

# MAHATMA GANDHI UNIVERSITY, KOTTAYAM

## MGU-UGP (HONOURS)

### FIRST SEMESTER EXAMINATION

#### (2024 ADMISSION ONWARDS)

#### Bachelor of Science (Honours)Biotechnology

#### COURSE CODE – MG1DSCBTG100

#### Course Title - Fundamentals for Biotechnology

Duration: 1.5 hrs

Maximum Marks: 50

*Students should attempt at least one question from each course outcome to enhance their overall outcome attainability.*

#### Part A

#### Answer the questions in one word or sentence

#### Answer All Questions

#### Each question carries 1 mark

1. Write the meaning of the word “cyto” [K] [CO1].
2. Who proposed the cell doctrine? [K] [CO1].
3. Name the type of ribosome is present in eukaryotic cell. [K] [CO1].
4. The process of transferring a nucleus to a new cell is called---- [U] [ CO1].
5. The basic unit of DNA is called ----- [U] [CO1].
6. The Genetic makeup of an organism is? [U] [CO1].
7. Common cold is caused by what type of microbes? [K] [CO1].
8. The condition when body attacks it's own tissues and cells is known as? [U] [CO1].
9. DNA sequencing was first done by---- [K] CO1]
10. Which immunoglobulin can cross through placenta? [K] [CO1]. (1 X 10 = 10 Marks)

#### Short answer questions

#### Answer any 4 questions.

#### Each question carries 3 marks.

11. Explain the significance of Schleiden and Schwann's contributions to cell theory. [U] [CO 2)].
12. What is gene therapy? [U] [CO2].
13. What is the role of *Agrobacterium tumefaciens* in plant biotechnology? [U] [CO2].
14. Explain the denaturation step in PCR. [U] [CO2].
15. Analyse the law of independent assortment with segregation of gametes. [An] [CO3].
16. Solve the issue of entry of pathogen to animal cells which causes a disease. How the cell fights against. [Apply] [CO 3]. (3 X 4 = 12 Marks)

**Short Essay questions**  
**Answer any 3 questions.**  
**Each question carries 6 marks.**

17. Describe the monohybrid cross carried out by Mendel. [K] [CO1].
18. Differentiate the structure of DNA and RNA. [An] [CO3].
19. Outline the milestones in the development of Biotechnology. [U] [CO2].
20. rDNA technology is used to produce Genetically modified organisms. Justify. [An] [CO3].
21. Describe the general characteristics of Virus. [U] [CO2]. **(6 X 3 = 18 Marks)**

**Essay questions**  
**Answer any 1 question. (10 marks)**

22. Give an outline of rDNA technology. [U] [CO2].
23. Immunological responses are necessary for get rid of diseases. Outline the mechanism in detail. [An] [CO3]. **(10 X 1 = 10 Marks)**

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## MGU-UGP (HONOURS)

### FIRST SEMESTER EXAMINATION

#### (2024 ADMISSION ONWARDS)

#### Bachelor of Science (Honours)Biotechnology

Course Code: MG1MDCBTG100

Title of the Course: Ecology and Environmental Science

Duration: 1 Hr

Maximum Marks: 35

*Students should attempt at least one question from each course outcome to enhance their overall outcome attainability.*

Part A

**Answer the questions in one word or sentence**

**Answer All Questions**

**Each question carries 1 mark**

1. Living components of an ecosystem are called. [K] [CO1].
2. Expand NRCP. [K] [CO1].
3. In which year was the Green India Mission launched? [K] [CO1].
4. The process of transferring a nucleus to a new cell is called [U] [CO1].
5. Which national plan does the Green India Mission fall under? [K] [CO1].
6. Give an example for a carnivore. [U] [CO1].
7. Which type of component of an ecosystem is represented by Sunlight? [U] [CO1].
8. Name the component of ecosystem in which you classify essential nutrients. ---- [U] [CO1].
9. What is the primary source of energy for most ecosystems? [K] [CO1].
10. What is the status of the Arabian Oryx on the IUCN Red List? [U] [CO1].

**(1 X 10 = 10 Marks)**

**Short answer questions**

**Answer any 3 questions.**

**Each question carries 3 marks.**

11. Analyze the challenges faced by the Green India Mission in achieving its goals. [An] [CO 2].
12. Write a note on consumers in an ecosystem. [U] [CO1].
13. What is the role of atmospheric gases in supporting life on Earth? [U] [CO2].
14. How does climate change impact the Nilgiri Tahr habitat? [U] [CO1].
15. How is research utilized in the Sundarbans Mangrove Restoration Project? [An] [CO3].

**(3 X 3 = 9 Marks)**

**Short Essay questions**  
**Answer any 1 question (6 marks).**

16. Analyse the strategies adopted by the Green India Mission to enhance biodiversity in forest ecosystems. [An] [CO3].
17. Compare the role of producers and decomposers in an ecosystem. [An] [CO3].  
**(1 X 6 = 6 Marks)**

**Essay questions**  
**Answer any 1 question (10 marks)**

18. Elaborate the role of Sunlight as an Abiotic Factor and its impact in Ecosystem. [U] [CO2].
19. Analyse the effectiveness of the Sundarbans Mangrove Restoration Project in achieving its conservation goals. [An] [CO3].  
**(1 X 10 = 10 Marks)**