

MBCE-013

ASSIGNMENT BOOKLET

**Master Degree Programme
M.Sc in Biochemistry (MSCBCH)**

HUMAN PHYSIOLOGY

Valid from January, 2025 to Dec, 2025



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

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 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) 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.

- 6) This assignment is **valid from 1st January, 2025 to 31st Dec, 2025** and submit it as per the instructions given in the Programme Guide.
- 7) **You cannot fill the exam form for this course** till you have submitted this assignment.

We wish you good luck.

ASSIGNMENT
HUMAN PHYSIOLOGY

Course Code: MBCE-013
Assignment Code: MBCE-013/TMA/2025
Maximum Marks: 100

Answer all the questions given below.

1. Define thermoregulation and explain its importance in maintaining homeostasis in the human body. (5+5) 10
2. Write short notes on the following:
 - i. Differentiate between the four primary types of tissues: epithelial, connective, muscle, and nervous tissue. Provide examples of each.
 - ii. Discuss the structure and function of epithelial tissues. How are they classified based on layers and cell shape? (5+5) 10
3. What are the main components of a homeostatic control system? Discuss how feedback mechanisms contribute to maintaining homeostasis. 10
4. Describe the physiological responses involved in thermoregulation during exposure to cold and heat stress. 10
5.
 - i. Explain the process of gas exchange in the respiratory system. How do oxygen and carbon dioxide diffuse between the lungs and blood? 5
 - ii. Discuss the impact of the Bohr effect on oxygen transport in the blood. How does it facilitate oxygen delivery to tissues during exercise? 5
6. Explain the structure and function of the heart as a blood pump. Include a description of its chambers, valves, and layers. 10
7. Discuss the components and significance of the cardiac conduction system, including the roles of the SA node, AV node, and Purkinje fibers. 10
8. Discuss the process of hematopoiesis and the regulation of blood volume. How is erythropoiesis controlled by erythropoietin? 10
9. Describe the ABO and Rh blood group systems. 10
10. Explain the mechanism of blood clotting, detailing the intrinsic, extrinsic, and common pathways, and the role of thrombin and fibrin. 10

Note: Draw the figures/flowcharts/tables wherever required.