

# FACULTY OF SCIENCE



**SWAMI VIVEKANAND SUBHARTI UNIVERSITY**  
**MEERUT 250005 (U.P.) INDIA**

**ORDINANCE NO.- V (53A)**  
**BACHELOR OF SCIENCE IN**  
**BIOTECHNOLOGY**  
**(B.SC. BIOTECH.) COURSE**

# **Ordinance No.- V (53A)**

## **Ordinance relating to Bachelor of Science in Biotechnology (B.Sc. Biotech.) Course**

### **Chapter-1**

#### **General**

1. This ordinance may be called “Ordinance Relating to Bachelor of Science in Biotechnology (B.Sc. Biotech.) Course”
2. It shall come into force with immediate effect.
3. This supersedes the previous Ordinance relating to Bachelor of Science in Biotechnology (B.Sc. Biotech.) Course [V-(53A)].

### **Chapter-2**

#### **Eligibility for Admission**

4. (i) An applicant for being eligible to be admitted in the first year of B.Sc. Biotech. Course should be at least 17 years of age as on 31<sup>st</sup> December of the year of admission.  
(ii) An applicant who has passed Intermediate Examination of U.P. Board or an equivalent examination from any other recognized board/University with Physics and Chemistry as compulsory subjects along with Mathematics/ Bio-Technology Computer Science/ Biology as an optional subject will be eligible for admission in the first year of the B.Sc. Biotechnology course.  
(iii) The admission shall be based on the merit in Qualifying examination (Intermediate or equivalent) the candidate should have obtained 45 % marks ( 40% for SC/ST ) or more in the aforementioned three subjects and not less than 40 % marks (35% for SC/ST) in individual subject.

### **Chapter-3**

#### **Teaching course**

5. The B.Sc. Biotechnology course shall be of three years duration, divided into six semesters
6. The Academic calendar shall be as follows

|                                 |  |
|---------------------------------|--|
| <u>I, III, and V semesters</u>  | : 1 <sup>st</sup> August to 30 <sup>th</sup> November, |
| <b>Exam.</b>                    | : 1 <sup>st</sup> to 15 <sup>th</sup> Dec.             |
| <u>II, IV, and VI semesters</u> | : 1 <sup>st</sup> January to 30 <sup>th</sup> April,   |
| <b>Exam.</b>                    | : 1 <sup>st</sup> to 15 <sup>th</sup> May              |

7. The study and evaluation scheme of the course shall be as given below.

**FIRST YEAR**

**FIRST SEMESTER**

**THEORY PAPER**

| S. No. | Subject Name   | Sessional  |              |            |       | ESE | Subject Total |
|--------|--|------------|--------------|------------|-------|-----|---------------|
|        |  | CT         | TA           | Attendance | Total |     |               |
|        |  | 1.         | CELL BIOLOGY | 15         | 5     | 10  |               |
| 2.     | BIOCHEMISTRY AND BIOPHYSICS                                    | 15         | 5            | 10         | 30    | 70  | 100           |
| 3.     | BOTANY I: ALGAE, FUNGI, BRYOPHYTA, PTERIDOPHYTA AND GYMNOSPERM | 15         | 5            | 10         | 30    | 70  | 100           |
| 4.     | ZOOLOGY I: NON CHORDATES AND PROTOCHORDATES                    | 15         | 5            | 10         | 30    | 70  | 100           |
| 5.     | CHEMISTRY I: PHYSICAL CHEMISTRY                                | 15         | 5            | 10         | 30    | 70  | 100           |
| 6.     | ENVIRONMENTAL SCIENCES   | Qualifying |              |            |       | 50  |               |

**TOTAL- 500**

**PRACTICAL PAPER**

| S. No. | Subject Name                 | Sessional |                                    |            |       | ESE | Subject Total |
|--------|------------------------------|-----------|------------------------------------|------------|-------|-----|---------------|
|        |                              | CT        | TA                                 | Attendance | Total |     |               |
|        |                              | 1.        | PRACTICAL I<br>(Based on 1,2, 3,4) | 15         | 5     | 10  |               |
| 2.     | PRACTICAL II<br>(Based on 5) | 15        | 5                                  | 10         | 30    | 70  | 100           |

**Total 200**

**Total (I Semester)- 700**

**FIRST YEAR****SECOND SEMESTER****THEORY PAPER**

| S. No. | Subject Name                                       | Sessional |          |            |       | ESE | Subject Total |
|--------|--|-----------|----------|------------|-------|-----|---------------|
|        |  | CT        | TA       | Attendance | Total |     |               |
|        |  | 1.        | GENETICS | 15         | 5     | 10  |               |
| 2.     | BIOCHEMISTRY AND ENZYMOLOGY                        | 15        | 5        | 10         | 70    | 100 |               |
| 3.     | BOTANY II: ANGIOSPERM TAXONOMY AND ECONOMIC BOTANY | 15        | 5        | 10         | 70    | 100 |               |
| 4.     | CHEMISTRY II: INORGANIC CHEMISTRY                  | 15        | 5        | 10         | 70    | 100 |               |
| 5.     | ENGLISH  | 15        | 5        | 10         | 70    | 100 |               |

Total -500

**PRACTICAL PAPER**

| S. No. | Subject Name                 | Sessional |                                    |            |       | ESE | Subject Total |
|--------|------------------------------|-----------|------------------------------------|------------|-------|-----|---------------|
|        |                              | CT        | TA                                 | Attendance | Total |     |               |
|        |                              | 1.        | PRACTICAL III<br>(Based on 1,2, 3) | 15         | 5     | 10  |               |
| 2.     | PRACTICAL IV<br>(Based on 4) | 15        | 5                                  | 10         | 30    | 70  | 100           |

Total :200

Total (II Semester):700

Total (I and II Semester):1400

**SECOND YEAR****THIRD SEMESTER****THEORY PAPER**

| S. No. | Subject Name                                      | Sessional  |              |            |       | ESE | Subject Total |    |
|--------|---|------------|--------------|------------|-------|-----|---------------|----|
|        |   | CT         | TA           | Attendance | Total |     |               |    |
|        |   | 1.         | MICROBIOLOGY | 15         | 5     | 10  |               | 30 |
| 2.     | BIOINFORMATICS AND BIOSTATISTICS                  | 15         | 5            | 10         | 30    | 70  | 100           |    |
| 3.     | ZOOLOGY II: ANIMAL PHYSIOLOGY                     | 15         | 5            | 10         | 30    | 70  | 100           |    |
| 4.     | CHEMISTRY III: ORGANIC CHEMISTRY                  | 15         | 5            | 10         | 30    | 70  | 100           |    |
| 5.     | B.S.R.G.(Bhartiya Sanskriti and Rashtriya Gaurav) | Qualifying |              |            |       | 50  |               |    |

**Total: 400****PRACTICAL PAPER**

| S. No. | Subject Name              | Sessional |                                 |            |       | ESE | Subject Total |
|--------|---------------------------|-----------|---------------------------------|------------|-------|-----|---------------|
|        |                           | CT        | TA                              | Attendance | Total |     |               |
|        |                           | 1.        | PRACTICAL V(based on 1,2 and 3) | 15         | 5     | 10  |               |
| 2.     | PRACTICAL VI (Based on 4) | 15        | 5                               | 10         | 30    | 70  | 100           |

**Total 200****Total (III Semester): 600**

**SECOND YEAR****FOURTH SEMESTER****THEORY PAPER**

| S. No. | Subject Name   | Sessional  |            |            |       | ESE | Subject Total |    |
|--------|--|------------|------------|------------|-------|-----|---------------|----|
|        |  | CT         | TA         | Attendance | Total |     |               |    |
|        |  | 1.         | IMMUNOLOGY | 15         | 5     | 10  |               | 30 |
| 2.     | MOLECULAR BIOLOGY  | 15         | 5          | 10         | 30    | 70  | 100           |    |
| 3.     | BOTANYIII:<br>PLANT<br>PHYSIOLOGY                            | 15         | 5          | 10         | 30    | 70  | 100           |    |
| 4.     | ZOOLOGY III:<br>ANIMAL<br>PHYSIOLOGY<br>AND<br>ENDOCRINOLOGY | 15         | 5          | 10         | 30    | 70  | 100           |    |
| 5.     | RELIGION AND CULTURE   | Qualifying |            |            |       | 50  |               |    |

**Total: 400****PRACTICAL PAPER**

| S. No. | Subject Name                  | Sessional |                              |            |       | ESE | Subject Total |
|--------|-------------------------------|-----------|------------------------------|------------|-------|-----|---------------|
|        |                               | CT        | TA                           | Attendance | Total |     |               |
|        |                               | 1.        | PRACTICAL VII( Based on 1,2) | 15         | 5     | 10  |               |
| 2.     | PRACTICAL VIII (Based on 3,4) | 15        | 5                            | 10         | 30    | 70  | 100           |

**Total: 200****Total (IV Semester) 600****Total (III and IV Semester):1200**

**THIRD YEAR****FIFTH SEMESTER****THEORY PAPER**

| S. No. | Subject Name                                       |            |    |            |    |       | ESE | Subject Total |
|--------|--|------------|----|------------|----|-------|-----|---------------|
|        |  | Sessional  |    |            |    | Total |     |               |
|        |  | CT         | TA | Attendance |    |       |     |               |
| 1.     | RECOMBINANT DNA TECHNOLOGY                         | 15         | 5  | 10         | 30 | 70    | 100 |               |
| 2.     | GENOMICS AND PROTEOMICS                            | 15         | 5  | 10         | 30 | 70    | 100 |               |
| 3.     | PLANT BIOTECHNOLOGY AND AGRICULTURAL BIOTECHNOLOGY | 15         | 5  | 10         | 30 | 70    | 100 |               |
| 5.     | IPR AND BIOSAFETY                                  | 15         | 5  | 10         | 30 | 70    | 100 |               |
| 6.     | FUNDAMENTALS OF COMPUTER                           | Qualifying |    |            | 50 |       |     |               |

**Total: 400****PRACTICAL PAPER**

| S. No. | Subject Name                |           |    |            |    |       | ESE | Subject Total |
|--------|-----------------------------|-----------|----|------------|----|-------|-----|---------------|
|        |                             | Sessional |    |            |    | Total |     |               |
|        |                             | CT        | TA | Attendance |    |       |     |               |
| 1.     | PRACTICAL IX (Based on 1,2) | 15        | 5  | 10         | 30 | 70    | 100 |               |
| 2.     | PRACTICAL X (Based on 3,4)  | 15        | 5  | 10         | 30 | 70    | 100 |               |

**Total:200****Total (V Semester) 600**



**THIRD YEAR****SIXTH SEMESTER****THEORY PAPER**

| S. No. | Subject Name                       | Sessional |  |            |       | ESE | Subject Total |
|--------|------------------------------------|-----------|--|------------|-------|-----|---------------|
|        |                                    | CT        | TA   | Attendance | Total |     |               |
|        |                                    | 1.        | <b>INSTRUMENTATION AND BIO-ANALYTICAL TECHNIQUES</b> | 15         | 5     |     |               |
| 2.     | <b>INDUSTRIAL BIOTECHNOLOGY</b>    | 15        | 5  | 10         | 30    | 70  | 100           |
| 3.     | <b>ENVIRONMENTAL BIOTECHNOLOGY</b> | 15        | 5  | 10         | 30    | 70  | 100           |
| 4.     | <b>ANIMAL BIOTECHNOLOGY</b>        | 15        | 5  | 10         | 30    | 70  | 100           |
| 5.     | <b>PROFESSIONAL COMMUNICATION</b>  | 15        | 5  | 10         | 30    | 70  | 100           |

**Total: 500****PRACTICAL PAPER**

| S. No. | Subject Name                           | Sessional |                                       |            |       | ESE | Subject Total |
|--------|--|-----------|---------------------------------------|------------|-------|-----|---------------|
|        |  | CT        | TA                                    | Attendance | Total |     |               |
|        |  | 1.        | <b>PRACTICAL XI</b><br>(Based on 1,2) | 15         | 5     |     |               |
| 2.     | <b>PRACTICAL XII</b> (Based on 3and 4) | 15        | 5                                     | 10         | 30    | 70  | 100           |

**Total 200****Total (VI Semester) 700****Total (V and VI Semester):1300****GRAND TOTAL: 3900**

#### **Chapter-4**

#### **Attendance**

8. The students are expected to attend all the classes and should not have less than 75% attendance in theory as well as in practical classes where held, to become eligible to appear for the university examination. Shortfall in attendance can, however be condoned in deserving cases to the extent of 10% by the Principal. If the short fall is more than 10% but not more than 15% the Principal may recommend deserving cases to the vice chancellor for condonation the order of the Vice- Chancellor in this regard shall be final.

#### **Chapter-5**

#### **Examination**

9. The examination in each semester shall be conducted in two parts:
- A. Internal assessment** will be of **30 marks** as under:-
- a. Midterm written test / practical including in-between snap tests if any, shall carry **20 marks** independently in each subject.
  - b. A maximum of **10 marks** in each subject shall be awarded for attending classes (theory / practical) as per the following norms:

|  |   |          |
|--|---|----------|
| 85% or more attendance                   | - | 10 Marks |
| 80% or more but less than 85% attendance | - | 9 Marks  |
| 75% or more but less than 80% attendance | - | 8 Marks  |
| 70% or more but less than 75% attendance | - | 7 Marks  |
| 65% or more but less than 70% attendance | - | 5 Marks  |
| 60% or more but less than 65% attendance | - | 3 Marks  |
| 51% or more but less than 60% attendance | - | 2 Marks  |
| 50% attendance                           | - | 1 Mark   |
| Less than 50% attendance                 | - | 0 Mark   |

#### **Chapter-6**

#### **Paper setting, Evaluation & Results**

10. The work of setting the End semester examination papers, conduct of the End semester and Annual examinations, Evaluation and declaration of results shall be as per the laid down Examination policies / latest University Notifications.

#### **Chapter – 7**

#### **Power to Modify**

11. In the event of any emergent situation, if any deviation is considered necessary, the Vice Chancellor is authorised to modify the Ordinance. Subject to subsequent ratification by the Executive Council.

**ORDINANCE NO.- V (53A)**  
**BACHELOR OF SCIENCE**  
**(B.SC.) COURSE**

# **Ordinance No.- V (68 A)**

## **Ordinance relating to Bachelor of Science (B.Sc.) Course**

### **Chapter-1**

#### **General**

1. This ordinance may be called 'Ordinance Relating to Bachelor of Science course.
2. It shall come into force with immediate effect.
3. This ordinance shall apply to all programmes leading to B.Sc. course.
4. This supersedes the Ordinance Related to B.Sc. Course ordinance no. V (68) notified earlier.

### **Chapter-2**

#### **Eligibility for Admission**

5. (i) An applicant who has passed Intermediate Examination of U.P. Board or an equivalent examination from any other recognized board/University with Physics and Chemistry as compulsory subjects along with Mathematics/Computer Science/Biology as an optional subject will be eligible for admission in the first year of the B.Sc. course.
6. The admission shall be based on the merit of entrance examination and marks of Qualifying examination (Intermediate or equivalent) the candidate should have obtained 45 % marks (40% for SC/ST ) or more in the aforementioned three subjects and not less than 40 % marks (35% for SC/ST) in individual subject.

