

ASSIGNMENT BOOKLET**Bachelor's Degree Programme in Science (B.Sc.)****DEVELOPMENTAL BIOLOGY****Valid from 1st January 2025 to 31st December 2025****It is compulsory to submit the Assignment before filling 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**

(2025)

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, 2025 to December 31, 2025.** 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-06
Assignment Code: LSE-06/TMA/2025
Max. Marks: 100

Part-I (Plant Developmental Biology)

1. Make neat and labelled diagrams of the following: (5×4=20)
 - i) Types of ovules
 - ii) Apomixis types
 - iii) Cross-section of fruit of *Pyrus malus*
 - iv) Storied and non-storied cambium
2. Write short notes on the following: (5×4=20)
 - i) Morphological changes accompanying floral induction,
 - ii) Production of haploids by tissue culture,
 - iii) Abscission of leaves and fruits, and
 - iv) Variants of endosperm.
3. Write short notes on the following : (2½×4=10)
 - i) Morphological changes accompanying floral induction
 - ii) Production of haploids by tissue culture
 - iii) Abscission of leaves and fruits
 - iv) Variants of endosperm

Part-II (Animal Developmental Biology)

4. a) Describe the process of metamorphosis in urodeles. (5)
b) Describe the various stages in the development of cancer. (5)
5. a) Make a chart to classify the eggs in animals on the basis of: (5)
 - i) amount of yolk
 - ii) location of yolk
b) Describe the basic process of oogenesis in animals with the help of suitable diagrams. (5)
6. Giving examples of each, explain the difference between: (10)
 - a) Totipotency and pluripotency
 - b) Allometric and isometric growth
 - c) Morpholaxis and epimrphosis
 - d) Holoblastic and meroblastic cleavage
7. a) With the help of diagrams explain the steps of nuclear transplantation experiment in frog eggs. (5)
b) Describe the *three* basic types of regeneration seen in animals. Give *one* example for each type. (5)

8. Describe the following briefly: (10)
- i) Role of morphogenetic field in development of eye
 - ii) Role of prothoracic gland in insect metamorphosis
 - iii) Fate of CFU-M, L stem cells in mammals
 - iv) Test for genomic equivalence