2: COURSE OUTCOME ATTAINMENT

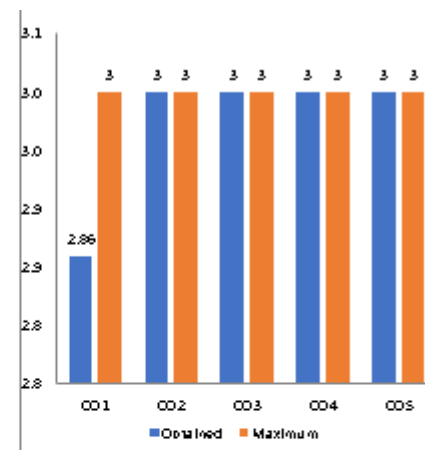
Attainment scale:

Pass percent of 75% and above= 3

Pass percent between 65% - 75%= 2

Pass percent between 55%- 65%= 1

Pass percent of less than 55%= 0



| co | WEEKLY TEST | | MID SEM | | PREFINAL | | ASSIGNMENT | | VIVA-VOCE | | External Exam | | | | |
|-----|-------------|------------------|---------|------------------|----------|------------------|------------|------------------|-----------|------------------|---------------|--------|------------------|--------------------------|---------------|
| | pass% | Attainment level | pass % | Attainment level | pass % | Attainment level | pass % | Attainment level | pass % | Attainment level | co wise | pass % | Attainment level | co wise external average | co wise total |
| CO1 | 72.0 | 2.0 | 84.0 | 3.0 | 80.0 | 3.0 | | | | | 2.8 | 86.0 | 3.0 | 3.0 | 2.9 |
| CO2 | | | 84.0 | 3.0 | 80.0 | 3.0 | | | | | 3.0 | 86.0 | 3.0 | 3.0 | 3.0 |
| CO3 | | | 84.0 | 3.0 | 80.0 | 3.0 | | | | | 3.0 | 86.0 | 3.0 | 3.0 | 3.0 |
| CO4 | | | | | 80.0 | 3.0 | 100.0 | 3.0 | | | 3.0 | 86.0 | 3.0 | 3.0 | 3.0 |
| CO5 | | | | | 80.0 | 3.0 | | | | | 3.0 | 86.0 | 3.0 | 3.0 | 3.0 |

| AVERAGE | AVERAGE |
|---------|---------|
| 3 | 2.96 |

RESULT ANALYSIS: The total CO attainment of the course is good. Performance in the prefinal exam needs to be improved, to improve overall course outcome attainment level.

Table 3: PROGRAMME OUTCOME MAPPING



| OUTCOME | P01 | P02 | P03 | P04 | P05 |
|------------------------|-------|------|-------|------|-------|
| CO1 | H 2.6 | | H 2.6 | | H 2.6 |
| CO2 | H 3 | | | | H 3 |
| CO3 | H 3 | H 3 | H 3 | | |
| CO4 | H 3 | | | | |
| CO5 | H 3 | H 3 | | H 3 | |
| AVERAGE OF COS FOR POS | 2.92 | 3 | 2.8 | 3 | 2.8 |
| AVERAGE OF POS | 2.88 | 2.96 | 2.76 | 2.96 | 2.76 |
| AVERAGE | 2.86 | | | | |

COURSE OUTCOME MAPPING

MAPPING COURSE OUTCOMES LEADING TO THE ATTAINMENT OF PROGRAM OUTCOMES

COURSE TITLE: Physical Chemistry-II

COURSE CODE: MOC19204

CREDITS: 4

DEPARTMENT:M.Sc. Organic Chemistry

PROGRAMME OUTCOMES(M.Sc.)Or POs :

PO1: Scientific Knowledge:Ability to build a strong foundation of knowledge, integrated with the latest developments in science and technology which help students develop critical thinking, reasoning, decision making in process of quality education.

PO2: Problem Analysis: Identify, formulate and analyse the complex scientific problems using the knowledge gained across various streams of science and technology.

PO3: Effective Communication: Ability to articulate ideas, communicate effectively using current tools in the field of ICT along with effective report writing and documentation.

PO4: Development of Skill and Attitude: Enabling the students with the required skill, right attitude, time management and self-discipline for prominent career in industry, research institutes and for further academic study.

PO5: Life Long Learning and Social Responsibility: Recognise the need and ability to engage in lifelong learning and work effectively as an individual and as a member of diverse team. Students get the ability to act with an informed awareness of issues to participate in civic life through volunteering.

PROGRAMME SPECIFIC OUTCOME (DEPARTMENT WISE):

| | |
|------|--|
| PSO1 | Understands, identify and interrelate with the background of organic reaction mechanisms, complex Stereochemical structures, molecular rearrangements, instrumental method of chemical analysis and separation techniques |
| PSO2 | Analyses the importance of various elements in the periodic table, coordination chemistry and structure of molecules, properties of compounds, and structural determination of complexes using theories. |
| PSO3 | Gathers attention about the physical aspects of atomic structure, dual behaviour, reaction pathways with respect to time, various energy transformations, molecular assembly in nanolevel, electrochemistry & infer their significance |
| PSO4 | Learns, constructs and analyses the potential uses of analytical techniques, medicinal chemistry and green chemistry. |
| PSO5 | Organise and carry out experiments in the area of organic analysis, estimation, separation, derivative process, preparation, conductometric, potentiometric and solve spectral analysis |

| | COURSE OUTCOMES | BLOOM'S TAXONOMY LEVEL |
|-----|---|-------------------------------|
| CO1 | Appreciates the fundamentals of molecular thermodynamics | V (Evaluate) |
| CO2 | Recognises the various electrochemical reactions | I (Knowledge) |
| CO3 | Applies the wave mechanics for determining atomic structures | III (Apply) |
| CO4 | Understands the importance of quantitative mechanics in electronic filling | II (Understand) |
| CO5 | Visualises the macromolecular structures | III (Apply) |

TABLE 1: CO, PO, PSO MAPPING

| Course Outcomes | Program Outcomes | | | | | Program Specific Outcomes | | | |
|-----------------|------------------|-----|-----|-----|-----|---------------------------|------|------|------|
| | PO1 | PO2 | PO3 | PO4 | PO5 | PSO1 | PSO2 | PSO3 | PSO4 |
| 1 | H | | | H | | | | | H |
| 2 | S | | H | H | | | H | | H |
| 3 | H | H | | | | | | H | H |
| 4 | H | | H | | H | | H | | H |
| 5 | H | H | | S | H | | H | | H |