### **Chapter-3**

#### **Teaching course**

7. The B.Sc. course shall be of three years duration, divided into six semesters.
8. The B.Sc. course is available in following streams:
  - a. B.Sc. (Physics, Chemistry, Mathematics)
  - b. B.Sc. (Chemistry, Botany, Zoology)
  - c. B.Sc. (Physics, Statistics, Mathematics)
9. The study and evaluation schemes of the B.Sc.(PCM), B.Sc.(CBZ) and B.Sc.(PSM) courses are enclosed as an **Annexure-I, II and III**, respectively.

10. The Academic calendar shall be as follows

I<sup>st</sup>, III<sup>rd</sup>, and V<sup>th</sup> semester Session : 1<sup>st</sup> August to 30<sup>th</sup> November,

**Exam.** : 1<sup>st</sup> to 15<sup>th</sup> Dec.

II<sup>nd</sup>, IV<sup>th</sup>, and VI<sup>th</sup> semesters Session : 1<sup>st</sup> January to 30<sup>th</sup> April,

**Exam.** : 1<sup>st</sup> to 15<sup>th</sup> May

#### **Chapter-4**

##### **Attendance**

11. The students are expected to attend all the classes and should not have less than 75% attendance in theory as well as in practical classes where held, to become eligible to appear for the university examination. Shortfall in attendance can, however be condoned in deserving cases to the extent of 10% by the Principal. If the short fall is more than 10% but not more than 15% the Principal may recommend deserving cases to the vice chancellor for condonation the order of the Hon'ble Vice- Chancellor in this regard shall be final.

#### **Chapter-5**

##### **Examination**

12. The performance of a student in a year shall be evaluated through continuous class assignment and annual examination. The continuous assessment shall be based on class tests, assignments Viva – Voce and attendance. The marks for continuous assessment (Sessional marks) shall be awarded at the end of the semester. The annual examination shall comprise written papers, practicals, project work, reports or a combination there of.

13. The distribution of marks for sessional, annual theory papers, practical and seminar, projects, industrial training shall be as indicated in Study and Evaluation Scheme.

14. The marks obtained in a subject shall consist of marks awarded in the annual theory paper, practical examination and sessional marks.

15. The examination in each semester shall be conducted in two parts:

**B. Internal assessment** will be of **30 marks** as under:-

c. Midterm written test / practical including in-between snap tests if any, shall carry **20 marks** independently in each subject.

d. A maximum of **10 marks** in each subject shall be awarded for attending classes (theory / practical) as per the following norms:

|  |   |          |
|--|---|----------|
| 85% or more attendance                   | - | 10 Marks |
| 80% or more but less than 85% attendance | - | 9 Marks  |
| 75% or more but less than 80% attendance | - | 8 Marks  |
| 70% or more but less than 75% attendance | - | 7 Marks  |
| 65% or more but less than 70% attendance | - | 5 Marks  |
| 60% or more but less than 65% attendance | - | 3 Marks  |
| 51% or more but less than 60% attendance | - | 2 Marks  |
| 50% attendance                           | - | 1 Mark   |
| Less than 50% attendance                 | - | 0 Mark   |

**B:- University Examination** carrying 70% of total marks.

16. The entire course has to be completed within a maximum of six yrs. from the date of original admission in the course.

#### **Chapter-6**

#### **Paper setting, Evaluation & Results**

17. The work of setting the End semester examination papers, conduct of the End semester and Annual examinations, Evaluation and declaration of results shall be as per the laid down Examination policies / latest University Notifications.

#### **Chapter – 7**

#### **Power to Modify**

18. In the event of any emergent situation, if any deviation is considered necessary, the Vice Chancellor is authorised to modify the Ordinance. Subject to subsequent ratification by the Executive Council.

**Annexure - 1**  
**Study and Evaluation Scheme**  
**B.Sc. (Physics, Chemistry, Mathematics)**

**I<sup>st</sup> YEAR**

**First Year**

|                    |   | Internal |            |    | ESE                                     | Total       |
|--------------------|---|----------|------------|----|---|-------------|
|                    |   | CT       | Attendance | TA |   |             |
| <b>I Semester</b>  |   |          |            |    |   |             |
| 1                  | Physics I (A)                               | 15       | 10         | 05 | 70                                      | 100         |
| 2                  | Physics I (B)                               | 15       | 10         | 05 | 70                                      | 100         |
| 3                  | Chemistry I (A)                             | 15       | 10         | 05 | 70                                      | 100         |
| 4                  | Chemistry I (B)                             | 15       | 10         | 05 | 70                                      | 100         |
| 5                  | Maths I (A)                                 | 30       | 10         | 10 | 100                                     | 150         |
| 6                  | Maths I (B)                                 | 30       | 10         | 10 | 100                                     | 150         |
| 7                  | Physics Practical I                         | 15       | 10         | 05 | 70                                      | 100         |
| 8                  | Chemistry Practical I                       | 15       | 10         | 05 | 70                                      | 100         |
| 9                  | Environmental Science ( <b>Qualifying</b> ) |          |            |    | 50                                      |             |
|                    |   |          |            |    | <b>Total</b>                            | <b>900</b>  |
| <b>II Semester</b> |   |          |            |    |   |             |
| 1                  | Physics II (A)                              | 15       | 10         | 05 | 70                                      | 100         |
| 2                  | Physics II (B)                              | 15       | 10         | 05 | 70                                      | 100         |
| 3                  | Chemistry II (A)                            | 15       | 10         | 05 | 70                                      | 100         |
| 4                  | Chemistry II (B)                            | 15       | 10         | 05 | 70                                      | 100         |
| 5                  | Maths II (A)                                | 30       | 10         | 10 | 100                                     | 150         |
| 6                  | Maths II (B)                                | 30       | 10         | 10 | 100                                     | 150         |
| 7                  | Physics Practical II                        | 15       | 10         | 05 | 70                                      | 100         |
| 8                  | Chemistry Practical II                      | 15       | 10         | 05 | 70                                      | 100         |
| 9                  | English ( <b>Foundation</b> )               | 15       | 10         | 05 | 70                                      | 100         |
|                    |   |          |            |    | <b>Total</b>                            | <b>1000</b> |
|                    |   |          |            |    | <b>Total (I Semester + II Semester)</b> | <b>1900</b> |

**Second Year**

|   |   | Internal |            |    | ESE          | Total       |
|---|---|----------|------------|----|--------------|-------------|
|   |   | CT       | Attendance | TA |              |             |
| <b>III Semester</b>                       |   |          |            |    |              |             |
| 1   | Physics III (A)                                   | 15       | 10         | 05 | 70           | 100         |
| 2   | Physics III (B)                                   | 15       | 10         | 05 | 70           | 100         |
| 3   | Chemistry III (A)                                 | 15       | 10         | 05 | 70           | 100         |
| 4   | Chemistry III (B)                                 | 15       | 10         | 05 | 70           | 100         |
| 5   | Maths III (A)                                     | 30       | 10         | 10 | 100          | 150         |
| 6   | Maths III (B)                                     | 30       | 10         | 10 | 100          | 150         |
| 7   | Physics Practical III                             | 15       | 10         | 05 | 70           | 100         |
| 8   | Chemistry Practical III                           | 15       | 10         | 05 | 70           | 100         |
| 9   | BHARTIYA SANSKRITI & RASTRIYA GAURAV (Qualifying) |          |            |    | 50           |             |
|   |   |          |            |    | <b>Total</b> | <b>900</b>  |
| <b>IV Semester</b>                        |   |          |            |    |              |             |
| 1   | Physics IV (A)                                    | 15       | 10         | 05 | 70           | 100         |
| 2   | Physics IV (B)                                    | 15       | 10         | 05 | 70           | 100         |
| 3   | Chemistry IV (A)                                  | 15       | 10         | 05 | 70           | 100         |
| 4   | Chemistry IV (B)                                  | 15       | 10         | 05 | 70           | 100         |
| 5   | Maths IV (A)                                      | 30       | 10         | 10 | 100          | 150         |
| 6   | Maths IV (B)                                      | 30       | 10         | 10 | 100          | 150         |
| 7   | Physics Practical IV                              | 15       | 10         | 05 | 70           | 100         |
| 8   | Chemistry Practical IV                            | 15       | 10         | 05 | 70           | 100         |
| 9   | Religion & Culture (Qualifying)                   |          |            |    | 50           |             |
|   |   |          |            |    | <b>Total</b> | <b>900</b>  |
| <b>Total (III Semester + IV Semester)</b> |   |          |            |    |              | <b>1800</b> |



### Third Year

|                    |   | Internal |            |    | ESE  | Total       |
|--------------------|---|----------|------------|----|--|-------------|
|                    |   | CT       | Attendance | TA |  |             |
| <b>V Semester</b>  |   |          |            |    |  |             |
| 1                  | Physics V (A)                           | 15       | 10         | 05 | 70   | 100         |
| 2                  | Physics V (B)                           | 15       | 10         | 05 | 70   | 100         |
| 3                  | Chemistry V (A)                         | 15       | 10         | 05 | 70   | 100         |
| 4                  | Chemistry V (B)                         | 15       | 10         | 05 | 70   | 100         |
| 5                  | Maths V (A)                             | 30       | 10         | 10 | 100  | 150         |
| 6                  | Maths V (B)                             | 30       | 10         | 10 | 100  | 150         |
| 7                  | Physics Practical V                     | 15       | 10         | 05 | 70   | 100         |
| 8                  | Chemistry Practical V                   | 15       | 10         | 05 | 70   | 100         |
| 9                  | Comp. Fundamentals (Qualifying)         |          |            |    | 50   |             |
|                    |   |          |            |    | <b>Total</b>                                     | <b>900</b>  |
| <b>VI Semester</b> |   |          |            |    |  |             |
| 1                  | Physics VI (A)                          | 15       | 10         | 05 | 70   | 100         |
| 2                  | Physics VI (B)                          | 15       | 10         | 05 | 70   | 100         |
| 3                  | Chemistry VI (A)                        | 15       | 10         | 05 | 70   | 100         |
| 4                  | Chemistry VI (B)                        | 15       | 10         | 05 | 70   | 100         |
| 5                  | Maths VI (A)                            | 30       | 10         | 10 | 100  | 150         |
| 6                  | Maths VI (B)                            | 30       | 10         | 10 | 100  | 150         |
| 7                  | Physics Practical VI                    | 15       | 10         | 05 | 70   | 100         |
| 8                  | Chemistry Practical VI                  | 15       | 10         | 05 | 70   | 100         |
| 9                  | Professional Communication (Foundation) | 15       | 10         | 05 | 70   | 100         |
|                    |   |          |            |    | <b>Total</b>                                     | <b>1000</b> |
|                    |   |          |            |    | <b>Total (V Semester + VI Semester)</b>          | <b>1900</b> |
|                    |   |          |            |    | <b>Previous Total (I Year + II Year)</b>         | <b>3700</b> |
|                    |   |          |            |    | <b>Grand Total (I Year + II Year + III Year)</b> | <b>5600</b> |

**\*Qualifying paper may be cleared in any semester.**

**Study and Evaluation Scheme**  
**B.Sc. (Chemistry, Botany, Zoology)**

**First Year: First Semester**

| S. No.     | Subject Name   | Evaluation Scheme |    |   |       |     | Subject Total |
|------------|--|-------------------|----|---|-------|-----|---------------|
|            |  | Sessional         |    |   |       | ESE |               |
|            |  | CT                | TA |   | Total |     |               |
| Attendance | Assignment   |                   |    |   |       |     |               |
| 1.         | Chemistry I  | 15                | 10 | 5 | 30    | 70  | 100           |
| 2.         | Chemistry II   | 15                | 10 | 5 | 30    | 70  | 100           |
| 3.         | Life and Diversity from Protozoa to Helminthes         | 15                | 10 | 5 | 30    | 70  | 100           |
| 4.         | Cell Biology   | 15                | 10 | 5 | 30    | 70  | 100           |
| 5.         | Diversity of Algae, Lichens and Bryophyta              | 15                | 10 | 5 | 30    | 70  | 100           |
| 6.         | Diversity of Pteridophyta, Gymnosperm and Palaeobotany | 15                | 10 | 5 | 30    | 70  | 100           |
| 7.         | Environmental Science( <b>Qualifying</b> )             |                   |    |   |       |     | 50            |
| 8.         | Practical Chemistry                                    | 15                | 10 | 5 | 30    | 70  | 100           |
| 9.         | Practical Zoology                                      | 15                | 10 | 5 | 30    | 70  | 100           |
| 10.        | Practical Botany                                       | 15                | 10 | 5 | 30    | 70  | 100           |
|            | <b>Total</b>   |                   |    |   |       |     | <b>900</b>    |

**First Year: Second Semester**

| S. No.     | Subject Name                                      | Evaluation Scheme |    |   |       |     | Subject Total |
|------------|---|-------------------|----|---|-------|-----|---------------|
|            |   | Sessional         |    |   |       | ESE |               |
|            |   | CT                | TA |   | Total |     |               |
| Attendance | Assignment  |                   |    |   |       |     |               |
| 1.         | Chemistry I                                       | 15                | 10 | 5 | 30    | 70  | 100           |
| 2.         | Chemistry II                                      | 15                | 10 | 5 | 30    | 70  | 100           |
| 3.         | Life and Diversity from Annelida to Echinodermata | 15                | 10 | 5 | 30    | 70  | 100           |
| 4.         | Genetics  | 15                | 10 | 5 | 30    | 70  | 100           |
| 5.         | Taxonomy of Angiosperms and Economic Botany       | 15                | 10 | 5 | 30    | 70  | 100           |
| 6.         | Plant Anatomy and Embryology                      | 15                | 10 | 5 | 30    | 70  | 100           |
| 7.         | English ( <b>Foundation</b> )                     | 15                | 10 | 5 | 30    | 70  | 100           |
| 8.         | Practical Chemistry                               | 15                | 10 | 5 | 30    | 70  | 100           |
| 9.         | Practical Zoology                                 | 15                | 10 | 5 | 30    | 70  | 100           |
| 10.        | Practical Botany                                  | 15                | 10 | 5 | 30    | 70  | 100           |
|            | <b>Total</b>                                      |                   |    |   |       |     | <b>1000</b>   |

**Second Year: Third Semester**

| S. No. | Subject Name  | Evaluation Scheme |    |   |            |       | ESE        | Subject Total |
|--------|---|-------------------|----|---|------------|-------|------------|---------------|
|        |   | Sessional         |    |   |            | Total |            |               |
|        |   | CT                | TA |   | Assignment |       |            |               |
|        | Attendance  |                   |    |   |            |       |            |               |
| 1.     | Chemistry I   | 15                | 10 | 5 | 30         | 70    | 100        |               |
| 2.     | Chemistry II  | 15                | 10 | 5 | 30         | 70    | 100        |               |
| 3.     | Chordata I  | 15                | 10 | 5 | 30         | 70    | 100        |               |
| 4.     | Mammalian physiology -I                                       | 15                | 10 | 5 | 30         | 70    | 100        |               |
| 5.     | Microbiology and Plant Pathology                              | 15                | 10 | 5 | 30         | 70    | 100        |               |
| 6.     | Cytology and Molecular Biology                                | 15                | 10 | 5 | 30         | 70    | 100        |               |
| 7.     | Bhartiya Sanskriti and Rashtriya Gaurav ( <b>Qualifying</b> ) |                   |    |   |            | 50    |            |               |
| 8.     | Practical Chemistry   | 15                | 10 | 5 | 30         | 70    | 100        |               |
| 9.     | Practical Zoology   | 15                | 10 | 5 | 30         | 70    | 100        |               |
| 10.    | Practical Botany  | 15                | 10 | 5 | 30         | 70    | 100        |               |
|        | <b>Total</b>  |                   |    |   |            | .     | <b>900</b> |               |

