

BZYCT-133

ASSIGNMENT BOOKLET

Bachelor's Degree Programme

BSCM

**(COMPARATIVE ANATOMY AND DEVELOPMENTAL
BIOLOGY OF VERTEBRATES)**

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



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

(2026)

Dear Student,

Please read the section on assignments in the Programme Guide for Core Courses 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** for this course. The assignment is in this booklet, and it consists of three parts, Part A, B and C. The total marks of all the parts are 100, of which 35% are needed to pass it.

Instructions for Formatting Your Assignments

Before attempting the assignment please read the following instructions carefully:

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

ROLL 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) Complete each of Part A, Part B and Part C of this assignment separately, and **submit them together.**
- 6) The assignment answer sheets are to be submitted to your Study Centre as per the schedule made by the study centre. **Answer sheets received after the due date shall not be accepted.**
We strongly suggest that you retain a copy of your answer sheets.
- 7) This assignment is **valid from 1st January, 2026 to 31st December, 2026.** If you have failed in this assignment or fail to submit it by December, 2026, then you need to get the assignment for the year 2027, and submit it as per the instructions given in the Programme Guide.
- 8) **You cannot fill the exam form for this course** till you have submitted this assignment.

We wish you good luck.

ASSIGNMENT **(Tutor Marked Assignment)**

Course Code: BZYCT-133
Assignment Code: BZYCT-133/TMA/2026
Maximum Marks: 100

Note: Attempt all questions. The marks for each question are indicated against it.

1.
 - i) List the primary divisions of the nervous system and their subdivisions. (5)
 - ii) List the cranial nerves of special senses and the nerves that innervate the eye muscles. (5)
2. Describe specialised sensory organs of vertebrates and relate their role to their habitat. (10)
3. How is the respiratory system of birds modified to meet their high oxygen requirement? How is it different from the respiratory system of mammals? (10)
4. Answer the following questions in short. (10)
 - i) What are the three sets of paired veins present in the early embryonic stage of vertebrates?
 - ii) What are the veins in fishes that bring blood from the fins?
 - iii) What is the fate of lateral abdominal veins in teleosts and lung fishes?
 - iv) What are precaval veins?
 - v) Why are large cutaneous veins present in amphibians?
5. Briefly write the functions of the following hormones secreted in mammals. (10)
 - a) Adrenocorticotropic hormone
 - b) Parathormone
 - c) Aldosterone
 - d) Testosterone
 - e) Progesterone
6. Explain the role of fate maps and patterns of development. (10)
7.
 - i) How would you define a ligand in cell-to cell signalling? (3)
 - ii) What is the difference between juxtacrine and paracrine signalling? (3)
 - iii) How is EMT used in the embryo and in the adult? (4)
8. List at least three stages in gene expression that can be regulated to result in differentiated cell types? Explain any one of them with the help of an example. (10)

9. Describe the process of neurulation in frog. (10)
10. Define the following terms: (10)
- i) Blastoderm
 - ii) Morphogenetic movements
 - iii) Fate maps
 - iv) Epiblast
 - v) Inner cell mass