

**BBCCT-103**

## **ASSIGNMENT BOOKLET**

**Bachelor (Honours) Degree in BIOCHEMISTRY (BSCBCH)**

### **CELL BIOLOGY**

**Valid from 1<sup>st</sup> July, 2021 to 31<sup>st</sup> December, 2022**

**Last date for the assignment submission is on or before 31<sup>st</sup> December, 2022.**



**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 of B.Sc. (Hons.) Biochemistry (BSCBCH) that we sent you after your enrolment. A weightage of 30 percent, 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 two parts, Part A and B. It covers all blocks of the course. The total marks of all the parts are 100, of which 35% are needed to pass it.

**SPECIFIC INSTRUCTIONS FOR TUTOR MARKED ASSIGNMENTS (TMA)**

- 1) Write your Enrolment Number, Name, Full Address, Signature and Date on the top right hand corner of the first page of your response sheet.
- 2) Write the Programme Title, Course Code, Course Title, Assignment Code and Name of your Study Centre on the left hand corner of the first page of your response sheet.

**Course Code and Assignment Code may be reproduced from the assignment.**

The top of the first page of your response sheet should look like this:

---

**ENROLMENT NO.:**

|                        |         |                   |       |
|------------------------|---------|-------------------|-------|
| <b>PROGRAMME TITLE</b> | : ..... | <b>NAME:</b>      | ..... |
| <b>COURSE CODE</b>     | : ..... | <b>ADDRESS:</b>   | ..... |
|                        |         |                   | ..... |
| <b>COURSE TITLE</b>    | : ..... |                   | ..... |
| <b>ASSIGNMENT CODE</b> | : ..... | <b>SIGNATURE:</b> | ..... |
| <b>STUDY CENTRE</b>    | : ..... | <b>DATE:</b>      | ..... |

---

- 3) Read the assignments carefully and follow the specific instructions, if any, given on the assignment itself about the subject matter or its presentation.
- 4) Go through the Units on which the assignments are based (Part A includes Block-1 and 2 and Part B Block 3 and 4). Make some points regarding the question and then rearrange those points in a

logical order and draw up a rough outline of your answer. While answering an essay type question, give adequate attention to introduction and conclusion. The introduction must provide a brief interpretation of the question and how you propose to develop it. The conclusion must summarise your response to the question. Make sure that the answer is logical and coherent, and has clear connections between sentences and paragraphs. The answer should be relevant to the question given in the assignment. Make sure that you have attempted all the main points of the question. Once you are satisfied with your answer, write down the final version neatly and underline the points you wish to emphasise. While solving numerical problems, use proper format and give working notes wherever necessary.

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

1. Use only foolscap size paper for your response and tie all the pages carefully. Avoid using very thin paper. Allow a 4 cm margin on the left and at least 4 lines in between each answer. This would facilitate the evaluator to write useful comments in the margin at appropriate places.
2. Write the responses in your own handwriting. Do not print or type the answers. Do not copy your answers from the Units/Blocks sent to you by the University. It is advised to write your answers in your own words as it will help in grasping the study material.
3. Do not copy from the response sheets of other students. If copying is noticed, the assignment will be rejected.
4. Write each assignment separately. All the assignments should not be written in continuity.
5. Write the question number with each answer.
6. The completed assignment should be submitted to the Coordinator of the Study Centre allotted to you. TMAs submitted at any other place will not be evaluated.
7. After submitting the TMA, get the acknowledgement from the Coordinator on the prescribed assignment remittance-cum-acknowledgement card.
8. In case you have requested for a change of Study Centre, you should submit your TMA only to the original Study Centre until the change of Study Centre is notified by the University.
9. If you find that there is any factual error in evaluation of your assignments e.g. any portion of your assignment response has not been evaluated or the total of score recorded on your assignment response is incorrect, you should approach the Coordinator of your study centre for correction and transmission of correct score to headquarters.
10. This assignment is valid from 1st July, 2021 to 30th June, 2022. If you have failed in this assignment or fail to submit it by June, 2022, then you need to get the assignment for the year 2022-23, and submit it as per the instructions given in the Programme Guide.
11. You cannot fill the exam form for this course till you have submitted this assignment.

We wish you good luck

# Assignment Cell Biology

Course Code: **BBCCT-103**  
Assignment code: **BBCCT-103/TMA/2021-2022**  
Maximum marks: **100**

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

For any question worth 2 marks, the word limit is 50-100 words, for 5 marks question it is 200-250 words; for 10 marks it is 350-400 words.

## PART-(A)

Maximum marks: 50

1. Fill in the blanks with correct words: [10]
  - i) The most primitive organism on earth is.....
  - ii) Bright field microscope forms a bright image against.....
  - iii) Sample tubes fixed at angle  $14^{\circ}$ - $40^{\circ}$  degree in.....
  - iv) Ribosome biogenesis and ribosomal RNA are synthesized in.....
  - v) Synthesis of membrane lipid take place in .....
  - vi) Lysosomal hydrolases work best at ..... pH.
  - vii) Chitin is the structural constituent of.....
  - viii) Microtubules are polar structures because.....
  - ix) The diameter of microfilaments is.....
  - x) .....is the major component of ECM.
2. (a) Explain the structural organisation of bacteria. [5]  
(b) Differentiate between gram positive cell wall and gram negative cell wall in bacteria. [5]
3. (a) Discuss the different types of rotors? [5]  
(b) What is Electron microscopy? Explain its role in cell biology. [5]
4. Describe the structure and function of Golgi Body. [10]
5. Write short notes on the following: [5+5=10]
  - (a) Gap Junction
  - (b) Actin filament

**PART-(B)**

Maximum marks: 50

6. State whether the following statements are true (T) or false (F). If false, point out the error: [10]

- i) The signal sequences comprise of 13-36 amino acids. [ ]
- ii) SRP is a docking protein. [ ]
- iii) N-glycosylation is initiated in the ER and is completed in the ER. [ ]
- iv) COPI coated vesicle drives the anterograde vesicle transport. [ ]
- v) ATP is the energy source for nuclear transport. [ ]
- vi) Hsp100 is a chaperone that helps to maintain proteins in an unfolded form. [ ]
- vii) The surface area and volume of a cell increases with increasing cell size. [ ]
- viii) The chromosomes become highly decondensed and relaxed in G<sub>2</sub> phase. [ ]
- ix) Cyclins are activated and degraded during cell cycle [ ]
- x) The p53 protein regulates both cell cycle progression and programmed cell death. [ ]

7. Describe the vesicular fusion. [10]

8. (a) Differentiate between O- glycosylation and N-glycosylation. [5]

(b) Explain how proteins import to the peroxisomes. [5]

9. (a) Point out the key differences between apoptosis and necrosis. [5]

(b) Discuss the characteristics of subdivision of Interphase. [5]

10. Write short notes on the following: [5+5=10]

(a) Receptor-mediated selective transport

(b) Stem cell