**Second Year: Fourth Semester**

| S. No. | Subject Name                             | Evaluation Scheme |    |   |            |       | ESE        | Subject Total |
|--------|--|-------------------|----|---|------------|-------|------------|---------------|
|        |  | Sessional         |    |   |            | Total |            |               |
|        |  | CT                | TA |   | Assignment |       |            |               |
|        | Attendance                               |                   |    |   |            |       |            |               |
| 1.     | Chemistry I                              | 15                | 10 | 5 | 30         | 70    | 100        |               |
| 2.     | Chemistry II                             | 15                | 10 | 5 | 30         | 70    | 100        |               |
| 3.     | Chordata II                              | 15                | 10 | 5 | 30         | 70    | 100        |               |
| 4.     | Mammalian physiology II                  | 15                | 10 | 5 | 30         | 70    | 100        |               |
| 5.     | Plant Ecology and Plant Biodiversity     | 15                | 10 | 5 | 30         | 70    | 100        |               |
| 6.     | Genetics and Plant Breeding              | 15                | 10 | 5 | 30         | 70    | 100        |               |
| 7.     | Religion & Culture ( <b>Qualifying</b> ) |                   |    |   |            | 50    |            |               |
| 8.     | Practical Chemistry                      | 15                | 10 | 5 | 30         | 70    | 100        |               |
| 9.     | Practical Zoology                        | 15                | 10 | 5 | 30         | 70    | 100        |               |
| 10.    | Practical Botany                         | 15                | 10 | 5 | 30         | 70    | 100        |               |
|        | <b>Total</b>                             |                   |    |   |            |       | <b>900</b> |               |

### Third Year: Fifth Semester

| S. No. | Subject Name                                   | Evaluation Scheme |            |   |            |       | ESE        | Subject Total |
|--------|--|-------------------|------------|---|------------|-------|------------|---------------|
|        |  | Sessional         |            |   |            | Total |            |               |
|        |  | CT                | TA         |   | Assignment |       |            |               |
|        |  | Attendance        | Assignment |   |            |       |            |               |
| 1.     | Chemistry I                                    | 15                | 10         | 5 | 30         | 70    | 100        |               |
| 2.     | Chemistry II                                   | 15                | 10         | 5 | 30         | 70    | 100        |               |
| 3.     | Evolution and Developmental Biology            | 15                | 10         | 5 | 30         | 70    | 100        |               |
| 4.     | Biostatistics, Bioinformatics and Biochemistry | 15                | 10         | 5 | 30         | 70    | 100        |               |
| 5.     | Plant Physiology                               | 15                | 10         | 5 | 30         | 70    | 100        |               |
| 6.     | Biochemistry                                   | 15                | 10         | 5 | 30         | 70    | 100        |               |
| 7.     | Computer ( <b>Qualifying</b> )                 |                   | 10         | 5 |            | 50    |            |               |
| 8.     | Practical Chemistry                            | 15                | 10         | 5 | 30         | 70    | 100        |               |
| 9.     | Practical Zoology                              | 15                | 10         | 5 | 30         | 70    | 100        |               |
| 10.    | Practical Botany                               | 15                | 10         | 5 | 30         | 70    | 100        |               |
|        | <b>Total</b>                                   |                   |            |   |            |       | <b>900</b> |               |

### Third Year: Sixth Semester

| S. No. | Subject Name                                    | Evaluation Scheme |            |   |            |       | ESE         | Subject Total |
|--------|---|-------------------|------------|---|------------|-------|-------------|---------------|
|        |   | Sessional         |            |   |            | Total |             |               |
|        |   | CT                | TA         |   | Assignment |       |             |               |
|        |   | Attendance        | Assignment |   |            |       |             |               |
| 1.     | Chemistry I                                     | 15                | 10         | 5 | 30         | 70    | 100         |               |
| 2.     | Chemistry II                                    | 15                | 10         | 5 | 30         | 70    | 100         |               |
| 3.     | Ecology, Animal Behavior, Economic Zoology      | 15                | 10         | 5 | 30         | 70    | 100         |               |
| 4.     | Microbiology, Immunology, Animal Biotechnology  | 15                | 10         | 5 | 30         | 70    | 100         |               |
| 5.     | Plant Biotechnology                             | 15                | 10         | 5 | 30         | 70    | 100         |               |
| 6.     | Biostatistics and Bioinformatics                | 15                | 10         | 5 | 30         | 70    | 100         |               |
| 7.     | Professional communication( <b>Foundation</b> ) | 15                | 10         | 5 | 30         | 70    | 100         |               |
| 8.     | Practical Chemistry                             | 15                | 10         | 5 | 30         | 70    | 100         |               |
| 9.     | Practical Zoology                               | 15                | 10         | 5 | 30         | 70    | 100         |               |
| 10.    | Practical Botany                                | 15                | 10         | 5 | 30         | 70    | 100         |               |
|        | <b>Total</b>                                    |                   |            |   |            |       | <b>1000</b> |               |

\*Qualifying paper may be cleared in any semester.

**Study and Evaluation Scheme**  
**B.Sc. (Physics, Statistics, Mathematics)**

**First Year**

|   |   | Internal |            |    | ESE          | Total       |
|---|---|----------|------------|----|--------------|-------------|
|   |   | CT       | Attendance | TA |              |             |
| <b>I Semester</b>                       |   |          |            |    |              |             |
| 1                                       | Physics I (A)                               | 15       | 10         | 05 | 70           | 100         |
| 2                                       | Physics I (B)                               | 15       | 10         | 05 | 70           | 100         |
| 3                                       | Statistics I (A)                            | 15       | 10         | 05 | 70           | 100         |
| 4                                       | Statistics I (B)                            | 15       | 10         | 05 | 70           | 100         |
| 5                                       | Maths I (A)                                 | 30       | 10         | 10 | 100          | 150         |
| 6                                       | Maths I (B)                                 | 30       | 10         | 10 | 100          | 150         |
| 7                                       | Physics Practical I                         | 15       | 10         | 05 | 70           | 100         |
| 8                                       | Statistics Practical I                      | 15       | 10         | 05 | 70           | 100         |
| 9                                       | Environmental Science ( <b>Qualifying</b> ) |          |            |    | 50           |             |
|   |   |          |            |    | <b>Total</b> | <b>900</b>  |
| <b>II Semester</b>                      |   |          |            |    |              |             |
| 1                                       | Physics II (A)                              | 15       | 10         | 05 | 70           | 100         |
| 2                                       | Physics II (B)                              | 15       | 10         | 05 | 70           | 100         |
| 3                                       | Statistics II (A)                           | 15       | 10         | 05 | 70           | 100         |
| 4                                       | Statistics II (B)                           | 15       | 10         | 05 | 70           | 100         |
| 5                                       | Maths II (A)                                | 30       | 10         | 10 | 100          | 150         |
| 6                                       | Maths II (B)                                | 30       | 10         | 10 | 100          | 150         |
| 7                                       | Physics Practical II                        | 15       | 10         | 05 | 70           | 100         |
| 8                                       | Statistics Practical II                     | 15       | 10         | 05 | 70           | 100         |
| 9                                       | English ( <b>Foundation</b> )               | 15       | 10         | 05 | 70           | 100         |
|   |   |          |            |    | <b>Total</b> | <b>1000</b> |
| <b>Total (I Semester + II Semester)</b> |   |          |            |    |              | <b>1900</b> |

## Second Year

|   |   | Internal |            |    | ESE          | Total       |
|---|---|----------|------------|----|--------------|-------------|
|   |   | CT       | Attendance | TA |              |             |
| <b>III Semester</b>                       |   |          |            |    |              |             |
| 1   | Physics III (A)                                   | 15       | 10         | 05 | 70           | 100         |
| 2   | Physics III (B)                                   | 15       | 10         | 05 | 70           | 100         |
| 3   | Statistics III (A)                                | 15       | 10         | 05 | 70           | 100         |
| 4   | Statistics III (B)                                | 15       | 10         | 05 | 70           | 100         |
| 5   | Maths III (A)                                     | 30       | 10         | 10 | 100          | 150         |
| 6   | Maths III (B)                                     | 30       | 10         | 10 | 100          | 150         |
| 7   | Physics Practical III                             | 15       | 10         | 05 | 70           | 100         |
| 8   | Statistics Practical III                          | 15       | 10         | 05 | 70           | 100         |
| 9   | BHARTIYA SANSKRITI & RASTRIYA GAURAV (Qualifying) |          |            |    | 50           |             |
|   |   |          |            |    | <b>Total</b> | <b>900</b>  |
| <b>IV Semester</b>                        |   |          |            |    |              |             |
| 1   | Physics IV (A)                                    | 15       | 10         | 05 | 70           | 100         |
| 2   | Physics IV (B)                                    | 15       | 10         | 05 | 70           | 100         |
| 3   | Statistics IV (A)                                 | 15       | 10         | 05 | 70           | 100         |
| 4   | Statistics IV (B)                                 | 15       | 10         | 05 | 70           | 100         |
| 5   | Maths IV (A)                                      | 30       | 10         | 10 | 100          | 150         |
| 6   | Maths IV (B)                                      | 30       | 10         | 10 | 100          | 150         |
| 7   | Physics Practical IV                              | 15       | 10         | 05 | 70           | 100         |
| 8   | Statistics Practical IV                           | 15       | 10         | 05 | 70           | 100         |
| 9   | Religion & Culture (Qualifying)                   |          |            |    | 50           |             |
|   |   |          |            |    | <b>Total</b> | <b>900</b>  |
| <b>Total (III Semester + IV Semester)</b> |   |          |            |    |              | <b>1800</b> |

### Third Year

|                    |                                  | Internal |            |    | ESE  | Total       |
|--------------------|----------------------------------|----------|------------|----|--|-------------|
|                    |                                  | CT       | Attendance | TA |  |             |
| <b>V Semester</b>  |                                  |          |            |    |  |             |
| 1                  | Physics V (A)                    | 15       | 10         | 05 | 70   | 100         |
| 2                  | Physics V (B)                    | 15       | 10         | 05 | 70   | 100         |
| 3                  | Statistics V (A)                 | 15       | 10         | 05 | 70   | 100         |
| 4                  | Statistics V (B)                 | 15       | 10         | 05 | 70   | 100         |
| 5                  | Maths V (A)                      | 30       | 10         | 10 | 100  | 150         |
| 6                  | Maths V (B)                      | 30       | 10         | 10 | 100  | 150         |
| 7                  | Physics Practical V              | 15       | 10         | 05 | 70   | 100         |
| 8                  | Statistics Practical V           | 15       | 10         | 05 | 70   | 100         |
| 9                  | Comp. Fundamentals (Qualifying)  |          |            |    | 50   |             |
|                    |                                  |          |            |    | <b>Total</b>                                     | <b>900</b>  |
| <b>VI Semester</b> |                                  |          |            |    |  |             |
| 1                  | Physics VI (A)                   | 15       | 10         | 05 | 70   | 100         |
| 2                  | Physics VI (B)                   | 15       | 10         | 05 | 70   | 100         |
| 3                  | Statistics VI (A)                | 15       | 10         | 05 | 70   | 100         |
| 4                  | Statistics VI (B)                | 15       | 10         | 05 | 70   | 100         |
| 5                  | Maths VI (A)                     | 30       | 10         | 10 | 100  | 150         |
| 6                  | Maths VI (B)                     | 30       | 10         | 10 | 100  | 150         |
| 7                  | Physics Practical VI             | 15       | 10         | 05 | 70   | 100         |
| 8                  | Statistics Practical VI          | 15       | 10         | 05 | 70   | 100         |
| 9                  | Prof. Communication (Foundation) | 15       | 10         | 05 | 70   | 100         |
|                    |                                  |          |            |    | <b>Total</b>                                     | <b>1000</b> |
|                    |                                  |          |            |    | <b>Total (V Semester + VI Semester)</b>          | <b>1900</b> |
|                    |                                  |          |            |    | <b>Previous Total (I Year + II Year)</b>         | <b>3700</b> |
|                    |                                  |          |            |    | <b>Grand Total (I Year + II Year + III Year)</b> | <b>5600</b> |

**\*Qualifying paper may be cleared in any semester.**

**ORDINANCE NO.- V (69A)**

**BACHELOR OF SCIENCE  
(HONS.) [B.SC. (HONS.)] COURSE**



# **Ordinance No.- V (69 A)**

## **Ordinance relating to Bachelor of Science (Hons.) [B.Sc. (Hons.)] course**

### **Chapter-1**

#### **General**

17. This ordinance may be called 'Ordinance Relating to Bachelor of Science (Hons.) course.
18. It shall come into force with immediate effect.
19. This ordinance shall apply to all programmes leading to B.Sc. (Hons.) course

### **Chapter-2**

#### **Eligibility for Admission**

20. An applicant who has passed Intermediate Examination of U.P. Board or an equivalent examination from any other recognized board/University with Physics and Chemistry as compulsory subjects along with Mathematics/Computer Science/Biology as an optional subject will be eligible for admission in the first year of the B.Sc. course.
21. The admission shall be based on the merit of entrance examination and marks of Qualifying examination (Intermediate or equivalent) the candidate should have obtained 45 % marks (40% for SC/ST ) or more in the aforementioned three subjects and not less than 40 % marks (35% for SC/ST) in individual subject.

### **Chapter-3**

#### **Teaching course**

22. The B.Sc. (Hons.) course shall be of three years duration, divided into six semesters.
23. The B.Sc. (Hons.) course is available in following streams:
  - d. B.Sc. (Hons.). (Physics)
  - e. B.Sc. (Hons.). (Chemistry)
  - f. B.Sc. (Hons.). (Mathematics)
  - g. B.Sc. (Hons.). (Botany)
  - h. B.Sc. (Hons.). (Zoology)
24. The study and evaluation schemes of the B.Sc. (Hons.) courses are enclosed as an **Annexure-I, II, III, IV and V** respectively.
25. The Academic calendar shall be as follows

I<sup>st</sup>, III<sup>rd</sup>, and V<sup>th</sup> semester : 1<sup>st</sup> August to 30<sup>th</sup> November,

**Exam.** : 1<sup>st</sup> to 15<sup>th</sup> Dec.

II<sup>nd</sup>, IV<sup>th</sup>, and VI<sup>th</sup> semesters : 1<sup>st</sup> January to 30<sup>th</sup> April,

**Exam.** : 1<sup>st</sup> to 15<sup>th</sup> May

## Chapter-4

### Attendance

26. The students are expected to attend all the classes and should not have less than 75% attendance in theory as well as in practical classes where held, to become eligible to appear for the university examination. Shortfall in attendance can, however be condoned in deserving cases to the extent of 10% by the Principal. If the short fall is more than 10% but not more than 15% the Principal may recommend deserving cases to the vice chancellor for condonation the order of the Hon'ble Vice- Chancellor in this regard shall be final.

## Chapter-5

### Examination

27. The performance of a student in a year shall be evaluated through continuous class assignment and annual examination. The continuous assessment shall be based on class tests, assignments Viva – Voce and attendance. The marks for continuous assessment (Sessional marks ) shall be awarded at the end of the semester. The annual examination shall comprise written papers, practicals, project work, reports or a combination there of.
28. The distribution of marks for sessional, annual theory papers, practical and seminar, projects, industrial training shall be as indicated in Study and Evaluation Scheme.
29. The marks obtained in a subject shall consist of marks awarded in the annual theory paper, practical examination and sessional marks.
30. **A:- Internal assessment (IA)** carrying 30 % of total marks. Internal marks of theory subjects, practicals and projects shall be awarded as per the breakup of sessional marks given below.