H: Highly Supportive

S: Supportive

Table 2: COURSE OUTCOME ATTAINMENT

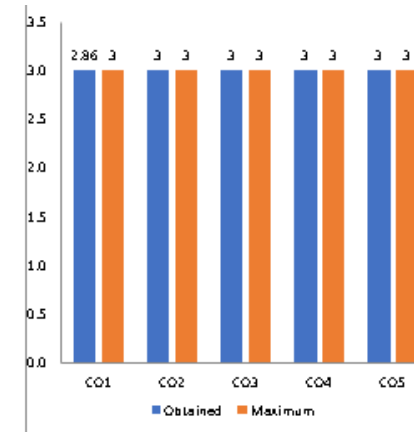
Attainment scale:

Pass percent of 75% and above= 3

Pass percent between 65% - 75%= 2

Pass percent between 55%- 65%= 1

Pass percent of less than 55%= 0



| CO | WEEKLY TEST | | MID SEM | | PREFINAL | | ASSIGNMENT | | VIVA-VOCE | | External Exam | | | | |
|-----|-------------|------------------|---------|------------------|----------|------------------|------------|------------------|-----------|------------------|---------------|------------------|--------------------------|-----------------------|-----|
| | pass% | Attainment level | pass% | Attainment level | pass% | Attainment level | pass% | Attainment level | pass% | Attainment level | co wise pass% | Attainment level | co wise external average | co wise total average | |
| CO1 | 100.0 | 3.0 | 100.0 | 3.0 | 96.0 | 3.0 | | | | | 3.0 | 96.0 | 3.0 | 3.0 | 3.0 |
| CO2 | | | 100.0 | 3.0 | 96.0 | 3.0 | | | | | 3.0 | 96.0 | 3.0 | 3.0 | 3.0 |
| CO3 | | | | | 96.0 | 3.0 | | | | | 3.0 | 96.0 | 3.0 | 3.0 | 3.0 |
| CO4 | | | | | 96.0 | 3.0 | 100.0 | 3.0 | | | 3.0 | 96.0 | 3.0 | 3.0 | 3.0 |
| CO5 | | | | | 96.0 | 3.0 | | | 100.0 | 3.0 | 3.0 | 96.0 | 3.0 | 3.0 | 3.0 |

| AVERAGE | AVERAGE |
|---------|---------|
| 3 | 3 |

RESULT ANALYSIS:The total CO attainment of the course is verygood.

Table 3: PROGRAMME OUTCOME MAPPING



| OUTCOME | PO1 | PO2 | PO3 | PO4 | PO5 |
|------------------------|-----|-----|-----|-----|-----|
| CO1 | H 3 | | | H 3 | |
| CO2 | | | H 3 | H 3 | |
| CO3 | H 3 | H 3 | | | |
| CO4 | H 3 | | H 3 | | H 3 |
| CO5 | H 3 | H 3 | | | H 3 |
| AVERAGE OF COS FOR POS | 3 | 3 | 3 | 3 | 3 |
| AVERAGE OF POS | 3 | 3 | 3 | 3 | 3 |
| AVERAGE | 3 | | | | |

COURSE OUTCOME MAPPING

MAPPING COURSE OUTCOMES LEADING TO THE ATTAINMENT OF PROGRAM OUTCOMES

COURSE TITLE: Analytical Techniques & Spectroscopy-II

COURSE CODE: MOC19205

CREDITS: 4

DEPARTMENT:M.Sc. Organic Chemistry

PROGRAMME OUTCOMES(M.Sc.)Or POs :

PO1: Scientific Knowledge:Ability to build a strong foundation of knowledge, integrated with the latest developments in science and technology which help students develop critical thinking, reasoning, decision making in process of quality education.

PO2: Problem Analysis: Identify, formulate and analyse the complex scientific problems using the knowledge gained across various streams of science and technology.

PO3: Effective Communication: Ability to articulate ideas, communicate effectively using current tools in the field of ICT along with effective report writing and documentation.

PO4: Development of Skill and Attitude: Enabling the students with the required skill, right attitude, time management and self-discipline for prominent career in industry, research institutes and for further academic study.

PO5: Life Long Learning and Social Responsibility: Recognise the need and ability to engage in lifelong learning and work effectively as an individual and as a member of diverse team. Students get the ability to act with an informed awareness of issues to participate in civic life through volunteering.

PROGRAMME SPECIFIC OUTCOME (DEPARTMENT WISE):

- PSO1 **Understands, identify and interrelate** with the background of organic reaction mechanisms, complex Stereochemical structures, molecular rearrangements, instrumental method of chemical analysis and separation techniques
- PSO2 **Analyses** the importance of various elements in the periodic table, coordination chemistry and structure of molecules, properties of compounds, and structural determination of complexes using theories.
- PSO3 **Gathers attention** about the physical aspects of atomic structure, dual behaviour, reaction pathways with respect to time, various energy transformations, molecular assembly in nanolevel, electrochemistry & **infer** their significance
- PSO4 **Learns, constructs and analyses** the potential uses of analytical techniques, medicinal chemistry and green chemistry.
- PSO5 **Organise** and carry out experiments in the area of organic analysis, estimation, separation, derivative process, preparation, conductometric, potentiometric and solve spectral analysis

| | COURSE OUTCOMES | BLOOM'S TAXONOMY LEVEL |
|-----|---|-------------------------------|
| CO1 | Summarises the concepts of hyphenated techniques | III (Apply) |
| CO2 | Distinguish and identify first and non first NMR spectra | IV (Analyze) |
| CO3 | Gain knowledge about mass spectrometry | II (Understand) |
| CO4 | Analyse the chemical structure using mass fragmentation | IV (Analyze) |
| CO5 | Validates the structure of molecular ions through PES | IV (Evaluate) |

TABLE 1: CO, PO, PSO MAPPING

| Course Outcomes | Program Outcomes | | | | | Program Specific Outcomes | | | |
|-----------------|------------------|----------|----------|----------|----------|---------------------------|----------|----------|----------|
| | PO1 | PO2 | PO3 | PO4 | PO5 | PSO1 | PSO2 | PSO3 | PSO4 |
| 1 | | | H | | H | H | | H | |
| 2 | | H | | | H | H | | | H |
| 3 | H | | H | | S | H | | | H |
| 4 | H | | | H | | H | | | |
| 5 | H | H | | | | | H | S | |

H: Highly Supportive

S: Supportive

Table 2: COURSE OUTCOME ATTAINMENT

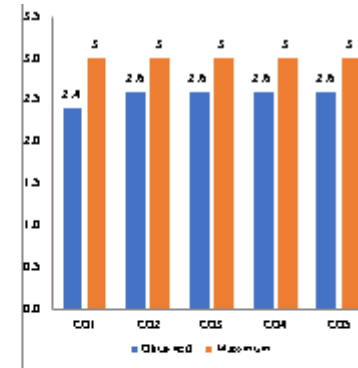
Attainment scale:

