LSE-05

ASSIGNMENT BOOKLET
Bachelor's Degree Programme (B.Sc.)

Physiology

Valid from 1st January 2026 to 31st December, 2026

It is compulsory to submit the Assignment before filling in the Term-End Examination Form.

Please Note

- **You can take electives '56 to 64' credits from a minimum of TWO and a maximum of FOUR science disciplines, viz. Physics, Chemistry, Life Sciences and Mathematics.**
- **You can opt for elective courses worth a MINIMUM OF 8 CREDITS and a MAXIMUM OF 48 CREDITS from any of these four disciplines.**
- **At least 25% of the total credits that you register for in the elective courses from Life Sciences, Chemistry and Physics disciplines must be from the laboratory courses. For example, if you opt for a total of 64 credits of electives in these 3 disciplines, at least 16 credits 'out of those 64 credits' should be from lab courses.**
- **You cannot appear in the Term-End Examination of any course without registering for the course. Otherwise, your result will not be declared and the 'responsibility will be yours'.**

School of Sciences
Indira Gandhi National Open University
Maidan Garhi, New Delhi-110068

(2026)

Dear Student,

We hope you are familiar with the system of evaluation to be followed for the Bachelor's Degree Programme. At this stage you may probably like to re-read the section on assignments for Elective Courses in the Programme Guide that we sent you after your enrolment. A weightage of 30 per cent, as you are aware, has been earmarked for continuous evaluation which would consist of **one tutor-marked assignment (TMA)** for this course.

Instructions for Formatting Your Assignments

Before attempting the assignment please read the following instructions carefully.

1) On top of the first page of your TMA answer sheet, please write the details exactly in the following format:

ENROLMENT NO.: ……

NAME : ……

ADDRESS ……...

……...

COURSE CODE : …….

COURSE TITLE : …….

ASSIGNMENT NO.: ……..…

STUDY CENTRE : ……..….. DATE: ……...

PLEASE FOLLOW THE ABOVE FORMAT STRICTLY TO FACILITATE EVALUATION AND TO AVOID DELAY.

2) Use only foolscap size writing paper (but not of very thin variety) for writing your answers.

3) Leave 4 cm margin on the left, top and bottom of your answer sheet.

4) Your answers should be precise.

5) While solving problems, clearly indicate the question number along with the part being solved. Be precise.

6) **This assignment will remain valid for one year from January 1, 2026 to December 31, 2026**. However, you are advised to submit it within **12 weeks** of receiving this booklet to accomplish its purpose as a teaching-tool. Answer sheets received after the due date shall not be accepted.

7) **You cannot fill the exam form for this course until you have submitted this assignment**.

We strongly feel that you should retain a copy of your assignment response to avoid any unforeseen situation and append, if possible, a photocopy of this booklet with your response.

We wish you good luck!

ASSIGNMENT
(Tutor Marked Assignment)

Course Code: LSE-05
Assignment Code: LSE-05/TMA/2026
Maximum Marks: 100

Instructions: Attempt all questions. Write your answers for part I and II in separate answer books. Draw neat and abeled diagrams wherever necessary. Be precise in your answer. Apart from the content, your answer will be graded for using your own language, clarity and logical presentation.

Part I-(Animal Physiology)

1. Define and describe an O_2 dissociation curve. What are the effects of high temperature and carbon dioxide (CO_2) concentration on this curve? (5)

2. Describe the structure of a nervous system synapse. What happens when an action potential reaches the synapse? Explain with suitable diagrams. (5)

3. Differentiate between: (10)
   i) Estrous and Menstrual Cycles
   ii) Peptide and Steroid Hormones
   iii) Ciliary and Flagellar Movements
   iv) Guanotelism and Uricotelism

4. Write short notes on: (5×5=25)
   i) Neuroendocrine link between hypothalamus and pituitary glands in humans
   ii) Physiological thermal regulation in poikilotherms
   iii) Molluscan kidney
   iv) Lymphatic system
   v) Role of calcium in regulation of muscle contraction

5. Where does the absorption of carbohydrates, lipids and amino acids take place in the vertebrate body? Describe the method of glucose absorption. (5)

Part II (Plant Physiology)

6. a) Describe the ways how plant adapt to biological stresses. (5)
   b) Describe the role of proton pump in active transport of protons across plasma-membrane. (5)

7. a) Describe the mechanism of stomatal opening. (5)
   b) Name the major macronutrients required for plant growth. Describe the role of any *two* of them. (5)

8. Write short notes on the following: (2 ½×4 = 10)
   i) Emerson Enhancement effect
   ii) Munch pressure flow model
   iii) Phytochrome
   iv) Photorespiration

9. a) Describe the applications of plant hormones. (5)

b) Define senescence. How is it regulated in plants? (5)

10. Describe the various steps involved in Calvin cycle with the help of a diagram. (10)