#### **(a) Theory Subject**

- (i) Class tests which will comprise two mid-term test of equal weightage      70 % of IA marks
- (ii) Teachers Assessment based on attendance, assignments etc.                      30 % of IA marks

#### **(b) Practical**

- (i) Two midterm Viva-Voce test of equal weightage                                      70 % of IA marks.
- (ii) Teachers Assessment based on attendance, lab records etc.                      30 % of IA marks

- (c) Make up test may be held for those students who fail to appear in any of the midterm tests for genuine unavoidable reasons, provided prior permission was taken from the Principal/Dean.

- (d) A maximum of 5 marks shall be awarded [Clause 15 A{a(ii)} & 15 A{b(ii)}] for attending classes regularly as per the following norms:

|   |   |    |
|---|---|----|
| 95 % or more attendance                   | - | 5- |
| Marks                                     |   |    |
| 90 % or more but less than 95% attendance | - | 4- |
| Marks                                     |   |    |

|  |   |    |
|--|---|----|
| 85 % or more but less than 90% attendance<br>Marks | - | 3- |
| 80 % or more but less than 85% attendance<br>Marks | - | 2- |
| 75 % or more but less than 80% attendance<br>Marks | - | 1- |

**B:- University Examination** carrying 70% of total marks.

31. The entire course has to be completed within a maximum of six yrs. from the date of original admission in the course.

### **Chapter-6**

#### **Paper setting, Evaluation & Results**

16. The work of setting the End semester examination papers, conduct of the End semester and Annual examinations, Evaluation and declaration of results shall be as per the laid down Examination policies / latest University Notifications.

### **Chapter – 7**

#### **Power to Modify**

17. In the event of any emergent situation, if any deviation is considered necessary, the Vice Chancellor is authorised to modify the Ordinance. Subject to subsequent ratification by the Executive Council.

# SWAMI VIVEKANAND SUBHARTI UNIVERSITY

## BSC (HON'S) BOTANY: Evaluation Scheme and Syllabus

### I Year, I Semester

| S. No. | Subject Name                      | Sessional Examination |    |            |       | ESE | Subject Total |
|--------|-----------------------------------|-----------------------|----|------------|-------|-----|---------------|
|        |                                   | CT                    | TA | Attendance | Total |     |               |
| 1.     | Phycology, Lichens and Bryology   | 15                    | 05 | 10         | 30    | 70  | 100           |
| 2.     | Genetics and Plant Breeding       | 15                    | 05 | 10         | 30    | 70  | 100           |
| 3.     | Chemistry I                       | 15                    | 05 | 10         | 30    | 70  | 100           |
| 4.     | Animal Systematic and Taxonomy    | 15                    | 05 | 10         | 30    | 70  | 100           |
| 5.     | Practical Botany                  | 15                    | 05 | 10         | 30    | 70  | 100           |
| 6.     | Practical Zoology                 | 15                    | 05 | 10         | 30    | 70  | 100           |
| 7.     | Practical Chemistry               | 15                    | 05 | 10         | 30    | 70  | 100           |
| 8.     | Environmental Science(Qualifying) |                       |    |            |       | 50  |               |
| 9.     | <b>Total</b>                      |                       |    |            |       |     | <b>700</b>    |

### I Year, II Semester

| S. No. | Subject Name                               | Sessional Examination |    |            |       | ESE | Subject Total |
|--------|--|-----------------------|----|------------|-------|-----|---------------|
|        |  | CT                    | TA | Attendance | Total |     |               |
| 1.     | Pteridophyta, Gymnosperms and Palaeobotany | 15                    | 05 | 10         | 30    | 70  | 100           |
| 2.     | Microbiology                               | 15                    | 05 | 10         | 30    | 70  | 100           |
| 3.     | Chemistry II                               | 15                    | 05 | 10         | 30    | 70  | 100           |
| 4.     | Diversity of Nonchordates                  | 15                    | 05 | 10         | 30    | 70  | 100           |
| 5.     | Practical Botany                           | 15                    | 05 | 10         | 30    | 70  | 100           |
| 6.     | Practical Zoology                          | 15                    | 05 | 10         | 30    | 70  | 100           |
| 7.     | Practical Chemistry                        | 15                    | 05 | 10         | 30    | 70  | 100           |
| 8.     | English (Foundation Course)                | 15                    | 05 | 10         | 30    | 70  | 100           |
|        | <b>Total</b>                               |                       |    |            |       |     | <b>800</b>    |
|        | <b>Total (Sem I+II)</b>                    |                       |    |            |       |     | <b>1500</b>   |

**BSC (HON'S) BOTANY: Evaluation Scheme and Syllabus**

**II Year, III Semester**

| S. No. | Subject Name                                       | Sessional Examination |    |            |       | ESE | Subject Total |
|--------|--|-----------------------|----|------------|-------|-----|---------------|
|        |  | CT                    | TA | Attendance | Total |     |               |
| 1.     | Taxonomy of Angiosperms                            | 15                    | 05 | 10         | 30    | 70  | 100           |
| 2.     | Plant Ecology                                      | 15                    | 05 | 10         | 30    | 70  | 100           |
| 3.     | Chemistry III                                      | 15                    | 05 | 10         | 30    | 70  | 100           |
| 4.     | Diversity of protochordates and lower chordates    | 15                    | 05 | 10         | 30    | 70  | 100           |
| 5.     | Practical Botany                                   | 15                    | 05 | 10         | 30    | 70  | 100           |
| 6.     | Practical Zoology                                  | 15                    | 05 | 10         | 30    | 70  | 100           |
| 7.     | Practical Chemistry                                | 15                    | 05 | 10         | 30    | 70  | 100           |
| 8.     | Bhartiya Sanskriti & Rashtriya Gaurav (Qualifying) |                       |    |            |       | 50  |               |
|        | <b>Total</b>                                       |                       |    |            |       |     | <b>700</b>    |

**II Year, IV Semester**

| S. No. | Subject Name                      | Sessional Examination |    |            |       | ESE | Subject Total |
|--------|-----------------------------------|-----------------------|----|------------|-------|-----|---------------|
|        |                                   | CT                    | TA | Attendance | Total |     |               |
| 1.     | Plant Resource Utilization        | 15                    | 05 | 10         | 30    | 70  | 100           |
| 2.     | Plant Anatomy and Embryology      | 15                    | 05 | 10         | 30    | 70  | 100           |
| 3.     | Chemistry IV                      | 15                    | 05 | 10         | 30    | 70  | 100           |
| 4.     | Diversity of higher Chordates     | 15                    | 05 | 10         | 30    | 70  | 100           |
| 5.     | Practical Botany                  | 15                    | 05 | 10         | 30    | 70  | 100           |
| 6.     | Practical Zoology                 | 15                    | 05 | 10         | 30    | 70  | 100           |
| 7.     | Practical Chemistry               | 15                    | 05 | 10         | 30    | 70  | 100           |
| 8.     | Computer Fundamental (Qualifying) |                       |    |            |       | 50  |               |
|        | <b>Total</b>                      |                       |    |            |       |     | <b>700</b>    |
|        | <b>Total (Sem III+IV)</b>         |                       |    |            |       |     | <b>1400</b>   |

## BSC (HON'S) BOTANY: Evaluation Scheme and Syllabus

### III Year, V Semester

| S. No. | Subject Name               | Sessional Examination |    |            |       | ESE | Subject Total |
|--------|----------------------------|-----------------------|----|------------|-------|-----|---------------|
|        |                            | CT                    | TA | Attendance | Total |     |               |
| 1.     | Cell Biology               | 15                    | 05 | 10         | 30    | 70  | 100           |
| 2.     | Plant biotechnology        | 15                    | 05 | 10         | 30    | 70  | 100           |
| 3.     | Plant Physiology           | 15                    | 05 | 10         | 30    | 70  | 100           |
| 4.     | Plant Tissue Culture       | 15                    | 05 | 10         | 30    | 70  | 100           |
| 5.     | Environmental Microbiology | 15                    | 05 | 10         | 30    | 70  | 100           |
| 6.     | Practical Botany- I        | 15                    | 05 | 10         | 30    | 70  | 100           |
| 7.     | Practical Botany- II       | 15                    | 05 | 10         | 30    | 70  | 100           |
|        | <b>Total</b>               |                       |    |            |       |     | <b>700</b>    |

### III Year, VI Semester

| S. No. | Subject Name                                   | Sessional Examination |    |            |       | ESE | Subject Total |
|--------|--|-----------------------|----|------------|-------|-----|---------------|
|        |  | CT                    | TA | Attendance | Total |     |               |
| 1.     | Molecular Biology                              | 15                    | 05 | 10         | 30    | 70  | 100           |
| 2.     | Plant Pathology                                | 15                    | 05 | 10         | 30    | 70  | 100           |
| 3.     | Biostatistics and Bioinformatics               | 15                    | 05 | 10         | 30    | 70  | 100           |
| 4.     | Biochemistry                                   | 15                    | 05 | 10         | 30    | 70  | 100           |
| 5.     | Food Microbiology                              | 15                    | 05 | 10         | 30    | 70  | 100           |
| 6.     | Practical Botany IV                            | 15                    | 05 | 10         | 30    | 70  | 100           |
| 7.     | Practical Botany V                             | 15                    | 05 | 10         | 30    | 70  | 100           |
|        | <b>Total</b>                                   |                       |    |            |       |     | <b>700</b>    |
|        | <b>Total (V+IV)</b>                            |                       |    |            |       |     | <b>1400</b>   |
|        | <b>Grand Total<br/>(Sem. I+II+III+IV+V+VI)</b> |                       |    |            |       |     | <b>4300</b>   |

**Evaluation Scheme**  
**Bachelor of Science (Hon's) Zoology**

**I Year, I Semester**

| S. No.     | Subject Name                          | Evaluation Scheme |    |   |       |     | Subject Total |
|------------|---------------------------------------|-------------------|----|---|-------|-----|---------------|
|            |                                       | Sessional         |    |   |       | ESE |               |
|            |                                       | CT                | TA |   | Total |     |               |
| Attendance | Assignment                            |                   |    |   |       |     |               |
| 10.        | Animal Systematics and Taxonomy       | 15                | 10 | 5 | 30    | 70  | 100           |
| 11.        | Cell biology                          | 15                | 10 | 5 | 30    | 70  | 100           |
| 12.        | Chemistry I                           | 15                | 10 | 5 | 30    | 70  | 100           |
| 13.        | Phycology, Lichens and Bryology       | 15                | 10 | 5 | 30    | 70  | 100           |
| 14.        | Practical Zoology                     | 15                | 10 | 5 | 30    | 70  | 100           |
| 15.        | Practical Botany                      | 15                | 10 | 5 | 30    | 70  | 100           |
| 16.        | Practical Chemistry                   | 15                | 10 | 5 | 30    | 70  | 100           |
| 17.        | Environmental Science<br>(Qualifying) |                   |    |   |       |     | 50            |
|            | <b>Total</b>                          |                   |    |   |       |     | <b>700</b>    |

**I Year, II Semester**

| S. No.     | Subject Name                            | Evaluation Scheme |    |   |       |     | Subject Total |
|------------|---|-------------------|----|---|-------|-----|---------------|
|            |   | Sessional         |    |   |       | ESE |               |
|            |   | CT                | TA |   | Total |     |               |
| Attendance | Assignment                              |                   |    |   |       |     |               |
| 9.         | Diversity of Non chordates              | 15                | 10 | 5 | 30    | 70  | 100           |
| 10.        | Genetics Genomics and Bioinformatics    | 15                | 10 | 5 | 30    | 70  | 100           |
| 11.        | Chemistry II                            | 15                | 10 | 5 | 30    | 70  | 100           |
| 12.        | Pteridophyta, Gymnosperms & Paleobotany | 15                | 10 | 5 | 30    | 70  | 100           |
| 13.        | Practical Zoology                       | 15                | 10 | 5 | 30    | 70  | 100           |
| 14.        | Practical Botany                        | 15                | 10 | 5 | 30    | 70  | 100           |
| 15.        | Practical Chemistry                     | 15                | 10 | 5 | 30    | 70  | 100           |
| 16.        | English (Foundation)                    | 15                | 10 | 5 | 30    | 70  | 100           |
|            | <b>Total</b>                            |                   |    |   |       |     | <b>800</b>    |

**Evaluation Scheme**  
**Bachelor of Science (Hon's) Zoology**

**II Year, III Semester**

| S. No.     | Subject Name                                     | Evaluation Scheme |    |   |       |     | Subject Total |
|------------|--|-------------------|----|---|-------|-----|---------------|
|            |  | Sessional         |    |   |       | ESE |               |
|            |  | CT                | TA |   | Total |     |               |
| Attendance | Assignment                                       |                   |    |   |       |     |               |
| 9.         | Diversity of Proto chordates and lower chordates | 15                | 10 | 5 | 30    | 70  | 100           |
| 10.        | Biochemistry                                     | 15                | 10 | 5 | 30    | 70  | 100           |
| 11.        | Chemistry III                                    | 15                | 10 | 5 | 30    | 70  | 100           |
| 12.        | Taxonomy of Angiosperms                          | 15                | 10 | 5 | 30    | 70  | 100           |
| 13.        | Practical Zoology                                | 15                | 10 | 5 | 30    | 70  | 100           |
| 14.        | Practical Botany                                 | 15                | 10 | 5 | 30    | 70  | 100           |
| 15.        | Practical Chemistry                              | 15                | 10 | 5 | 30    | 70  | 100           |
| 16.        | Religion and Culture<br>(Qualifying)             |                   |    |   |       | 50  |               |
|            | <b>Total</b>                                     |                   |    |   |       |     | <b>700</b>    |

**II Year, IV Semester**

| S. No.     | Subject Name                          | Evaluation Scheme |    |   |       |     | Subject Total |
|------------|---------------------------------------|-------------------|----|---|-------|-----|---------------|
|            |                                       | Sessional         |    |   |       | ESE |               |
|            |                                       | CT                | TA |   | Total |     |               |
| Attendance | Assignment                            |                   |    |   |       |     |               |
| 9.         | Diversity of Higher Chordates         | 15                | 10 | 5 | 30    | 70  | 100           |
| 10.        | Mammalian physiology I                | 15                | 10 | 5 | 30    | 70  | 100           |
| 11.        | Chemistry IV                          | 15                | 10 | 5 | 30    | 70  | 100           |
| 12.        | Plant resources Utilization           | 15                | 10 | 5 | 30    | 70  | 100           |
| 13.        | Practical Zoology                     | 15                | 10 | 5 | 30    | 70  | 100           |
| 14.        | Practical Botany                      | 15                | 10 | 5 | 30    | 70  | 100           |
| 15.        | Practical Chemistry                   | 15                | 10 | 5 | 30    | 70  | 100           |
| 16.        | Computer Fundamentals<br>(Qualifying) |                   |    |   |       | 50  |               |
|            | <b>Total</b>                          |                   |    |   |       |     | <b>700</b>    |