Pass percent of 75% and above= 3

Pass percent between 65% - 75%= 2

Pass percent between 55%- 65%= 1

Pass percent of less than 55%=0



| CO | WEEKLY TEST | | MID SEM | | PREFINAL | | ASSIGNMENT | | VIVA-VOCE | | External Exam | | | | |
|-----|-------------|------------------|---------|------------------|----------|------------------|------------|------------------|-----------|------------------|---------------|-------|------------------|---------------------------|------------------------|
| | pass% | Attainment level | pass% | Attainment level | pass% | Attainment level | pass% | Attainment level | pass% | Attainment level | ca score | pass% | Attainment level | ca score external average | ca score total average |
| CO1 | 57.5 | 1.0 | 75.0 | 3.0 | 62.0 | 1.0 | | | | | 1.7 | 83.0 | 3.0 | 3.0 | 2.4 |
| CO2 | | | 75.0 | 3.0 | 62.0 | 1.0 | | | | | 2.0 | 83.0 | 3.0 | 3.0 | 2.6 |
| CO3 | | | 75.0 | 3.0 | 62.0 | 1.0 | | | | | 2.0 | 83.0 | 3.0 | 3.0 | 2.6 |
| CO4 | | | | | 62.0 | 1.0 | 100.0 | 3.0 | | | 2.0 | 83.0 | 3.0 | 3.0 | 2.6 |
| CO5 | | | | | 62.0 | 1.0 | | | 100.0 | 3.0 | 2.0 | 83.0 | 3.0 | 3.0 | 2.6 |

| AVERAGE | AVERAGE |
|---------|---------|
| 3 | 2.56 |

RESULT ANALYSIS: The total CO attainment of the course is good. Performance in the prefinal exam needs to be improved, to improve overall course outcome attainment level.

Table 3: PROGRAMME OUTCOME MAPPING



| OUTCOME | P01 | P02 | P03 | P04 | P05 |
|------------------------|------|-----|--------|-----|--------|
| CO1 | | | H 1.66 | | H 1.66 |
| CO2 | | H 2 | | | H 2 |
| CO3 | H 2 | | H 2 | | |
| CO4 | H 2 | | | | |
| CO5 | H 2 | H 2 | | H 2 | |
| AVERAGE OF COS FOR POS | 2 | 2 | 1.83 | 2 | 1.83 |
| AVERAGE OF POS | 1.7 | 1.7 | 1.56 | 1.7 | 1.56 |
| AVERAGE | 1.64 | | | | |

COURSE OUTCOME MAPPING

MAPPING COURSE OUTCOMES LEADING TO THE ATTAINMENT OF PROGRAM OUTCOMES

COURSE TITLE: Organic Chemistry-III

COURSE CODE: MOC19302

CREDITS: 4

DEPARTMENT:M.Sc. Organic Chemistry

PROGRAMME OUTCOMES(M.Sc.)Or POs :

PO1: Scientific Knowledge: Ability to build a strong foundation of knowledge, integrated with the latest developments in science and technology which help students develop critical thinking, reasoning, decision making in process of quality education.

PO2: Problem Analysis: Identify, formulate and analyse the complex scientific problems using the knowledge gained across various streams of science and technology.

PO3: Effective Communication: Ability to articulate ideas, communicate effectively using current tools in the field of ICT along with effective report writing and documentation.

PO4: Development of Skill and Attitude: Enabling the students with the required skill, right attitude, time management and self-discipline for prominent career in industry, research institutes and for further academic study.

PO5: Life Long Learning and Social Responsibility: Recognise the need and ability to engage in lifelong learning and work effectively as an individual and as a member of diverse team. Students get the ability to act with an informed awareness of issues to participate in civic life through volunteering.

PROGRAMME SPECIFIC OUTCOME (DEPARTMENT WISE):

- PSO1 **Understands, identify and interrelate** with the background of organic reaction mechanisms, complex Stereochemical structures, molecular rearrangements, instrumental method of chemical analysis and separation techniques
- PSO2 **Analyses** the importance of various elements in the periodic table, coordination chemistry and structure of molecules, properties of compounds, and structural determination of complexes using theories.
- PSO3 **Gathers attention** about the physical aspects of atomic structure, dual behaviour, reaction pathways with respect to time, various energy transformations, molecular assembly in nanolevel, electrochemistry & **infer** their significance
- PSO4 **Learns, constructs and analyses** the potential uses of analytical techniques, medicinal chemistry and green chemistry.
- PSO5 **Organise** and carry out experiments in the area of organic analysis, estimation, separation, derivative process, preparation, conductometric, potentiometric and solve spectral analysis

| | COURSE OUTCOMES | BLOOM'S TAXONOMY LEVEL |
|-----|---|-------------------------------|
| CO1 | • Perceives the concept of conformational analysis | III (Perceives) |
| CO2 | • Analyses the cruciality of stereochemical process | IV (Analyze) |
| CO3 | • Classify and interrelates types of asymmetric synthesis | II (Interrelates) |
| CO4 | • Understands and formulates retrosynthesis | IV (Formulates) |
| CO5 | Learns new techniques and concepts in organic synthesis | IV (concepts) |

TABLE 1: CO, PO, PSO MAPPING

| Course Outcomes | Program Outcomes | | | | | Program Specific Outcomes | | | |
|-----------------|------------------|----------|----------|----------|----------|---------------------------|----------|----------|----------|
| | PO1 | PO2 | PO3 | PO4 | PO5 | PSO1 | PSO2 | PSO3 | PSO4 |
| 1 | | | H | | H | H | | H | |
| 2 | | H | | | H | H | | | H |
| 3 | H | | H | | S | H | | | H |
| 4 | H | | | H | | H | | | |
| 5 | H | H | | | | | H | S | |

H: Highly Supportive

S: Supportive

Table 2: COURSE OUTCOME ATTAINMENT

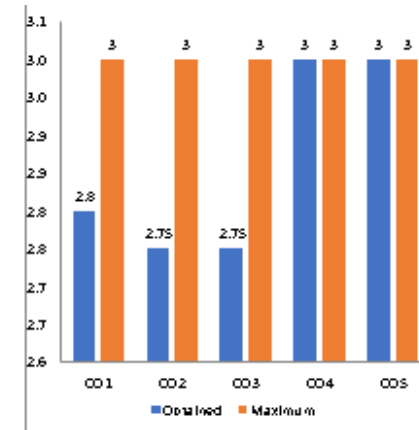
Attainment scale:

