

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

Physiology

Valid from 1st January 2023 to 31st December, 2023

**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**

(2023)

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, 2023 to December 31, 2023.** 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/2023
Maximum Marks: 100

Instructions: Attempt all questions. Write your answers for part I and II in separate answer books. Draw neat and labeled 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. What are the end-products of food that can be absorbed by the body? Explain how absorption of fats differs from absorption of proteins and-sugars. (5)
2. What are the advantages of a closed circulatory system? In your opinion which is superior-closed or open circulatory system? (5)
3. What is the role of following in osmoregulation? (10)
 - (i) The cuticle of insect
 - (ii) Temporal countercurrent system
 - (iii) Spiracular muscle
4. Discuss the role of haemoglobin in transfer of oxygen and compare it with the transport of carbon dioxide in blood. (10)
5. Explain at least two ways by which homeotherms produce heat and lose heat in order to regulate their body temperature. (5)
6. Explain the action of insect hormones in controlling metamorphosis. (5)
7. Explain briefly the role of loop of Henle in the formation of urine. (5)
8. Make a diagram to summarise the major events between the arrival of action potential in an axonal terminal and the generation of another in the axon hillock of a receiving neuron. (5)

Part II-(Plant Physiology)

9. 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)
10. Write short notes on the following: (10)
 - i) Emerson Enhancement effect
 - ii) Munch pressure flow model
 - iii) Phytochrome
 - iv) Photorespiration
11. a) Describe the applications of plant hormones. (5)
b) Define senescence. How is it regulated in plants? (5)
12. Describe various steps involved in the Calvin cycle with the help of a diagram. (10)

13. a) Differentiate between the following: (6)
- i) Long day and short day plants
 - ii) Photosystem I and Photosystem II
 - iii) Capillary water and hygroscopic water
- b) Describe in brief the plant responses to water stress. (4)