**Evaluation Scheme**  
**Bachelor of Science (Hon's) Zoology**

**III Year, V Semester**

| S. No.    | Subject Name            | Evaluation Scheme |            |   |    |    | ESE        | Subject Total |
|-----------|-------------------------|-------------------|------------|---|----|----|------------|---------------|
|           |                         | Sessional         |            |   |    | TA |            |               |
|           |                         | CT                | TA         |   | TA |    |            |               |
|           |                         | Attendance        | Attendance |   |    |    |            |               |
| <b>8.</b> | Mammalian physiology II | 15                | 10         | 5 | 30 | 70 | 100        |               |
| <b>9.</b> | Evolutionary Biology    | 15                | 10         | 5 | 30 | 70 | 100        |               |
| <b>10</b> | Immunology, Genomics    | 15                | 10         | 5 | 30 | 70 | 100        |               |
| <b>11</b> | Molecular Biology       | 15                | 10         | 5 | 30 | 70 | 100        |               |
| <b>12</b> | Practical-I             | 15                | 10         | 5 | 30 | 70 | 100        |               |
| <b>13</b> | Practical-II            | 15                | 10         | 5 | 30 | 70 | 100        |               |
|           | <b>Total</b>            |                   |            |   |    |    | <b>600</b> |               |

**III Year, VI Semester**

| S. No.     | Subject Name                  | Evaluation Scheme |            |   |       |       | ESE        | Subject Total |
|------------|-------------------------------|-------------------|------------|---|-------|-------|------------|---------------|
|            |                               | Sessional         |            |   |       | Total |            |               |
|            |                               | CT                | TA         |   | Total |       |            |               |
|            |                               | Attendance        | Assignment |   |       |       |            |               |
| <b>8.</b>  | Animal Biotechnology          | 15                | 10         | 5 | 30    | 70    | 100        |               |
| <b>9.</b>  | Applied Zoology               | 15                | 10         | 5 | 30    | 70    | 100        |               |
| <b>10.</b> | Biotechniques & Biostatistics | 15                | 10         | 5 | 30    | 70    | 100        |               |
| <b>11.</b> | Environmental Biology         | 15                | 10         | 5 | 30    | 70    | 100        |               |
| <b>12.</b> | Practical –I                  | 15                | 10         | 5 | 30    | 70    | 100        |               |
| <b>13.</b> | Practical -II                 | 15                | 10         | 5 | 30    | 70    | 100        |               |
|            | <b>Total</b>                  |                   |            |   |       |       | <b>600</b> |               |

**Study and Evaluation Scheme  
B.Sc. (Hons.) in Chemistry**

**First Year**

| S. No.             | Name of Papers                              | Internal |            |    | ESE                                     | Total       |
|--------------------|---|----------|------------|----|---|-------------|
|                    |   | CT       | Attendance | TA |   |             |
| <b>I Semester</b>  |   |          |            |    |   |             |
| 1                  | Physics I                                   | 15       | 10         | 05 | 70                                      | 100         |
| 2                  | Chemistry I                                 | 15       | 10         | 05 | 70                                      | 100         |
| 3                  | Mathematics I(A)                            | 15       | 10         | 05 | 70                                      | 100         |
| 4                  | Mathematics I(B)                            | 15       | 10         | 05 | 70                                      | 100         |
| 5                  | Physics Practical I                         | 15       | 10         | 05 | 70                                      | 100         |
| 6                  | Chemistry Practical I                       | 15       | 10         | 05 | 70                                      | 100         |
| 7                  | Environmental Science ( <b>Qualifying</b> ) |          |            |    | 50                                      |             |
|                    |   |          |            |    | <b>Total</b>                            | <b>600</b>  |
| <b>II Semester</b> |   |          |            |    |   |             |
| 1                  | Physics II                                  | 15       | 10         | 05 | 70                                      | 100         |
| 2                  | Chemistry II                                | 15       | 10         | 05 | 70                                      | 100         |
| 3                  | Mathematics II(A)                           | 15       | 10         | 05 | 70                                      | 100         |
| 4                  | Mathematics II(B)                           | 15       | 10         | 05 | 70                                      | 100         |
| 5                  | Physics Practical II                        | 15       | 10         | 05 | 70                                      | 100         |
| 6                  | Chemistry Practical II                      | 15       | 10         | 05 | 70                                      | 100         |
| 7                  | English ( <b>Foundation</b> )               | 15       | 10         | 05 | 70                                      | 100         |
|                    |   |          |            |    | <b>Total</b>                            | <b>700</b>  |
|                    |   |          |            |    | <b>Total (I Semester + II Semester)</b> | <b>1300</b> |

**Second Year**

| S. No.              | Name of Papers                              | Internal |            |    | ESE                                       | Total       |
|---------------------|---|----------|------------|----|---|-------------|
|                     |   | CT       | Attendance | TA |   |             |
| <b>III Semester</b> |   |          |            |    |   |             |
| 1                   | Physics III                                 | 15       | 10         | 05 | 70  | 100         |
| 2                   | Chemistry III                               | 15       | 10         | 05 | 70  | 100         |
| 3                   | Mathematics III(A)                          | 15       | 10         | 05 | 70  | 100         |
| 4                   | Mathematics III(B)                          | 15       | 10         | 05 | 70  | 100         |
| 5                   | Physics Practical III                       | 15       | 10         | 05 | 70  | 100         |
| 6                   | Chemistry Practical III                     | 15       | 10         | 05 | 70  | 100         |
| 7                   | Statistics I ( <b>Foundation</b> )          | 15       | 10         | 05 | 70  | 100         |
|                     |   |          |            |    | <b>Total</b>                              | <b>700</b>  |
| <b>IV Semester</b>  |   |          |            |    |   |             |
| 1                   | Physics IV                                  | 15       | 10         | 05 | 70  | 100         |
| 2                   | Chemistry IV                                | 15       | 10         | 05 | 70  | 100         |
| 3                   | Mathematics IV(A)                           | 15       | 10         | 05 | 70  | 100         |
| 4                   | Mathematics IV(B)                           | 15       | 10         | 05 | 70  | 100         |
| 5                   | Physics Practical IV                        | 15       | 10         | 05 | 70  | 100         |
| 6                   | Chemistry Practical IV                      | 15       | 10         | 05 | 70  | 100         |
| 7                   | Computer Fundamentals ( <b>Foundation</b> ) | 15       | 10         | 05 | 70  | 100         |
|                     |   |          |            |    | <b>Total</b>                              | <b>700</b>  |
|                     |   |          |            |    | <b>Total (III Semester + IV Semester)</b> | <b>1400</b> |

**Study and Evaluation Scheme  
B.Sc. (Hons.) in Chemistry**

**Third Year**

| S. No.   | Name of Papers         | Internal |            |    | ESE | Total       |
|--|------------------------|----------|------------|----|-----|-------------|
|  |                        | CT       | Attendance | TA |     |             |
| <b>V Semester</b>                                |                        |          |            |    |     |             |
| 1  | Chemistry V(A)         | 15       | 10         | 05 | 70  | 100         |
| 2  | Chemistry V(B)         | 15       | 10         | 05 | 70  | 100         |
| 3  | Chemistry V(C)         | 15       | 10         | 05 | 70  | 100         |
| 4  | Chemistry V(D)         | 15       | 10         | 05 | 70  | 100         |
| 5  | Chemistry Practical V  | 15       | 10         | 05 | 70  | 100         |
| <b>Total</b>                                     |                        |          |            |    |     | <b>500</b>  |
| <b>VI Semester</b>                               |                        |          |            |    |     |             |
| 1  | Chemistry VI(A)        | 15       | 10         | 05 | 70  | 100         |
| 2  | Chemistry VI(B)        | 15       | 10         | 05 | 70  | 100         |
| 3  | Chemistry VI(C)        | 15       | 10         | 05 | 70  | 100         |
| 4  | Chemistry VI(D)        | 15       | 10         | 05 | 70  | 100         |
| 5  | Chemistry Practical VI | 15       | 10         | 05 | 70  | 100         |
| <b>Total</b>                                     |                        |          |            |    |     | <b>500</b>  |
| <b>Total (V Semester + VI Semester)</b>          |                        |          |            |    |     | <b>1000</b> |
| <b>Previous Total (I Year + II Year)</b>         |                        |          |            |    |     | <b>2700</b> |
| <b>Grand Total (I Year + II Year + III Year)</b> |                        |          |            |    |     | <b>3700</b> |

**Study and Evaluation Scheme  
B.Sc. (Hons.) in Mathematics**

**First Year**

| S. No.             | Name of Papers                              | Internal |            |    | ESE                                     | Total       |
|--------------------|---|----------|------------|----|---|-------------|
|                    |   | CT       | Attendance | TA |   |             |
| <b>I Semester</b>  |   |          |            |    |   |             |
| 1                  | Physics I                                   | 15       | 10         | 05 | 70                                      | 100         |
| 2                  | Chemistry I                                 | 15       | 10         | 05 | 70                                      | 100         |
| 3                  | Mathematics I(A)                            | 15       | 10         | 05 | 70                                      | 100         |
| 4                  | Mathematics I(B)                            | 15       | 10         | 05 | 70                                      | 100         |
| 5                  | Physics Practical I                         | 15       | 10         | 05 | 70                                      | 100         |
| 6                  | Chemistry Practical I                       | 15       | 10         | 05 | 70                                      | 100         |
| 7                  | Environmental Science ( <b>Qualifying</b> ) |          |            |    | 50                                      |             |
|                    |   |          |            |    | <b>Total</b>                            | <b>600</b>  |
| <b>II Semester</b> |   |          |            |    |   |             |
| 1                  | Physics II                                  | 15       | 10         | 05 | 70                                      | 100         |
| 2                  | Chemistry II                                | 15       | 10         | 05 | 70                                      | 100         |
| 3                  | Mathematics II(A)                           | 15       | 10         | 05 | 70                                      | 100         |
| 4                  | Mathematics II(B)                           | 15       | 10         | 05 | 70                                      | 100         |
| 5                  | Physics Practical II                        | 15       | 10         | 05 | 70                                      | 100         |
| 6                  | Chemistry Practical II                      | 15       | 10         | 05 | 70                                      | 100         |
| 7                  | English ( <b>Foundation</b> )               | 15       | 10         | 05 | 70                                      | 100         |
|                    |   |          |            |    | <b>Total</b>                            | <b>700</b>  |
|                    |   |          |            |    | <b>Total (I Semester + II Semester)</b> | <b>1300</b> |

**Second Year**

| S. No.              | Name of Papers                              | Internal |            |    | ESE                                       | Total       |
|---------------------|---|----------|------------|----|---|-------------|
|                     |   | CT       | Attendance | TA |   |             |
| <b>III Semester</b> |   |          |            |    |   |             |
| 1                   | Physics III                                 | 15       | 10         | 05 | 70  | 100         |
| 2                   | Chemistry III                               | 15       | 10         | 05 | 70  | 100         |
| 3                   | Mathematics III(A)                          | 15       | 10         | 05 | 70  | 100         |
| 4                   | Mathematics III(B)                          | 15       | 10         | 05 | 70  | 100         |
| 5                   | Physics Practical III                       | 15       | 10         | 05 | 70  | 100         |
| 6                   | Chemistry Practical III                     | 15       | 10         | 05 | 70  | 100         |
| 7                   | Statistics I ( <b>Foundation</b> )          | 15       | 10         | 05 | 70  | 100         |
|                     |   |          |            |    | <b>Total</b>                              | <b>700</b>  |
| <b>IV Semester</b>  |   |          |            |    |   |             |
| 1                   | Physics IV                                  | 15       | 10         | 05 | 70  | 100         |
| 2                   | Chemistry IV                                | 15       | 10         | 05 | 70  | 100         |
| 3                   | Mathematics IV(A)                           | 15       | 10         | 05 | 70  | 100         |
| 4                   | Mathematics IV(B)                           | 15       | 10         | 05 | 70  | 100         |
| 5                   | Physics Practical IV                        | 15       | 10         | 05 | 70  | 100         |
| 6                   | Chemistry Practical IV                      | 15       | 10         | 05 | 70  | 100         |
| 7                   | Computer Fundamentals ( <b>Foundation</b> ) | 15       | 10         | 05 | 70  | 100         |
|                     |   |          |            |    | <b>Total</b>                              | <b>700</b>  |
|                     |   |          |            |    | <b>Total (III Semester + IV Semester)</b> | <b>1400</b> |

**Study and Evaluation Scheme  
B.Sc. (Hons.) in Mathematics**

**Third Year**

| S. No.             | Name of Papers                   | Internal |            |    | ESE  | Total       |
|--------------------|----------------------------------|----------|------------|----|--|-------------|
|                    |                                  | CT       | Attendance | TA |  |             |
| <b>V Semester</b>  |                                  |          |            |    |  |             |
| 1                  | Analysis I                       | 15       | 10         | 05 | 70   | 100         |
| 2                  | Abstract Algebra                 | 15       | 10         | 05 | 70   | 100         |
| 3                  | Programming in C                 | 15       | 10         | 05 | 70   | 100         |
| 4                  | Differential Geometry            | 15       | 10         | 05 | 70   | 100         |
| 5                  | Discrete Mathematics             | 15       | 10         | 05 | 70   | 100         |
| 6                  | Combinatorial Mathematics        | 15       | 10         | 05 | 70   | 100         |
| 7                  | Statistics II                    | 15       | 10         | 05 | 70   | 100         |
| 8                  | Computational Mathematics Lab-I  | 15       | 10         | 05 | 70   | 100         |
|                    |                                  |          |            |    | <b>Total</b>                                     | <b>800</b>  |
| <b>VI Semester</b> |                                  |          |            |    |  |             |
| 1                  | Analysis II                      | 15       | 10         | 05 | 70   | 100         |
| 2                  | Linear Algebra                   | 15       | 10         | 05 | 70   | 100         |
| 3                  | Numerical Analysis               | 15       | 10         | 05 | 70   | 100         |
| 4                  | Mechanics                        | 15       | 10         | 05 | 70   | 100         |
| 5                  | Operation Research               | 15       | 10         | 05 | 70   | 100         |
| 6                  | Number Theory                    | 15       | 10         | 05 | 70   | 100         |
| 7                  | Data Structures                  | 15       | 10         | 05 | 70   | 100         |
| 8                  | Computational Mathematics Lab-II | 15       | 10         | 05 | 70   | 100         |
|                    |                                  |          |            |    | <b>Total</b>                                     | <b>800</b>  |
|                    |                                  |          |            |    | <b>Total (V Semester + VI Semester)</b>          | <b>1600</b> |
|                    |                                  |          |            |    | <b>Previous Total (I Year + II Year)</b>         | <b>2700</b> |
|                    |                                  |          |            |    | <b>Grand Total (I Year + II Year + III Year)</b> | <b>4300</b> |