Pass percent of 75% and above= 3

Pass percent between 65% - 75%= 2

Pass percent between 55%- 65%= 1

Pass percent of less than 55%=0



| co | WEEKLY TEST | | MID SEM | | PREFINAL | | ASSIGNMENT | | VIVA-VOCE | | External Exam | | | | |
|-----|-------------|------------------|---------|------------------|----------|------------------|------------|------------------|-----------|------------------|---------------|--------|------------------|--------------------------|---------------|
| | pass% | Attainment level | pass % | Attainment level | pass % | Attainment level | pass % | Attainment level | pass % | Attainment level | co wis | pass % | Attainment level | co wise external average | co wise total |
| CO1 | 68.0 | 2.0 | 85.0 | 3.0 | 78.0 | 3.0 | | | | | 2.6 | 88.0 | 3.0 | 3.0 | 2.8 |
| CO2 | | | 82.0 | 3.0 | 76.0 | 2.0 | | | | | 2.5 | 83.0 | 3.0 | 3.0 | 2.8 |
| CO3 | | | 79.0 | 3.0 | 75.0 | 2.0 | | | | | 2.5 | 83.0 | 3.0 | 3.0 | 2.8 |
| CO4 | | | | | 85.0 | 3.0 | 100.0 | 3.0 | | | 3.0 | 83.0 | 3.0 | 3.0 | 3.0 |
| CO5 | | | | | 84.0 | 3.0 | | | 100.0 | 3.0 | 3.0 | 83.0 | 3.0 | 3.0 | 3.0 |

| AVERAGE | AVERAGE |
|---------|---------|
| 3 | 2.8 |

RESULT ANALYSIS: The total CO attainment of the course is very good.

Table 3: PROGRAMME OUTCOME MAPPING



| OUTCOME | P01 | P02 | P03 | P04 | P05 |
|------------------------|-------|-------|-------|-----|-----|
| CO1 | | | H 3 | | H 3 |
| CO2 | | H 3 | | | H 3 |
| CO3 | H 3 | | H 2.5 | H 3 | |
| CO4 | H 3 | | | H 3 | |
| CO5 | H 1.3 | H 2.5 | | | |
| AVERAGE OF COS FOR POS | 2.75 | 2.75 | 2.75 | 3 | 3 |
| AVERAGE OF POS | 2.75 | 2.75 | 2.75 | 3 | 3 |
| AVERAGE | 2.85 | | | | |

COURSE OUTCOME MAPPING

MAPPING COURSE OUTCOMES LEADING TO THE ATTAINMENT OF PROGRAM OUTCOMES

COURSE TITLE: Organic Chemistry-IV

COURSE CODE: MOC19303

CREDITS: 4

DEPARTMENT:M.Sc. Organic Chemistry

PROGRAMME OUTCOMES(M.Sc.)Or POs :

PO1: Scientific Knowledge:Ability to build a strong foundation of knowledge, integrated with the latest developments in science and technology which help students develop critical thinking, reasoning, decision makingin process of quality education.

PO2: Problem Analysis: Identify, formulate and analyse the complex scientific problems using the knowledge gained across various streams of science and technology.

PO3: Effective Communication: Ability to articulate ideas, communicate effectively using current tools in the field of ICT along with effective report writing and documentation.

PO4: Development of Skill and Attitude: Enabling the students with the required skill, right attitude, time management and self-discipline for prominent career in industry, research institutes and for further academic study.

PO5: Life Long Learning and Social Responsibility: Recognise the need and ability to engage in lifelong learning and work effectively as an individual and as a member of diverse team. Students get the ability to act with an informed awareness of issues to participate in civic life through volunteering.

PROGRAMME SPECIFIC OUTCOME (DEPARTMENT WISE):

- PSO1 **Understands, identify and interrelate** with the background of organic reaction mechanisms, complex Stereochemical structures, molecular rearrangements, instrumental method of chemical analysis and separation techniques
- PSO2 **Analyses** the importance of various elements in the periodic table, coordination chemistry and structure of molecules, properties of compounds, and structural determination of complexes using theories.
- PSO3 **Gathers attention** about the physical aspects of atomic structure, dual behaviour, reaction pathways with respect to time, various energy transformations, molecular assembly in nanolevel, electrochemistry & **infer** their significance
- PSO4 **Learns, constructs and analyses** the potential uses of analytical techniques, medicinal chemistry and green chemistry.
- PSO5 **Organise** and carry out experiments in the area of organic analysis, estimation, separation, derivative process, preparation, conductometric, potentiometric and solve spectral analysis

| | COURSE OUTCOMES | BLOOM'S TAXONOMY LEVEL |
|-----|--|-------------------------------|
| CO1 | • Appreciate the importance of protecting groups | III (Appreciate) |
| CO2 | • Gains the potential of organic reagents in synthesis | IV (Analyse) |
| CO3 | • Enlightens the knowledge about new synthetic reactions | V (Enlightens) |
| CO4 | • Appreciate the importance of protecting groups | III (Understand) |
| CO5 | • Gains the potential of organic reagents in synthesis | VI (Create/Synthesis) |

TABLE 1: CO, PO, PSO MAPPING

| Course Outcomes | Program Outcomes | | | | | Program Specific Outcomes | | | |
|-----------------|------------------|-----|-----|-----|-----|---------------------------|------|------|------|
| | PO1 | PO2 | PO3 | PO4 | PO5 | PSO1 | PSO2 | PSO3 | PSO4 |
| 1 | H | | H | | H | H | | H | |
| 2 | H | H | | | H | H | | | H |
| 3 | H | | H | | S | H | | | H |
| 4 | H | | | H | | H | | | |
| 5 | H | H | | | | | H | S | |

H: Highly Supportive

S: Supportive

Table 2: COURSE OUTCOME ATTAINMENT

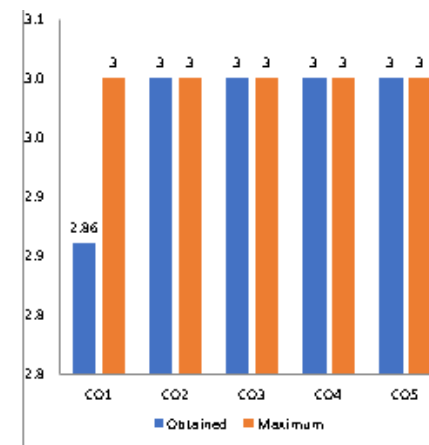
Attainment scale:

Pass percent of 75% and above= 3

Pass percent between 65% - 75%= 2

Pass percent between 55%- 65%= 1

Pass percent of less than 55%= 0



| co | WEEKLY TEST | | MID SEM | | PREFINAL | | ASSIGNMENT | | VIVA-VOCE | | co wis | External Exam | | | |
|-----|-------------|------------------|---------|------------------|----------|------------------|------------|------------------|-----------|------------------|--------|---------------|------------------|--------------------------|-----------------------|
| | pass% | Attainment level | pass% | Attainment level | pass% | Attainment level | pass% | Attainment level | pass% | Attainment level | | pass% | Attainment level | co wise external average | co wise total average |
| CO1 | 72.0 | 2.0 | 84.0 | 3.0 | 80.0 | 3.0 | | | | | 2.6 | 86.0 | 3.0 | 3.0 | 2.9 |
| CO2 | | | 84.0 | 3.0 | 80.0 | 3.0 | | | | | 3.0 | 86.0 | 3.0 | 3.0 | 3.0 |
| CO3 | | | 84.0 | 3.0 | 80.0 | 3.0 | | | | | 3.0 | 86.0 | 3.0 | 3.0 | 3.0 |
| CO4 | | | | | 80.0 | 3.0 | 100.0 | 3.0 | | | 3.0 | 86.0 | 3.0 | 3.0 | 3.0 |
| CO5 | | | | | 80.0 | 3.0 | | | 100.0 | 3.0 | 3.0 | 86.0 | 3.0 | 3.0 | 3.0 |

| AVERAGE | AVERAGE |
|---------|---------|
| 3 | 2.96 |

RESULT ANALYSIS: The total CO attainment of the course is good. Performance in the prefinal exam needs to be improved, to improve overall course outcome attainment level.