**Study and Evaluation Scheme  
B.Sc. (Hons.) in Physics**

**First Year**

| S. No.             | Name of Papers                              | Internal |            |    | ESE                                     | Total       |
|--------------------|---|----------|------------|----|---|-------------|
|                    |   | CT       | Attendance | TA |   |             |
| <b>I Semester</b>  |   |          |            |    |   |             |
| 1                  | Physics I                                   | 15       | 10         | 05 | 70                                      | 100         |
| 2                  | Chemistry I                                 | 15       | 10         | 05 | 70                                      | 100         |
| 3                  | Mathematics I(A)                            | 15       | 10         | 05 | 70                                      | 100         |
| 4                  | Mathematics I(B)                            | 15       | 10         | 05 | 70                                      | 100         |
| 5                  | Physics Practical I                         | 15       | 10         | 05 | 70                                      | 100         |
| 6                  | Chemistry Practical I                       | 15       | 10         | 05 | 70                                      | 100         |
| 7                  | Environmental Science ( <b>Qualifying</b> ) |          |            |    | 50                                      |             |
|                    |   |          |            |    | <b>Total</b>                            | <b>600</b>  |
| <b>II Semester</b> |   |          |            |    |   |             |
| 1                  | Physics II                                  | 15       | 10         | 05 | 70                                      | 100         |
| 2                  | Chemistry II                                | 15       | 10         | 05 | 70                                      | 100         |
| 3                  | Mathematics II(A)                           | 15       | 10         | 05 | 70                                      | 100         |
| 4                  | Mathematics II(B)                           | 15       | 10         | 05 | 70                                      | 100         |
| 5                  | Physics Practical II                        | 15       | 10         | 05 | 70                                      | 100         |
| 6                  | Chemistry Practical II                      | 15       | 10         | 05 | 70                                      | 100         |
| 7                  | English ( <b>Foundation</b> )               | 15       | 10         | 05 | 70                                      | 100         |
|                    |   |          |            |    | <b>Total</b>                            | <b>700</b>  |
|                    |   |          |            |    | <b>Total (I Semester + II Semester)</b> | <b>1300</b> |

**Second Year**

| S. No.              | Name of Papers                              | Internal |            |    | ESE                                       | Total       |
|---------------------|---|----------|------------|----|---|-------------|
|                     |   | CT       | Attendance | TA |   |             |
| <b>III Semester</b> |   |          |            |    |   |             |
| 1                   | Physics III                                 | 15       | 10         | 05 | 70  | 100         |
| 2                   | Chemistry III                               | 15       | 10         | 05 | 70  | 100         |
| 3                   | Mathematics III(A)                          | 15       | 10         | 05 | 70  | 100         |
| 4                   | Mathematics III(B)                          | 15       | 10         | 05 | 70  | 100         |
| 5                   | Physics Practical III                       | 15       | 10         | 05 | 70  | 100         |
| 6                   | Chemistry Practical III                     | 15       | 10         | 05 | 70  | 100         |
| 7                   | Statistics I ( <b>Foundation</b> )          | 15       | 10         | 05 | 70  | 100         |
|                     |   |          |            |    | <b>Total</b>                              | <b>700</b>  |
| <b>IV Semester</b>  |   |          |            |    |   |             |
| 1                   | Physics IV                                  | 15       | 10         | 05 | 70  | 100         |
| 2                   | Chemistry IV                                | 15       | 10         | 05 | 70  | 100         |
| 3                   | Mathematics IV(A)                           | 15       | 10         | 05 | 70  | 100         |
| 4                   | Mathematics IV(B)                           | 15       | 10         | 05 | 70  | 100         |
| 5                   | Physics Practical IV                        | 15       | 10         | 05 | 70  | 100         |
| 6                   | Chemistry Practical IV                      | 15       | 10         | 05 | 70  | 100         |
| 7                   | Computer Fundamentals ( <b>Foundation</b> ) | 15       | 10         | 05 | 70  | 100         |
|                     |   |          |            |    | <b>Total</b>                              | <b>700</b>  |
|                     |   |          |            |    | <b>Total (III Semester + IV Semester)</b> | <b>1400</b> |

**Study and Evaluation Scheme**  
**B.Sc. (Hons.) in Physics**

**Third Year**

| S. No.   | Name of Papers | Internal |            |    | ESE | Total       |
|--|----------------|----------|------------|----|-----|-------------|
|  |                | CT       | Attendance | TA |     |             |
| <b>V Semester</b>                                |                |          |            |    |     |             |
| 1  | Physics V(A)   | 15       | 10         | 05 | 70  | 100         |
| 2  | Physics V(B)   | 15       | 10         | 05 | 70  | 100         |
| 3  | Physics V(C)   | 15       | 10         | 05 | 70  | 100         |
| 4  | Physics V(D)   | 15       | 10         | 05 | 70  | 100         |
| 5  | Physics Lab V  | 15       | 10         | 05 | 70  | 100         |
| <b>Total</b>                                     |                |          |            |    |     | <b>500</b>  |
| <b>VI Semester</b>                               |                |          |            |    |     |             |
| 1  | Physics VI(A)  | 15       | 10         | 05 | 70  | 100         |
| 2  | Physics VI(B)  | 15       | 10         | 05 | 70  | 100         |
| 3  | Physics VI(C)  | 15       | 10         | 05 | 70  | 100         |
| 4  | Physics VI(D)  | 15       | 10         | 05 | 70  | 100         |
| 5  | Physics Lab VI | 15       | 10         | 05 | 70  | 100         |
| <b>Total</b>                                     |                |          |            |    |     | <b>500</b>  |
| <b>Total (V Semester + VI Semester)</b>          |                |          |            |    |     | <b>1000</b> |
| <b>Previous Total (I Year + II Year)</b>         |                |          |            |    |     | <b>2700</b> |
| <b>Grand Total (I Year + II Year + III Year)</b> |                |          |            |    |     | <b>3700</b> |

**ORDINANCE NO.- V (3A)**  
**BACHELOR OF COMPUTER**  
**APPLICATIONS (BCA) COURSE**



# Ordinance No. V (3A)

## Ordinances Relating to Bachelor of Computer Applications (BCA) Course

### **Chapter – 1**

#### **General**

1. This ordinance may be called the Ordinance Relating to “Bachelor of Computer Applications (B.C.A.) Course”
2. It shall come into force with immediate effect.
3. This supersedes the previous Ordinance relating to Bachelor of Computer Applications (B.C.A.) Course [V-(3A)].

### **Chapter – 2**

#### **Eligibility for Admission**

4. (i) For admission to B.C.A. course, an applicant should have passed the Intermediate Examination or an equivalent examination from a recognized Board / University with minimum 45% marks in aggregate.  
(ii) There shall be relaxation of 5% marks for SC/ST categories candidates.

### **Chapter – 3**

#### **Teaching Course**

5. The course will be of three years duration, spread over six semesters.

6. The academic calendar shall be as follows:

|   |      |  |
|---|------|--|
| 1 <sup>st</sup> , 3 <sup>rd</sup> & 5 <sup>th</sup> Semester: Session | –    | 1 <sup>st</sup> Aug. to 15 <sup>th</sup> Dec.    |
|   | Exam | – 16 <sup>th</sup> Dec. to 31 <sup>st</sup> Dec. |
|   |      |  |
| 2 <sup>nd</sup> , 4 <sup>th</sup> & 6 <sup>th</sup> Semester: Session | –    | 1 <sup>st</sup> Jan. to 31 <sup>st</sup> May     |
|   | Exam | – 1 <sup>st</sup> June to 15 <sup>th</sup> June  |

7. The course structure shall be as given below:

#### **First Semester**

|  |     |
|--|-----|
| Mathematics-I                            | 100 |
| Computer Fundamental & Office Automation | 100 |
| Programming principles and algorithms    | 100 |
| Professional communication               | 100 |
| Practical                                | 100 |

#### **Second Semester**

|   |     |
|---|-----|
| Mathematics-II                                    | 100 |
| Computer Oriented Finance & management Principles | 100 |
| ‘C’ Programming                                   | 100 |
| Data Base Management System                       | 100 |
| Practical   | 100 |

**Third Semester**

|                                       |     |
|---------------------------------------|-----|
| Data Structure & Programming with 'c' | 100 |
| Operating System                      | 100 |
| Programming in VISUAL BASIC           | 100 |
| Discrete Mathematics                  | 100 |
| Practical                             | 100 |

**Fourth Semester**

|  |     |
|--|-----|
| Computer Communication Networks            | 100 |
| Computer Graphics & Multimedia Application | 100 |
| Object Oriented Programming & C++          | 100 |
| Software Engineering                       | 100 |
| Practical                                  | 100 |

**Fifth Semester**

|  |     |
|--|-----|
| Information Systems: Analysis, Design & Implementation | 100 |
| Client server & advance computer applications          | 100 |
| Digital electronics & computer organization            | 100 |
| Java Programming and Dynamic Webpage Design            | 100 |
| Practical  | 100 |

**Sixth Semester**

|                                    |     |
|------------------------------------|-----|
| ERP system                         | 100 |
| .NET Framework and C#              | 100 |
| Practical                          | 100 |
| Viva – Voce (Project Report Based) | 200 |

8. There will be a compulsory qualifying paper “Environmental Studies” of 100 Marks in first semester. It is mandatory for each student to clear this paper but the marks obtained in this paper will not be added in the grand total.

**Chapter – 4**  
**Attendance**

9. The students are expected to attend all the classes and should not have less than 75 % attendance in theory as well as in practical classes, wherever held, to become eligible to appear for the university examination. Short fall in attendance can, however be condoned in deserving cases to the extent of 10% by the Principal. If the short fall is more than 10% but not more than 15%, the Principal may recommend deserving cases to the Vice Chancellor for condonation. The order of the Vice Chancellor in this regard shall be final.

## Chapter – 5

### Examination

10. The examination in each semester shall be conducted in two parts:

**C. Internal assessment** will be of **30 marks** as under:-

- e. Midterm written test / practical including in-between snap tests if any, shall carry **20 marks** independently in each subject.
- f. A maximum of **10 marks** in each subject shall be awarded for attending classes (theory / practical) as per the following norms:

|  |   |          |
|--|---|----------|
| 85% or more attendance                   | - | 10 Marks |
| 80% or more but less than 85% attendance | - | 9 Marks  |
| 75% or more but less than 80% attendance | - | 8 Marks  |
| 70% or more but less than 75% attendance | - | 7 Marks  |
| 65% or more but less than 70% attendance | - | 5 Marks  |
| 60% or more but less than 65% attendance | - | 3 Marks  |
| 51% or more but less than 60% attendance | - | 2 Marks  |
| 50% attendance                           | - | 1 Mark   |
| Less than 50% attendance                 | - | 0 Mark   |

**B. University Examination** carrying 70 marks.

11. The entire course has to be completed within a maximum of five years from the date of original admission in the course.

## Chapter–6

### Paper setting, Evaluation & Results

12. The work of setting the End semester examination papers, conduct of the End semester and Annual examinations, Evaluation and declaration of results shall be as per the laid down Examination policies / latest University Notifications.

## Chapter – 7

### Power to Modify

13. In the event of any emergent situation, if any deviation is considered necessary, the Vice Chancellor is authorised to modify the Ordinance. Subject to subsequent ratification by the Executive Council.

**ORDINANCE NO.- V (17A)**

**MASTER OF COMPUTER  
APPLICATIONS (MCA)**

## ORDINANCE NO. V (17A)

### ORDINANCE RELATING TO Master of Computer Applications (MCA)

#### Chapter – 1

##### (General)

1. This ordinance may be called the Ordinance Relating to “Master of Computer Applications (MCA) Course”
2. It shall come into force with immediate effect.
3. This supersedes the previous Ordinance relating to Master of Computer Applications (M.C.A.) Course [V-(17A)]

#### Chapter – 2

##### (Eligibility for Admission)

4. (i) For admission to M.C.A. course, an applicant should have passed the Graduation with minimum 50% marks in aggregate from a recognized board / University and should have any kind of Mathematics as one of the subjects at Graduation / 10+2 Level.  
(ii) There shall be relaxation of 5% marks for SC/ST categories candidates.

#### Chapter – 3

##### (Teaching Course)

5. The course will be of three years duration, spread over six semesters.
6. The academic calendar shall be as follows :

|   |             |   |   |
|---|-------------|---|---|
| 1 <sup>st</sup> , 3 <sup>rd</sup> and 5 <sup>th</sup> Semester: | Session     | – | 1 <sup>st</sup> August to 15 <sup>th</sup> Dec. |
|   | Examination | – | 16 <sup>th</sup> Dec. to 31 <sup>st</sup> Dec.  |
| 2 <sup>nd</sup> and 4 <sup>th</sup> Semester:                   | Session     | – | 1 <sup>st</sup> Jan. to 31 <sup>st</sup> May    |
|   | Examination | – | 1 <sup>st</sup> June to 15 <sup>th</sup> June   |
| Sixth Semester :  | Training    |   |   |
7. The course structure shall be as given below :

| Semester | Paper   | Max. Marks |
|----------|---|------------|
| First    | Professional Communication                        | 100        |
|          | Accounting & Financial Management                 | 100        |
|          | Computer Concepts and Programming in ‘C’          | 100        |
|          | Discrete Mathematics                              | 100        |
|          | Computer Organization                             | 100        |
|          | Computer Based Numerical & Statistical Techniques | 100        |
|          | Programming Lab                                   | 100        |
|          | Organization Lab                                  | 100        |
|          | Numerical Techniques Lab                          | 100        |
| Second   | Data & File Structure Using ‘C’                   | 100        |
|          | Principles of Management                          | 100        |

|        |   |     |
|--------|---|-----|
|        | UNIX & Shell Programming                              | 100 |
|        | System Analysis & Design                              | 100 |
|        | Computer Architecture & Microprocessor                | 100 |
|        | Combinatorics & Graph Theory                          | 100 |
|        | Data Structure Lab                                    | 100 |
|        | UNIX / LINUX Lab                                      | 100 |
|        | Microprocessor Lab                                    | 100 |
| Third  | Computer Networks                                     | 100 |
|        | Design & Analysis of Algorithm                        | 100 |
|        | Operating System                                      | 100 |
|        | Database Management System                            | 100 |
|        | Object Oriented Systems & C++                         | 100 |
|        | Operation Research                                    | 100 |
|        | DBMS Lab  | 100 |
|        | OOPS & C++ Lab  | 100 |
|        | Design & Analysis of Algorithms (DAA) Lab             | 100 |
| Fourth | Management Information System                         | 100 |
|        | Foundation of E-Commerce                              | 100 |
|        | Internet & Java Programming                           | 100 |
|        | Computer Graphics & Animation                         | 100 |
|        | Soft Computing Techniques                             | 100 |
|        | ELECTIVE SUBJECT                                      | 100 |
|        | MIS Lab   | 100 |
|        | Java Programming Lab                                  | 100 |
|        | Computer Graphics Lab                                 | 100 |
| Fifth  | Web Technology  | 100 |
|        | ELECTIVE SUBJECT                                      | 100 |
|        | .Net Framework & C#                                   | 100 |
|        | Software Engineering                                  | 100 |
|        | ELECTIVE SUBJECT                                      | 100 |
|        | Advance Operating System                              | 100 |
|        | Web Technology Lab                                    | 100 |
|        | .Net Framework & C# Lab                               | 100 |
|        | Software Engineering Lab                              | 100 |
| Sixth  | Practical Training                                    | 500 |
|        | <b><u>ELECTIVE</u></b>                                |     |
| (i)    | FOURTH SEMESTER (Choose any one from the following):- |     |
|        | Compiler Design                                       | 100 |
|        | Cryptography & Network Security                       | 100 |
|        | Data Compression                                      | 100 |
|        | Client Server Computing                               | 100 |
|        | Data Mining & Warehousing                             | 100 |
| (ii)   | FIFTH SEMESTER (Choose any one from the following):-  |     |
|        | Multimedia System                                     | 100 |
|        | Distributed Database system                           | 100 |
|        | ERP Systems   | 100 |
|        | Advanced Concepts in Database Systems                 | 100 |
| (iii)  | FIFTH SEMESTER (Choose any one from the following):-  |     |
|        | Advanced Computer Networks                            | 100 |
|        | Real Time System                                      | 100 |
|        | Mobile Computing                                      | 100 |
|        | Neural Network  | 100 |

8. **Practical Training:**

During the sixth semester, every student of MCA will undergo on-the-job practical training in any manufacturing, service or financial organization. During the course of training, the organization (where the student is undergoing training) will assign a project to the student. The student, after the completion of training will submit a report that will form part of sixth semester examination. The report (based on training and the project studied) prepared by the student will be known as Practical Training Project Report. The report will carry total of 500 marks.

**Chapter – 4**

**(Attendance)**

9. The students are expected to attend all the classes and should not have less than 75 % attendance in theory as well as in practical classes, wherever held, to become eligible to appear for the university examination. Short fall in attendance can, however be condoned in deserving cases to the extent of 10% by the Principal. If the short fall is more than 10% but not more than 15%, the Principal may recommend deserving cases to the Vice Chancellor for condonation. The order of the Vice Chancellor in this regard shall be final.

**Chapter – 5**

**(Examination)**

10. The examination in each semester shall be conducted in two parts:

**A. Internal assessment will be of 30 marks as under:-**

- g. Midterm written test / practical including in-between snap tests if any, shall carry **20 marks** independently in each subject.
- h. A maximum of **10 marks** in each subject shall be awarded for attending classes (theory / practical) as per the following norms:

|  |   |          |
|--|---|----------|
| 85% or more attendance                   | - | 10 Marks |
| 80% or more but less than 85% attendance | - | 9 Marks  |
| 75% or more but less than 80% attendance | - | 8 Marks  |
| 70% or more but less than 75% attendance | - | 7 Marks  |
| 65% or more but less than 70% attendance | - | 5 Marks  |
| 60% or more but less than 65% attendance | - | 3 Marks  |
| 51% or more but less than 60% attendance | - | 2 Marks  |
| 50% attendance                           | - | 1 Mark   |
| Less than 50% attendance                 | - | 0 Mark   |

**B. University Examination carrying 70 marks**

11. The entire course has to be completed within a maximum of six yrs. from the date of original admission in the course

## **Chapter-6**

### **Paper setting, Evaluation & Results**

12. The work of setting the End semester examination papers, conduct of the End semester and Annual examinations, Evaluation and declaration of results shall be as per the laid down Examination policies / latest University Notifications.

## **Chapter – 7**

### **Power to Modify**

13. In the event of any emergent situation, if any deviation is considered necessary, the Vice Chancellor is authorised to modify the ordinance. Subject to subsequent ratification by the Executive Council.



**ORDINANCE NO. V (19A)**

**POST GRADUATE DIPLOMA IN COMPUTER  
APPLICATIONS (PGDCA)**

**ORDINANCE NO. V (19A)**

**Ordinance relating to Post Graduate Diploma in Computer Applications (PGDCA)**

**Chapter – 1**

**(General)**

8. This ordinance may be called the Ordinance Relating to “Post Graduate Diploma in Computer Applications (PGDCA) Course”
9. It shall come into force with immediate effect.
10. This supersedes the previous Ordinance relating to Post Graduate Diploma in Computer Applications (PGDCA) Course [V-(19A)].

**Chapter – 2**

**(Eligibility for Admission)**

11. (i) For admission to PGDCA course, an applicant should have passed the Graduation from a recognized board / university with minimum 50% marks in aggregate.  
(ii) There shall be relaxation of 5% marks for SC/ST categories candidates.

**Chapter – 3**

**(Teaching Course)**

12. The course will be of one year duration, divided into two semesters.
13. The academic calendar shall be as follows :  
1<sup>st</sup> Semester: Session – 1<sup>st</sup> August to 15<sup>th</sup> Dec.  
Examination – 16<sup>th</sup> Dec. to 31<sup>st</sup> Dec.  
2<sup>nd</sup> Semester: Session – 1<sup>st</sup> Jan. to 31<sup>st</sup> May  
Examination – 1<sup>st</sup> June to 15<sup>th</sup> June

The course structure shall be as given below:

| <b>Semester</b> | <b>Paper</b>                             | <b>Max. Marks</b> |
|-----------------|--|-------------------|
| First           | Computer Fundamentals & Programming in C | 100               |
|                 | Operating System                         | 100               |
|                 | Internet & E - commerce                  | 100               |
|                 | Data Base Management System              | 100               |
|                 | PC Packages                              | 100               |
|                 | Practical                                | 100               |
| Second          | System Analysis & Design                 | 100               |
|                 | GUI Programming in Visual Basic          | 100               |
|                 | Data Structures through C                | 100               |
|                 | Practical                                | 100               |
|                 | Viva – Voce (Project Report Based)       | 100               |

## Chapter – 4

### (Attendance)

14. The students are expected to attend all the classes and should not have less than 75 % attendance in theory as well as in practical classes, wherever held, to become eligible to appear for the university examination. Short fall in attendance can, however be condoned in deserving cases to the extent of 10% by the Principal. If the short fall is more than 10% but not more than 15%, the Principal may recommend deserving cases to the Vice Chancellor for condonation. The order of the Vice Chancellor in this regard shall be final.

## Chapter – 5

### (Examination)

15. The examination in each semester shall be conducted in two parts:

**D. Internal assessment** will be of **30 marks** as under:-

- i. Midterm written test / practical including in-between snap tests if any, shall carry **20 marks** independently in each subject.
- j. A maximum of **10 marks** in each subject shall be awarded for attending classes (theory / practical) as per the following norms:

|  |   |          |
|--|---|----------|
| 85% or more attendance                   | - | 10 Marks |
| 80% or more but less than 85% attendance | - | 9 Marks  |
| 75% or more but less than 80% attendance | - | 8 Marks  |
| 70% or more but less than 75% attendance | - | 7 Marks  |
| 65% or more but less than 70% attendance | - | 5 Marks  |
| 60% or more but less than 65% attendance | - | 3 Marks  |
| 51% or more but less than 60% attendance | - | 2 Marks  |
| 50% attendance                           | - | 1 Mark   |
| Less than 50% attendance                 | - | 0 Mark   |

**B. University Examination** carrying 70 marks

16. The entire course has to be completed within a maximum of three years from the date of original admission in the course.

## Chapter–6

### Paper setting, Evaluation & Results

10. The work of setting the End semester examination papers, conduct of the End semester and Annual examinations, Evaluation and declaration of results shall be as per the laid down Examination policies / latest University Notifications.

## **Chapter – 7**

### **Power to Modify**

11. In the event of any emergent situation, if any deviation is considered necessary, the Vice Chancellor is authorised to modify the Ordinance. Subject to subsequent ratification by the Executive Council.

**ORDINANCE NO.- V (72A)**  
**MASTER OF SCIENCE (M.SC.) COURSES**

## **Ordinance No.- V (72A)**

### **Ordinance relating to Master of Science (M.Sc.) courses**

#### **Chapter-1**

##### **General**

32. This ordinance may be called 'Ordinance Relating to Master of Science (M.Sc.) courses.
33. It shall come into force with immediate effect.
34. This ordinance shall apply to all programmes leading to M.Sc. courses.

#### **Chapter-2**

##### **Eligibility for Admission**

35. An applicant who has passed Graduation Examination from any recognized University/Institute with relevant subject will be eligible for admission in the first year of the M.Sc. courses.
36. The admission shall be based on the merit of Entrance examination and marks of Qualifying examination (Graduation or equivalent). An applicant must hold the degree from a recognized University with minimum 45 % marks (40% for SC/ST).

#### **Chapter-3**

##### **Teaching course**

37. The M.Sc. courses shall be of two years duration, divided into four semesters.
38. The M.Sc. course is available in following streams:
  - i. M.Sc. (Physics)
  - j. M.Sc. (Chemistry)
  - k. M.Sc. (Mathematics)
  - l. M.Sc. (Botany)
  - m. M.Sc. (Zoology)
  - n. M.Sc. (Biotechnology)
39. The study and evaluation schemes of the M.Sc. Physics, Chemistry, Mathematics, Botany, Zoology and Biotechnology courses are enclosed as an Annexure-I, II, III, IV, V and VI respectively.

40. The Academic calendar shall be as follows

|  |              |  |
|--|--------------|--|
| <u>I<sup>st</sup> and III<sup>rd</sup> semester</u>  | Session      | : 1 <sup>st</sup> August to 30 <sup>th</sup> November, |
|  | <b>Exam.</b> | : 1 <sup>st</sup> to 15 <sup>th</sup> Dec.             |
| <u>II<sup>nd</sup> and IV<sup>th</sup> semesters</u> | Session      | : 1 <sup>st</sup> January to 30 <sup>th</sup> April,   |
|  | <b>Exam.</b> | : 1 <sup>st</sup> to 15 <sup>th</sup> May              |

#### **Chapter-4**

##### **Attendance**

41. The students are expected to attend all the classes and should not have less than 75% attendance in theory as well as in practical classes where held, to become eligible to appear for the university examination. Shortfall in attendance can, however be condoned in deserving cases to the extent of 10% by the Principal. If the short fall is more than 10%

but not more than 15% the Principal may recommend deserving cases to the vice chancellor for condonation the order of the Hon'ble Vice- Chancellor in this regard shall be final.

### **Chapter-5** **Examination**

42. The distribution of marks for sessional, End semester theory papers, practical and seminar, projects, industrial training shall be as indicated in Study and Evaluation Scheme.

43. The examination in each semester shall be conducted in two parts:-

**A:- Internal assessment (IA)** carrying 30 % of total marks. Internal marks of theory subjects, practicals and projects shall be awarded as per the breakup of sessional marks given below.

#### **(b) Theory Subject**

- |   |            |
|---|------------|
| (iii) Midterm written test including in-between snap tests if any marks | 70 % of IA |
| (iv) Teachers Assessment based on attendance, assignments etc. marks    | 30 % of IA |

#### **(c) Practical**

- |  |            |
|--|------------|
| (iii) Midterm Viva-voce test including in-between snap tests if any marks. | 70 % of IA |
| (iv) Teachers Assessment based on attendance, lab records etc. marks       | 30 % of IA |
- (e) Make up test may be held for those students who fail to appear in any of the midterm tests for genuine unavoidable reasons, provided prior permission was taken from the Principal/Dean.
- (f) A maximum of 10 marks shall be awarded [Clause 15 A{a(ii)} & 15 A{b(ii)}] for attending classes (theory / practical) as per the following norms:

|  |   |          |
|--|---|----------|
| 85% or more attendance                   | - | 10 Marks |
| 80% or more but less than 85% attendance | - | 9 Marks  |
| 75% or more but less than 80% attendance | - | 8 Marks  |
| 70% or more but less than 75% attendance | - | 7 Marks  |
| 65% or more but less than 70% attendance | - | 5 Marks  |
| 60% or more but less than 65% attendance | - | 3 Marks  |
| 51% or more but less than 60% attendance | - | 2 Marks  |
| 50% attendance                           | - | 1 Mark   |
| Less than 50% attendance                 | - | 0 Mark   |

**B:- University Examination** carrying 70% of total marks.

44. The entire course has to be completed within a maximum of four (04) yrs. from the date of original admission in the course.

### **Chapter-6** **Paper setting, Evaluation & Results**

14. The work of setting the End semester examination papers, conduct of the End semester and Annual examinations, Evaluation and declaration of results shall be as per the laid down Examination policies / latest University Notifications.

**Chapter – 7**  
**Power to Modify**

15. In the event of any emergent situation, if any deviation is considered necessary, the Vice Chancellor is authorised to modify the Ordinance. Subject to subsequent ratification by the Executive Council.



# Annexure - 1

## Study and Evaluation Scheme M.Sc. (Physics)

### I<sup>st</sup> YEAR

#### First Year

|   |   | Internal |            |    | ESE          | Total       |
|---|---|----------|------------|----|--------------|-------------|
|   |   | CT       | Attendance | TA |              |             |
| <b>I Semester</b>                       |   |          |            |    |              |             |
| 1                                       | <b>MATHEMATICAL PHYSICS</b>                 | 15       | 10         | 05 | 70           | 100         |
| 2                                       | <b>CLASSICAL MECHANICS</b>                  | 15       | 10         | 05 | 70           | 100         |
| 3                                       | <b>QUANTUM MECHANICS I</b>                  | 15       | 10         | 05 | 70           | 100         |
| 4                                       | <b>ELECTRONIC DEVICES</b>                   | 15       | 10         | 05 | 70           | 100         |
| 5                                       | <b>PHYSICS PRACTICAL</b>                    | 60       |            |    | 140          | 200         |
|   |   |          |            |    | <b>Total</b> | <b>600</b>  |
| <b>II Semester</b>                      |   |          |            |    |              |             |
| 1                                       | <b>QUANTUM MECHANICS II</b>                 | 15       | 10         | 05 | 70           | 100         |
| 2                                       | <b>STATISTICAL MECHANICS</b>                | 15       | 10         | 05 | 70           | 100         |
| 3                                       | <b>ATOMIC &amp; MOLECULAR PHYSICS</b>       | 15       | 10         | 05 | 70           | 100         |
| 4                                       | <b>ELECTRODYNAMICS &amp; PLASMA PHYSICS</b> | 15       | 10         | 05 | 70           | 100         |
| 5                                       | <b>PHYSICS PRACTICAL</b>                    | 60       |            |    | 140          | 200         |
|   |   |          |            |    | <b>Total</b> | <b>600</b>  |
| <b>Total (I Semester + II Semester)</b> |   |          |            |    |              | <b>1200</b> |

**Second Year**

|   |  | Internal |            |    | ESE          | Total       |
|---|--|----------|------------|----|--------------|-------------|
|   |  | CT       | Attendance | TA |              |             |
| <b>III Semester</b>                       |  |          |            |    |              |             |
| 1   | <b>CONDENSED MATTER PHYSICS</b>                    | 15       | 10         | 05 | 70           | 100         |
| 2   | <b>SPECIAL PAPER I<br/>ELECTRONICS</b>             | 15       | 10         | 05 | 70           | 100         |
| 3   | <b>SPECIAL PAPER II<br/>ELECTRONICS</b>            | 15       | 10         | 05 | 70           | 100         |
| 4   | <b>NUCLEAR AND PARTICLE<br/>PHYSICS</b>            | 15       | 10         | 05 | 70           | 100         |
| 5   | <b>PHYSICS PRACTICAL</b>                           | 60       |            |    | 140          | 200         |
|   |  |          |            |    | <b>Total</b> | <b>600</b>  |
| <b>IV Semester</b>                        |  |          |            |    |              |             |
| 1   | <b>PHYSICS OF NANOMATERIALS</b>                    | 15       | 10         | 05 | 70           | 100         |
| 2   | <b>SPECIAL PAPER III<br/>ELECTRONICS</b>           | 15       | 10         | 05 | 70           | 100         |
| 3   | <b>SPECIAL PAPER IV<br/>ELECTRONICS</b>            | 15       | 10         | 05 | 70           | 100         |
| 4   | <b>COMPUTATIONAL METHODS<br/>&amp; PROGRAMMING</b> | 15       | 10         | 05 | 70           | 100         |
| 5   | <b>PHYSICS PRACTICAL</b>                           | 60       |            |    | 140          | 200         |
|   |  |          |            |    | <b>Total</b> | <b>600</b>  |
| <b>Total (III Semester + IV Semester)</b> |  |          |            |    |              | <b>1200</b> |
| <b>Previous Total</b>                     |  |          |            |    |              | <b>1200</b> |
| <b>G. Total (I Year + II Year)</b>        |  |          |            |    |              | <b>2400</b> |