Table 3: PROGRAMME OUTCOME MAPPING



| OUTCOME | PO1 | | PO2 | | PO3 | | PO4 | | PO5 | |
|------------------------|------|-----|------|---|------|-----|------|---|------|-----|
| CO1 | H | 2.6 | | | H | 2.6 | | | H | 2.6 |
| CO2 | H | 3 | | | | | | | H | 3 |
| CO3 | H | 3 | H | 3 | H | 3 | | | | |
| CO4 | H | 3 | | | | | | | | |
| CO5 | H | 3 | H | 3 | | | H | 3 | | |
| AVERAGE OF COS FOR POS | 2.92 | | 3 | | 2.8 | | 3 | | 2.8 | |
| AVERAGE OF POS | 2.88 | | 2.96 | | 2.76 | | 2.96 | | 2.76 | |
| AVERAGE | 2.86 | | | | | | | | | |

COURSE OUTCOME MAPPING

MAPPING COURSE OUTCOMES LEADING TO THE ATTAINMENT OF PROGRAM OUTCOMES

COURSE TITLE: Organic Chemistry-V

COURSE CODE: MOC19302

CREDITS: 4

DEPARTMENT:M.Sc. Organic Chemistry

PROGRAMME OUTCOMES(M.Sc.)Or POs :

PO1: Scientific Knowledge:Ability to build a strong foundation of knowledge, integrated with the latest developments in science and technology which help students develop critical thinking, reasoning, decision making in process of quality education.

PO2: Problem Analysis: Identify, formulate and analyse the complex scientific problems using the knowledge gained across various streams of science and technology.

PO3: Effective Communication: Ability to articulate ideas, communicate effectively using current tools in the field of ICT along with effective report writing and documentation.

PO4: Development of Skill and Attitude: Enabling the students with the required skill, right attitude, time management and self-discipline for prominent career in industry, research institutes and for further academic study.

PO5: Life Long Learning and Social Responsibility: Recognise the need and ability to engage in lifelong learning and work effectively as an individual and as a member of diverse team. Students get the ability to act with an informed awareness of issues to participate in civic life through volunteering.

PROGRAMME SPECIFIC OUTCOME (DEPARTMENT WISE):

- PSO1 **Understands, identify and interrelate** with the background of organic reaction mechanisms, complex Stereochemical structures, molecular rearrangements, instrumental method of chemical analysis and separation techniques
- PSO2 **Analyses** the importance of various elements in the periodic table, coordination chemistry and structure of molecules, properties of compounds, and structural determination of complexes using theories.
- PSO3 **Gathers attention** about the physical aspects of atomic structure, dual behaviour, reaction pathways with respect to time, various energy transformations, molecular assembly in nanolevel, electrochemistry & **infer** their significance
- PSO4 **Learns, constructs and analyses** the potential uses of analytical techniques, medicinal chemistry and green chemistry.
- PSO5 **Organise** and carry out experiments in the area of organic analysis, estimation, separation, derivative process, preparation, conductometric, potentiometric and solve spectral analysis

| | COURSE OUTCOMES | BLOOM'S TAXONOMY LEVEL |
|-----|---|-------------------------------|
| CO1 | • Appreciate the importance of ¹³ C and 2D-NMR | IV (Appreciate) |
| CO2 | • Gains the potential of organic polymers | II (Understand) |
| CO3 | • Enlightens the knowledge about green chemistry | IV (Enlightens) |
| CO4 | • Determines the chemical environment of ¹³ C in organic molecules | II (Determines) |
| CO5 | Analyses the chemical structure using 2D NMR and ORD | IV (Analyses) |

TABLE 1: CO, PO, PSO MAPPING

| Course Outcomes | Program Outcomes | | | | | Program Specific Outcomes | | | |
|-----------------|------------------|-----|-----|-----|-----|---------------------------|------|------|------|
| | PO1 | PO2 | PO3 | PO4 | PO5 | PSO1 | PSO2 | PSO3 | PSO4 |
| 1 | H | | | | H | H | H | | S |
| 2 | H | | H | | H | | | H | |
| 3 | H | | H | H | | | | H | |
| 4 | H | H | | | S | H | H | | S |
| 5 | H | H | | H | | H | | S | |

H: Highly Supportive

S: Supportive

Table 2: COURSE OUTCOME ATTAINMENT

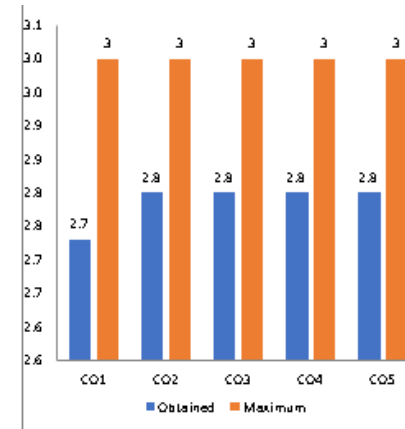
Attainment scale:

Pass percent of 75% and above= 3

Pass percent between 65% - 75%= 2

Pass percent between 55%- 65%= 1

Pass percent of less than 55%= 0



| co | WEEKLY TEST | | MID SEM | | PREFINAL | | ASSIGNMENT | | VIVA-VOCE | | External Exam | | | | |
|-----|-------------|------------------|---------|------------------|----------|------------------|------------|------------------|-----------|------------------|---------------|-------|------------------|--------------------------|-----------------------|
| | pass% | Attainment level | pass% | Attainment level | pass% | Attainment level | pass% | Attainment level | pass% | Attainment level | co wis | pass% | Attainment level | co wise external average | co wise total average |
| CO1 | 62.5 | 2.0 | 84.0 | 3.0 | 68.0 | 2.0 | | | | | 2.5 | 88.0 | 3.0 | 3.0 | 2.7 |
| CO2 | | | 84.0 | 3.0 | 68.0 | 2.0 | | | | | 2.5 | 88.0 | 3.0 | 3.0 | 2.8 |
| CO3 | | | 84.0 | 3.0 | 68.0 | 2.0 | | | | | 2.5 | 88.0 | 3.0 | 3.0 | 2.8 |
| CO4 | | | | | 68.0 | 2.0 | 100.0 | 3.0 | | | 2.5 | 88.0 | 3.0 | 3.0 | 2.8 |
| CO5 | | | | | 68.0 | 2.0 | | | 100.0 | 3.0 | 2.5 | 88.0 | 3.0 | 3.0 | 2.8 |

| AVERAGE | AVERAGE |
|---------|---------|
| 3 | 2.78 |

RESULT ANALYSIS:The total CO attainment of the course is good. Performance in the prefinal exam needs to be improved, to improve overall course outcome attainment level.

Table 3: PROGRAMME OUTCOME MAPPING



| OUTCOME | PO1 | PO2 | PO3 | PO4 | PO5 |
|------------------------|--------|-------|-------|-------|--------|
| CO1 | H 2.33 | | | | |
| CO2 | H 2.5 | | H 2.5 | | H 2.33 |
| CO3 | H 2.5 | | H 2.5 | H 2.5 | H 2.5 |
| CO4 | H 2.5 | H 2.5 | | H 2.5 | |
| CO5 | H 2.5 | H 2.5 | | | |
| AVERAGE OF COS FOR POS | 2.46 | 2.5 | 3 | 2.5 | 2.41 |
| AVERAGE OF POS | 2.27 | 2.31 | 3 | 2.31 | 2.23 |
| AVERAGE | 2.28 | | | | |

COURSE OUTCOME MAPPING

MAPPING COURSE OUTCOMES LEADING TO THE ATTAINMENT OF PROGRAM OUTCOMES

COURSE TITLE: Advanced Heterocyclic Chemistry, Advanced Natural Products

COURSE CODE: MOC19305A/ B

CREDITS: 4

DEPARTMENT: M.Sc. Organic Chemistry

PROGRAMME OUTCOMES(M.Sc.)Or POs :

PO1: Scientific Knowledge: Ability to build a strong foundation of knowledge, integrated with the latest developments in science and technology which help students develop critical thinking, reasoning, decision making in process of quality education.

PO2: Problem Analysis: Identify, formulate and analyse the complex scientific problems using the knowledge gained across various streams of science and technology.

PO3: Effective Communication: Ability to articulate ideas, communicate effectively using current tools in the field of ICT along with effective report writing and documentation.

PO4: Development of Skill and Attitude: Enabling the students with the required skill, right attitude, time management and self-discipline for prominent career in industry, research institutes and for further academic study.

PO5: Life Long Learning and Social Responsibility: Recognise the need and ability to engage in lifelong learning and work effectively as an individual and as a member of diverse team. Students get the ability to act with an informed awareness of issues to participate in civic life through volunteering.

PROGRAMME SPECIFIC OUTCOME (DEPARTMENT WISE):

| | |
|------|--|
| PSO1 | Understands, identify and interrelate with the background of organic reaction mechanisms, complex Stereochemical structures, molecular rearrangements, instrumental method of chemical analysis and separation techniques |
| PSO2 | Analyses the importance of various elements in the periodic table, coordination chemistry and structure of molecules, properties of compounds, and structural determination of complexes using theories. |
| PSO3 | Gathers attention about the physical aspects of atomic structure, dual behaviour, reaction pathways with respect to time, various energy transformations, molecular assembly in nanolevel, electrochemistry & infer their significance |
| PSO4 | Learns, constructs and analyses the potential uses of analytical techniques, medicinal chemistry and green chemistry. |
| PSO5 | Organise and carry out experiments in the area of organic analysis, estimation, separation, derivative process, preparation, conductometric, potentiometric and solve spectral analysis |

| | COURSE OUTCOMES | BLOOM'S TAXONOMY LEVEL |
|-----|---|-------------------------------|
| CO1 | • Understands the background of heterocyclics | II (Understand) |
| CO2 | • Compares the reactivity of aromatic and nonaromatic heterocyclics | I (Knowledge) |
| CO3 | • Differentiate five and six membered heterocyclics | IV (Distinguish) |
| CO4 | • Distinguish heterocyclics with more than two heteroatoms | IV (Differentiate) |
| CO5 | • Recognises the large ring and other heterocyclics | III (Recognise) |

TABLE 1: CO, PO, PSO MAPPING

| Course Outcomes | Program Outcomes | | | | | Program Specific Outcomes | | | |
|-----------------|------------------|-----|-----|-----|-----|---------------------------|------|------|------|
| | PO1 | PO2 | PO3 | PO4 | PO5 | PSO1 | PSO2 | PSO3 | PSO4 |
| 1 | H | | | H | | | | | H |
| 2 | S | | H | H | | | H | | H |
| 3 | H | H | | | | | | H | H |
| 4 | H | | H | | H | | H | | H |
| 5 | H | H | | S | H | | H | | H |

H: Highly Supportive

S: Supportive

Table 2: COURSE OUTCOME ATTAINMENT

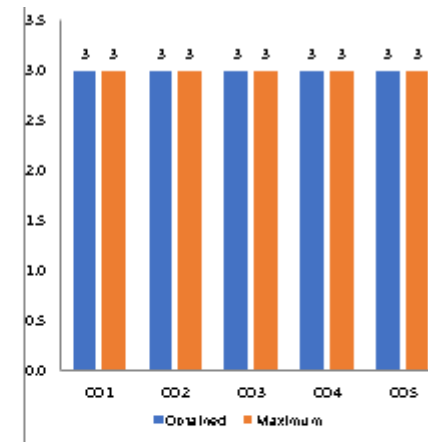
Attainment scale:

Pass percent of 75% and above= 3

Pass percent between 65% - 75%= 2

Pass percent between 55%- 65%= 1

Pass percent of less than 55%= 0



| co | WEEKLY TEST | | MID SEM | | PREFINAL | | ASSIGNMENT | | VIVA-VOCE | | External Exam | | | |
|-----|-------------|------------------|---------|------------------|----------|------------------|------------|------------------|-----------|------------------|---------------|------------------|--------------------------|---------------|
| | pass% | Attainment level | pass % | Attainment level | pass % | Attainment level | pass % | Attainment level | pass % | Attainment level | pass % | Attainment level | co wise external average | co wise total |
| CO1 | 96.0 | 3.0 | 100.0 | 3.0 | 96.0 | 3.0 | | | | | 96.0 | 3.0 | 3.0 | 3.0 |
| CO2 | | | 100.0 | 3.0 | 96.0 | 3.0 | | | | | 96.0 | 3.0 | 3.0 | 3.0 |
| CO3 | | | | | 96.0 | 3.0 | | | | | 96.0 | 3.0 | 3.0 | 3.0 |
| CO4 | | | | | 96.0 | 3.0 | 100.0 | 3.0 | | | 96.0 | 3.0 | 3.0 | 3.0 |
| CO5 | | | | | 96.0 | 3.0 | | | | | 96.0 | 3.0 | 3.0 | 3.0 |

| AVERAGE | AVERAGE |
|---------|---------|
| 3 | 3 |

RESULT ANALYSIS:The total CO attainment of the course is very good.