**Study and Evaluation Scheme  
M.Sc. (Mathematics)**

**I YEAR**

**First Year**

|                    |                         | Internal |            |    | ESE                                     | Total       |
|--------------------|-------------------------|----------|------------|----|---|-------------|
|                    |                         | CT       | Attendance | TA |   |             |
| <b>I Semester</b>  |                         |          |            |    |   |             |
| 1                  | Algebra                 | 15       | 10         | 05 | 70                                      | 100         |
| 2                  | Real Analysis           | 15       | 10         | 05 | 70                                      | 100         |
| 3                  | Differential Equations  | 15       | 10         | 05 | 70                                      | 100         |
| 4                  | Mathematical Methods    | 15       | 10         | 05 | 70                                      | 100         |
| 5                  | Viva Voice/Lab I        | 60       |            |    | 140                                     | 200         |
|                    |                         |          |            |    | <b>Total</b>                            | <b>600</b>  |
| <b>II Semester</b> |                         |          |            |    |   |             |
| 1                  | Metric Spaces           | 15       | 10         | 05 | 70                                      | 100         |
| 2                  | Complex Analysis        | 15       | 10         | 05 | 70                                      | 100         |
| 3                  | Mathematical Statistics | 15       | 10         | 05 | 70                                      | 100         |
| 4                  | Operations Research     | 15       | 10         | 05 | 70                                      | 100         |
| 5                  | Viva Voice              | 60       |            |    | 140                                     | 200         |
|                    |                         |          |            |    | <b>Total</b>                            | <b>600</b>  |
|                    |                         |          |            |    | <b>Total (I Semester + II Semester)</b> | <b>1200</b> |

## Second Year

|                     |  | Internal                            |            |    | ESE                                       | Total       |     |
|---------------------|--|-------------------------------------|------------|----|---|-------------|-----|
|                     |  | CT                                  | Attendance | TA |   |             |     |
| <b>III Semester</b> |  |                                     |            |    |   |             |     |
| 1                   | Topology   | 15                                  | 10         | 05 | 70  | 100         |     |
| 2                   | Measure and Integration                              | 15                                  | 10         | 05 | 70  | 100         |     |
| 3                   | Numerical Analysis                                   | 15                                  | 10         | 05 | 70  | 100         |     |
| 4                   | <b>Elective-I</b> ( Any one out of the three papers) |                                     | 15         | 10 | 05  | 70          | 100 |
|                     | 1  | Programming in C And Data Structure |            |    |   |             |     |
|                     | 2  | Advanced Discrete Mathematics       |            |    |   |             |     |
|                     | 3  | Differential Geometry               |            |    |   |             |     |
| 5                   | Viva Voice   | 60                                  |            |    | 140                                       | 200         |     |
|                     |  |                                     |            |    | <b>Total</b>                              | <b>600</b>  |     |
| <b>IV Semester</b>  |  |                                     |            |    |   |             |     |
| 1                   | Functional Analysis                                  | 15                                  | 10         | 05 | 70  | 100         |     |
| 2                   | Number theory  | 15                                  | 10         | 05 | 70  | 100         |     |
| 3                   | Fuzzy Sets and its Application                       | 15                                  | 10         | 05 | 70  | 100         |     |
| 4                   | <b>Elective-II</b> (Any one out of the three papers) |                                     | 15         | 10 | 05  | 70          | 100 |
|                     | 1  | Mathematical Cryptography           |            |    |   |             |     |
|                     | 2  | Mathematical Programming            |            |    |   |             |     |
|                     | 3  | Fluid Dynamics                      |            |    |   |             |     |
| 5                   | Viva Voice   | 60                                  |            |    | 140                                       | 200         |     |
|                     |  |                                     |            |    | <b>Total</b>                              | <b>600</b>  |     |
|                     |  |                                     |            |    | <b>Total (III Semester + IV Semester)</b> | <b>1200</b> |     |
|                     |  |                                     |            |    | <b>Previous Total</b>                     | <b>1200</b> |     |
|                     |  |                                     |            |    | <b>G. Total (I Year + II Year)</b>        | <b>2400</b> |     |

**Master of Science in Biotechnology  
(M.Sc. Biotechnology)**

**FIRST YEAR**

**FIRST SEMESTER**

**THEORY PAPER**

| S. No. | Subject Name                          | Evaluation Scheme |    |       |     | Subject Total |
|--------|---------------------------------------|-------------------|----|-------|-----|---------------|
|        |                                       | Sessional         |    |       | ESE |               |
|        |                                       | CT                | TA | Total |     |               |
| 1.     | PRINCIPLES OF GENETICS                | 20                | 10 | 30    | 70  | 100           |
| 2.     | CELL AND MOLECULAR BIOLOGY            | 20                | 10 | 30    | 70  | 100           |
| 3.     | BIOSTATISTICS AND BIOINFORMATICS      | 20                | 10 | 30    | 70  | 100           |
| 4.     | TOOLS AND TECHNIQUES OF BIOTECHNOLOGY | 20                | 10 | 30    | 70  | 100           |

**PRACTICAL PAPER**

| S. No. | Subject Name  | Evaluation Scheme |    |       |     | Subject Total |
|--------|---|-------------------|----|-------|-----|---------------|
|        |   | Sessional         |    |       | ESE |               |
|        |   | CT                | TA | Total |     |               |
| 1.     | PRACTICAL I<br>(based on MBT 101,<br>MBT 102, MBT 103<br>AND MBT 104) | 20                | 10 | 30    | 70  | 100           |

**FIRST YEAR****SECOND SEMESTER****THEORY PAPER**

| S. No. | Subject Name   | Evaluation Scheme |    |       |     | Subject Total |
|--------|--|-------------------|----|-------|-----|---------------|
|        |  | Sessional         |    |       | ESE |               |
|        |  | CT                | TA | Total |     |               |
| 1.     | <b>FUNDAMENTALS OF BIOCHEMISTRY &amp; BIOPHYSICS</b> | 20                | 10 | 30    | 70  | 100           |
| 2.     | <b>GENETIC RESOURCES AND IPR</b>                     | 20                | 10 | 30    | 70  | 100           |
| 3.     | <b>PLANT BIOTECHNOLOGY</b>                           | 20                | 10 | 30    | 70  | 100           |
| 4.     | <b>GENETIC ENGINEERING</b>                           | 20                | 10 | 30    | 70  | 100           |

**PRACTICAL PAPER**

| S. No. | Subject Name   | Evaluation Scheme |    |       |     | Subject Total |
|--------|--|-------------------|----|-------|-----|---------------|
|        |  | Sessional         |    |       | ESE |               |
|        |  | CT                | TA | Total |     |               |
| 1.     | <b>PRACTICAL II (based on MBT 201, MBT 202, MBT 203 AND MBT 204)</b> | 20                | 10 | 30    | 70  | 100           |

**SECOND YEAR**

**THIRD SEMESTER**

**THEORY PAPER**

| S. No. | Subject Name   | Evaluation Scheme |    |       |     | Subject Total |
|--------|--|-------------------|----|-------|-----|---------------|
|        |  | Sessional         |    |       | ESE |               |
|        |  | CT                | TA | Total |     |               |
| 1.     | <b>MICROBIAL, INDUSTRIAL AND ENVIRONMENTAL BIOTECHNOLOGY</b> | 20                | 10 | 30    | 70  | 100           |
| 2.     | <b>ANIMAL BIOTECHNOLOGY</b>                                  | 20                | 10 | 30    | 70  | 100           |
| 3.     | <b>IMMUNOLOGY</b>  | 20                | 10 | 30    | 70  | 100           |
| 4.     | <b>GENOMICS &amp; PROTEOMICS</b>                             | 20                | 10 | 30    | 70  | 100           |

**PRACTICAL PAPER**

| S. No. | Subject Name  | Evaluation Scheme |    |       |     | Subject Total |
|--------|---|-------------------|----|-------|-----|---------------|
|        |   | Sessional         |    |       | ESE |               |
|        |   | CT                | TA | Total |     |               |
| 1.     | <b>PRACTICAL III (based on MBT 301, MBT 302, MBT 303 AND MBT 304)</b> | 20                | 10 | 30    | 70  | 100           |

**SECOND YEAR**

**FOURTH SEMESTER**

| S. No. | Subject Name   | Evaluation Scheme |                             |       |
|--------|----------------|-------------------|-----------------------------|-------|
|        |                | Sessional         |                             |       |
|        |                | Dissertation      | Viva-Voice and Presentation | Total |
| 1.     | <b>PROJECT</b> | 400               | 100                         | 500   |





## II Year, III Semester

| S. No.     | Subject Code        | Evaluation Scheme |    |   |       |     | Subject Total |
|------------|---------------------|-------------------|----|---|-------|-----|---------------|
|            |                     | Sessional         |    |   |       | ESE |               |
|            |                     | CT                | TA |   | Total |     |               |
| Attendance | Assignment          |                   |    |   |       |     |               |
| 1          | Chordata            | 15                | 10 | 5 | 30    | 70  | 100           |
| 2          | Development Biology | 15                | 10 | 5 | 30    | 70  | 100           |
| 3          | Environment Biology | 15                | 10 | 5 | 30    | 70  | 100           |
| 4          | Animal Behaviour    | 15                | 10 | 5 | 30    | 70  | 100           |
| 5          | Practicals          | 15                | 10 | 5 | 30    | 70  | 100           |
|            | <b>Total</b>        |                   |    |   |       |     | <b>500</b>    |

## II Year, IV Semester

| S. No.     | Subject Name   | Evaluation Scheme |    |   |       |     | Subject Total |
|------------|--|-------------------|----|---|-------|-----|---------------|
|            |  | Sessional         |    |   |       | ESE |               |
|            |  | CT                | TA |   | Total |     |               |
| Attendance | Assignment   |                   |    |   |       |     |               |
| 1          | Biology of Parasite -I                               | 15                | 10 | 5 | 30    | 70  | 100           |
| 2          | Biology of Parasite -II                              | 15                | 10 | 5 | 30    | 70  | 100           |
| 3          | Physiology, Biochemistry and Immunology of Parasites | 15                | 10 | 5 | 30    | 70  | 100           |
| 5.         | Dissertation   |                   |    |   |       |     | 200           |
|            | <b>Total</b>   |                   |    |   |       |     | <b>500</b>    |

### Note:

1. The topic of dissertation will be allotted to the student in the III semester by the HOD.
2. The dissertation shall carry 200 marks including viva-voce of 50 marks.
3. The dissertation shall be examined by two examiners (one Internal from the department and one external). The examiners will be appointed by the Vice-Chancellor on the recommendation of DEAN, Faculty of Science.
4. The dissertation shall be submitted within the month of March or when notify by the HOD.

**Study and Evaluation Scheme  
M.Sc. (CHEMISTRY)**

**I<sup>st</sup> YEAR**

**I<sup>st</sup> SEMESTER**

| S. No. | Subject Name          | Evaluation Scheme |           |            |            | Subject Total |
|--------|-----------------------|-------------------|-----------|------------|------------|---------------|
|        |                       | Sessional         |           |            | ESE        |               |
|        |                       | CT                | TA        | Total      |            |               |
| 1.     | INORGANIC CHEMISTRY I | 20                | 10        | 30         | 70         | 100           |
| 2.     | ORGANIC CHEMISTRY I   | 20                | 10        | 30         | 70         | 100           |
| 3.     | PHYSICAL CHEMISTRY I  | 20                | 10        | 30         | 70         | 100           |
| 4.     | BIOLOGY FOR CHEMIST*  | 10                | 05        | 15         | 35         | 50            |
| 5.     | COMPUTER FOR CHEMIST  | 20                | 10        | 30         | 70         | 100           |
| 6.     | Lab I                 | 40                | 20        | 60         | 140        | 200           |
|        | <b>TOTAL MARKS</b>    | <b>120</b>        | <b>60</b> | <b>180</b> | <b>420</b> | <b>600</b>    |

\*In First First semester, there will be a compulsory qualifying paper “BIOLOGY FOR CHEMIST” 50 marks. It is mandatory for each student to clear this paper in any one semester during completion of courses but the marks obtained in this paper will not be added in the total.

**I<sup>st</sup> YEAR**

**II<sup>nd</sup> SEMESTER**

| S. No. | Subject Name                | Evaluation Scheme |           |            |            | Subject Total |
|--------|-----------------------------|-------------------|-----------|------------|------------|---------------|
|        |                             | Sessional         |           |            | ESE        |               |
|        |                             | CT                | TA        | Total      |            |               |
| 1.     | INORGANIC CHEMISTRY II      | 20                | 10        | 30         | 70         | 100           |
| 2.     | ORGANIC CHEMISTRY II        | 20                | 10        | 30         | 70         | 100           |
| 3.     | PHYSICAL CHEMISTRY II       | 20                | 10        | 30         | 70         | 100           |
| 4.     | GROUP THEORY & SPECTROSCOPY | 20                | 10        | 30         | 70         | 100           |
| 5.     | Lab II                      | 40                | 20        | 60         | 140        | 200           |
|        | <b>TOTAL MARKS</b>          | <b>120</b>        | <b>60</b> | <b>180</b> | <b>420</b> | <b>600</b>    |

**II<sup>nd</sup> YEAR****III<sup>rd</sup> SEMESTER**

| S. No. | Subject Name         | Evaluation Scheme |           |            |            | Subject Total |
|--------|----------------------|-------------------|-----------|------------|------------|---------------|
|        |                      | Sessional         |           |            | ESE        |               |
|        |                      | CT                | TA        | Total      |            |               |
| 1.     | PHOTOCHEMISTRY       | 20                | 10        | 30         | 70         | 100           |
| 2.     | SPECTROSCOPY         | 20                | 10        | 30         | 70         | 100           |
| 3.     | ANALYTICAL CHEMISTRY | 20                | 10        | 30         | 70         | 100           |
| 4.     | ELECTIVE I           | 20                | 10        | 30         | 70         | 100           |
| 5.     | Lab III              | 40                | 20        | 60         | 140        | 200           |
|        | <b>TOTAL MARKS</b>   | <b>120</b>        | <b>60</b> | <b>180</b> | <b>420</b> | <b>600</b>    |

**Elective:** Any one from the following:-

1. Bioinorganic Chemistry
2. Bioorganic Chemistry
3. Biophysical Chemistry

**II<sup>nd</sup> YEAR****IV<sup>th</sup> SEMESTER**

| S. No. | Subject Name            | Evaluation Scheme |           |            |            | Subject Total |
|--------|-------------------------|-------------------|-----------|------------|------------|---------------|
|        |                         | Sessional         |           |            | ESE        |               |
|        |                         | CT                | TA        | Total      |            |               |
| 1.     | ENVIRONMENTAL CHEMISTRY | 20                | 10        | 30         | 70         | 100           |
| 2.     | ELECTIVE II             | 20                | 10        | 30         | 70         | 100           |
| 3.     | ELECTIVE III            | 20                | 10        | 30         | 70         | 100           |
| 4.     | ELECTIVE IV             | 20                | 10        | 30         | 70         | 100           |
| 5.     | Lab IV                  | 40                | 20        | 60         | 140        | 200           |
|        | <b>TOTAL MARKS</b>      | <b>120</b>        | <b>60</b> | <b>180</b> | <b>420</b> | <b>600</b>    |

**Electives:** Any three from the following:-

1. Organic Synthesis
2. Polymers
3. Chemistry of Natural Products
4. Medicinal Chemistry
5. Heterocyclic compounds