Table 3: PROGRAMME OUTCOME MAPPING



| OUTCOME | PO1 | PO2 | PO3 | PO4 | PO5 |
|------------------------|-----|-----|-----|-----|-----|
| CO1 | H 3 | | | | |
| CO2 | | | H 3 | H 3 | |
| CO3 | H 3 | H 3 | | H 3 | |
| CO4 | H 3 | | H 3 | | H 3 |
| CO5 | H 3 | H 3 | | | H 3 |
| AVERAGE OF COS FOR POS | 3 | 3 | 3 | 3 | 3 |
| AVERAGE OF POS | 3 | 3 | 3 | 3 | 3 |
| AVERAGE | 3 | | | | |

COURSE OUTCOME MAPPING

MAPPING COURSE OUTCOMES LEADING TO THE ATTAINMENT OF PROGRAM OUTCOMES

COURSE TITLE: Organic Chemistry-VI

COURSE CODE: MOC19401

CREDITS: 4

DEPARTMENT: M.Sc. Organic Chemistry

PROGRAMME OUTCOMES(M.Sc.)Or POs :

PO1: Scientific Knowledge: Ability to build a strong foundation of knowledge, integrated with the latest developments in science and technology which help students develop critical thinking, reasoning, decision making in process of quality education.

PO2: Problem Analysis: Identify, formulate and analyse the complex scientific problems using the knowledge gained across various streams of science and technology.

PO3: Effective Communication: Ability to articulate ideas, communicate effectively using current tools in the field of ICT along with effective report writing and documentation.

PO4: Development of Skill and Attitude: Enabling the students with the required skill, right attitude, time management and self-discipline for prominent career in industry, research institutes and for further academic study.

PO5: Life Long Learning and Social Responsibility: Recognise the need and ability to engage in lifelong learning and work effectively as an individual and as a member of diverse team. Students get the ability to act with an informed awareness of issues to participate in civic life through volunteering.

PROGRAMME SPECIFIC OUTCOME (DEPARTMENT WISE):

- PSO1 **Understands, identify and interrelate** with the background of organic reaction mechanisms, complex Stereochemical structures, molecular rearrangements, instrumental method of chemical analysis and separation techniques
- PSO2 **Analyses** the importance of various elements in the periodic table, coordination chemistry and structure of molecules, properties of compounds, and structural determination of complexes using theories.
- PSO3 **Gathers attention** about the physical aspects of atomic structure, dual behaviour, reaction pathways with respect to time, various energy transformations, molecular assembly in nanolevel, electrochemistry & **infer** their significance
- PSO4 **Learns, constructs and analyses** the potential uses of analytical techniques, medicinal chemistry and green chemistry.
- PSO5 **Organise** and carry out experiments in the area of organic analysis, estimation, separation, derivative process, preparation, conductometric, potentiometric and solve spectral analysis

| | COURSE OUTCOMES | BLOOM'S TAXONOMY LEVEL |
|-----|--|-------------------------------|
| CO1 | • Appreciate the importance of protecting groups | III (Appreciate) |
| CO2 | • Gains the potential of organic reagents in synthesis | IV (Analyse) |
| CO3 | • Enlights the knowledge about new synthetic reactions | V (Enlights) |
| CO4 | • Appreciate the importance of protecting groups | III (Understand) |
| CO5 | • Gains the potential of organic reagents in synthesis | VI (Create/Synthesis) |

TABLE 1: CO, PO, PSO MAPPING

| Course Outcomes | Program Outcomes | | | | | Program Specific Outcomes | | | |
|-----------------|------------------|----------|----------|----------|----------|---------------------------|----------|----------|----------|
| | PO1 | PO2 | PO3 | PO4 | PO5 | PSO1 | PSO2 | PSO3 | PSO4 |
| 1 | H | | H | | H | H | | H | |
| 2 | H | H | | | H | H | | | H |
| 3 | H | | H | | S | H | | | H |
| 4 | H | | | H | | H | | | |
| 5 | H | H | | | | | H | S | |

H: Highly Supportive

S: Supportive

Table 2: COURSE OUTCOME ATTAINMENT

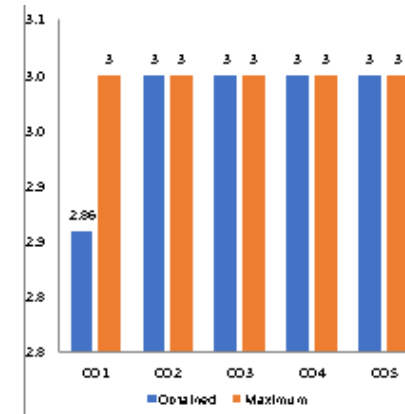
Attainment scale:

Pass percent of 75% and above= 3

Pass percent between 65% - 75%= 2

Pass percent between 55%- 65%= 1

Pass percent of less than 55%= 0



| co | WEEKLY TEST | | MID SEM | | PREFINAL | | ASSIGNMENT | | VIVA-VOCE | | External Exam | | | |
|-----|-------------|------------------|---------|------------------|----------|------------------|------------|------------------|-----------|------------------|----------------|------------------|--------------------------|---------------|
| | pass% | Attainment level | pass % | Attainment level | pass % | Attainment level | pass % | Attainment level | pass % | Attainment level | co wise pass % | Attainment level | co wise external average | co wise total |
| CO1 | 72.0 | 2.0 | 84.0 | 3.0 | 80.0 | 3.0 | | | | | 2.6 | 86.0 | 3.0 | 2.9 |
| CO2 | | | 84.0 | 3.0 | 80.0 | 3.0 | | | | | 3.0 | 86.0 | 3.0 | 3.0 |
| CO3 | | | 84.0 | 3.0 | 80.0 | 3.0 | | | | | 3.0 | 86.0 | 3.0 | 3.0 |
| CO4 | | | | | 80.0 | 3.0 | 100.0 | 3.0 | | | 3.0 | 86.0 | 3.0 | 3.0 |
| CO5 | | | | | 80.0 | 3.0 | | | 100.0 | 3.0 | 3.0 | 86.0 | 3.0 | 3.0 |

| AVERAGE | AVERAGE |
|---------|---------|
| 3 | 2.96 |

RESULT ANALYSIS: The total CO attainment of the course is good. Performance in the prefinal exam needs to be improved, to improve overall course outcome attainment level.

Table 3: PROGRAMME OUTCOME MAPPING



| OUTCOME | PO1 | | PO2 | | PO3 | | PO4 | | PO5 | |
|------------------------|------|-----|------|---|------|-----|------|---|------|-----|
| CO1 | H | 2.6 | | | H | 2.6 | | | H | 2.6 |
| CO2 | H | 3 | | | | | | | H | 3 |
| CO3 | H | 3 | H | 3 | H | 3 | | | | |
| CO4 | H | 3 | | | | | | | | |
| CO5 | H | 3 | H | 3 | | | H | 3 | | |
| AVERAGE OF COS FOR POS | 2.92 | | 3 | | 2.8 | | 3 | | 2.8 | |
| AVERAGE OF POS | 2.88 | | 2.96 | | 2.76 | | 2.96 | | 2.76 | |
| AVERAGE | 2.86 | | | | | | | | | |

COURSE OUTCOME MAPPING

MAPPING COURSE OUTCOMES LEADING TO THE ATTAINMENT OF PROGRAM OUTCOMES

COURSE TITLE: DSE-II Green Chemistry

COURSE CODE: MOC19402

CREDITS: 4

DEPARTMENT:M.Sc. Organic Chemistry

PROGRAMME OUTCOMES(M.Sc.)Or POs :

PO1: Scientific Knowledge:Ability to build a strong foundation of knowledge, integrated with the latest developments in science and technology which help students develop critical thinking, reasoning, decision making in process of quality education.

PO2: Problem Analysis: Identify, formulate and analyse the complex scientific problems using the knowledge gained across various streams of science and technology.

PO3: Effective Communication: Ability to articulate ideas, communicate effectively using current tools in the field of ICT along with effective report writing and documentation.

PO4: Development of Skill and Attitude: Enabling the students with the required skill, right attitude, time management and self-discipline for prominent career in industry, research institutes and for further academic study.

PO5: Life Long Learning and Social Responsibility: Recognise the need and ability to engage in lifelong learning and work effectively as an individual and as a member of diverse team. Students get the ability to act with an informed awareness of issues to participate in civic life through volunteering.

PROGRAMME SPECIFIC OUTCOME (DEPARTMENT WISE):

| | |
|------|---|
| PSO1 | Understands, identify and interrelate with the background of organic reaction mechanisms, complex Stereochemical structures, molecular rearrangements, instrumental method of chemical analysis and separation techniques |
| PSO2 | Analyses the importance of various elements in the periodic table, coordination chemistry and structure of molecules, properties of compounds, and structural determination of complexes using theories. |
| PSO3 | Gathers attention about the physical aspects of atomic structure, dual behaviour, reaction pathways with respect to time, various energy transformations, molecular assembly in nanolevel, & infer their significance |
| PSO4 | Learns, constructs and analyses the potential uses of analytical techniques, medicinal chemistry and green chemistry. |
| PSO5 | Organise and carry out experiments in the area of organic analysis, estimation, separation, derivative process, preparation, and solve spectral analysis |

| | COURSE OUTCOMES | BLOOM'S TAXONOMY LEVEL |
|-----|---|-------------------------------|
| CO1 | Appreciates the fundamentals of molecular thermodynamics | V (Evaluate) |
| CO2 | Recognises the various electrochemical reactions | I (Knowledge) |
| CO3 | Applies the wave mechanics for determining atomic structures | III (Apply) |
| CO4 | Understands the importance of quantitative mechanics in electronic filling | II (Understand) |
| CO5 | Visualises the macromolecular structures | III (Apply) |

TABLE 1: CO, PO, PSO MAPPING

| Course Outcomes | Program Outcomes | | | | | Program Specific Outcomes | | | |
|-----------------|------------------|-----|-----|-----|-----|---------------------------|------|------|------|
| | PO1 | PO2 | PO3 | PO4 | PO5 | PSO1 | PSO2 | PSO3 | PSO4 |
| 1 | H | | | H | | | | | H |
| 2 | S | | H | H | | | H | | H |
| 3 | H | H | | | | | | H | H |
| 4 | H | | H | | H | | H | | H |
| 5 | H | H | | S | H | | H | | H |

H: Highly Supportive

S: Supportive

Table 2: COURSE OUTCOME ATTAINMENT

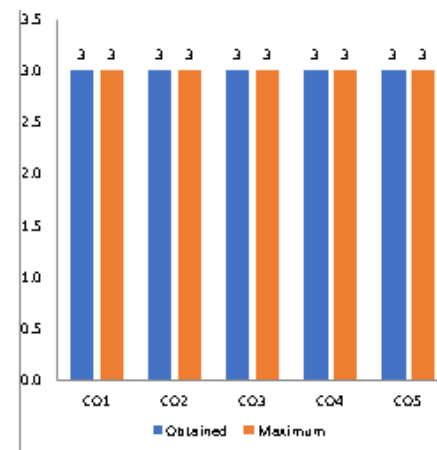
Attainment scale:

Pass percent of 75% and above= 3

Pass percent between 65% - 75%= 2

Pass percent between 55%- 65%= 1

Pass percent of less than 55%= 0



| co | WEEKLY TEST | | MID SEM | | PREFINAL | | ASSIGNMENT | | VIVA-VOCE | | External Exam | | | |
|-----|-------------|------------------|---------|------------------|----------|------------------|------------|------------------|-----------|------------------|---------------|------------------|--------------------------|-----------------------|
| | pass% | Attainment level | pass% | Attainment level | pass% | Attainment level | pass% | Attainment level | pass% | Attainment level | pass% | Attainment level | co wise external average | co wise total average |
| CO1 | 96.0 | 3.0 | 100.0 | 3.0 | 96.0 | 3.0 | | | | | 96.0 | 3.0 | 3.0 | 3.0 |
| CO2 | | | 100.0 | 3.0 | 96.0 | 3.0 | | | | | 96.0 | 3.0 | 3.0 | 3.0 |
| CO3 | | | | | 96.0 | 3.0 | | | | | 96.0 | 3.0 | 3.0 | 3.0 |
| CO4 | | | | | 96.0 | 3.0 | 100.0 | 3.0 | | | 96.0 | 3.0 | 3.0 | 3.0 |
| CO5 | | | | | 96.0 | 3.0 | | | | | 96.0 | 3.0 | 3.0 | 3.0 |

| AVERAGE | AVERAGE |
|---------|---------|
| 3 | 3 |

RESULT ANALYSIS:The total CO attainment of the course is verygood.

Table 3: PROGRAMME OUTCOME MAPPING



| OUTCOME | PO1 | PO2 | PO3 | PO4 | PO5 |
|------------------------|-----|-----|-----|-----|-----|
| CO1 | H 3 | | | | |
| CO2 | | | H 3 | H 3 | |
| CO3 | H 3 | H 3 | | H 3 | |
| CO4 | H 3 | | H 3 | | H 3 |
| CO5 | H 3 | H 3 | | | H 3 |
| AVERAGE OF COS FOR POS | 3 | 3 | 3 | 3 | 3 |
| AVERAGE OF POS | 3 | 3 | 3 | 3 | 3 |
| AVERAGE | 3 | | | | |

