

MAHATMA GANDHI UNIVERSITY, KOTTAYAM

MGU-UGP (HONOURS)
FIRST SEMESTER EXAMINATION
(2024 ADMISSION ONWARDS)

Course Code: **MG1DSCBOT100** Course Title: **Fascinating world of plant sciences**

Time: 1.5 Hrs

Maximum Marks: 50

Student should attempt at least one question from each course outcome to enhance their overall outcome attainability

Part A:

Short answers

Answer 10 questions

Each question carries 1 mark

	Questions	Taxonomy	CO
1	Who is considered as the "Father of Botany"?	Remember	1
2	Which alkaloid is extracted from Quinine Tree bark?	Remember	1
3	Signify the role of scientific diagrams	Apply	3
4	Name the lichen species, that is used in traditional medicine and as a food additive?	Remember	2
5	List two examples of psychoactive plants consumed by animals.	Remember	2
6	Name an industry that could benefit from Citrus maxima-inspired designs	Remember	2
7	List any two peculiar adaptations of Insectivorous plants	Remember	2
8	Arctic poppy is an example of how smart plants are in adapting to challenging environments. Evaluate the statement.	Evaluate	2
9	What is the role of the rotating wheel in a rotary microtome?	Understand	3
10	A student is examining a leaf and wishes to understand the ultrastructure of chloroplasts. What is the best microscopy technique for this purpose?	Apply	3
11	Define Remote Sensing?	Remember	3
12	Name the thermostable enzyme used in PCR	Remember	3

Part B:

Short Essay Type Questions

Answer 6 Questions

Each question carries 5 marks

13	Pteridophytes are more advanced than bryophytes. Justify.	Analyse	2
14	Briefly analyse the evolutionary trends in land plants	Analyse	2
15	What are the advantages and limitations of free hand sectioning	Understand	3
16	Describe artificial system of classification of plants	Understand	3

17	Comment on the importance of botanical illustrations	Understand	3
18	Comment of relevance and scope of plant anatomical and plant physiological research in our life.	Understand	4
19	What are the different component parts of a GIS framework?	Understand	3
20	Describe how smart devices can be used in agriculture to manage water stress?	Apply	5

Part C:

Essay Type Questions

Answer any one question

Question carries 10 marks

21	Discuss electrophoresis, its principle, types, and application.	Understand	3
22	Compare and contrast gymnosperms and angiosperms	Analyse	2

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MGU-UGP (HONOURS)
FIRST SEMESTER EXAMINATION
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Course Code: **MG1DSCEVS100** Course Title: **Environmental biology**

Time: 1.5 Hrs

Maximum Marks: 50

Student should attempt at least one question from each course outcome to enhance their overall outcome attainability

Part A:

Short answers

Answer 10 questions

Each question carries 1 mark

	Questions	Taxonomy	CO
1	Define heterotrophs	Remember	2
2	Name any four nutrient cycles	Remember	2
3	Define Poikilotherms	Remember	2
4	Give an example for homeostasis in plants	Analyse	2
5	How do the plants absorb nitrogen.	Understand	2
6	What are two important functions of the environment?	Understand	1
7	What are the main branches of ecology?	Apply	1
8	Explain biodiversity hotspots.	Understand	3
9	What is the full form of IUCN?	Remember	3
10	How can mangroves reduce the impact of tsunamis	Understand	3
11	What are detritivores?	Remember	1
12	What is an ecological niche?	Analyse	1

Part B:

Short Essay Type Questions

Answer 6 Questions

Each question carries 5 marks

13	Give a brief account on the components of ecology?	Understand	1
14	Explain the characters of boreal forest?	Understand	2
15	Briefly explain the importance of biodiversity conservation.	Understand	3
16	What are the significance of sedimentary cycle	Analyse	2
17	What are the most productive ecosystem? Explain	Evaluate	2
18	Explain the process of eutrophication and its effects on aquatic ecosystems.	Analyse	1
19	Explain the importance of wetlands.	Understand	2

20 What are the xerophytic adaptations? Remember 2

Part C:
Essay Type Questions
Answer any one question
Question carries 10 marks

21 Explain how energy flows in an ecosystem. Understand 2

22 Define Red data book. How it influence the biodiversity
conservation? Explain. Apply 3

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MGU-UGP (HONOURS)
FIRST SEMESTER EXAMINATION
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Course Code: **MG1DSCHTC100** Course Title: **Basic horticulture**

Time: 1.5 Hrs

Maximum Marks: 50

Student should attempt at least one question from each course outcome to enhance their overall outcome attainability

Part A:

Short answers

Answer **any ten** questions
Each question carries **1 mark**

	Questions	Taxonomy	CO
1	What are the key differences between horticulture and agriculture?	Understand	1
2	What are the objectives of horticultural education and research in advancing the field?	Analyse	1
3	Write a short note on Semi-arid fruit zone	Remember	2
4	Differentiate living and nonliving components of garden	Analyse	2
5	Which soil property is most important in determining irrigation frequency?	Analyse	3
6	What are the four R's in nutrient management?	Remember	3
7	What is the key principle of nutrient management?	Understand	3
8	What is a formal garden?	Remember	2
9	How can horticultural therapy be used in healthcare settings to improve physical and mental well-being	Skill	1
10	What principle governs the timing of irrigation in agriculture?	Remember	3
11	What is inarching?	Understand	5
12	What is serpentine layering?	Understand	5

(10×01=10)

Part B:

Short Essay Type Questions
Answer **any six** Questions
Each question carries **5 marks**

13	Describe the process of creating a garden layout plan.	Understand	2
14	How do modern innovations like automated systems enhance the efficiency of greenhouses?	Evaluate	2
15	How evapotranspiration does influence the need for irrigation?	Apply	3
16	What is your understanding about Plant-Water-Soil	Evaluate	3

	relationship?		
17	How do modern technologies like genetic engineering and biotechnology influence plant breeding in horticulture?	Skill	1
18	Describe briefly about current trends and innovations in horticulture.	Evaluate	1
19	What are the applications of micro-propagation?	Apply	5
20	Compare the energy requirements of hydroponics and aquaponics.	Analyse	5

(6×5=30)

Part C:

Essay Type Questions

Answer *any one* question

Question carries *10 marks*

21	Create a plan for implementing AI-driven precision agriculture in a small-scale farm	Create	5
22	Explain the role of plant growing structures like hotbeds, greenhouses, and rain shelters in sustainable agriculture, focusing on how they help mitigate environmental challenges.	Understand	2

(1×10=10)

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MGU-UGP (HONOURS)
FIRST SEMESTER EXAMINATION
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Course Code: **MG1MDCBOT100** Course Title: **Ecotourism**

Time: 1 Hr

Maximum Marks: 35

Student should attempt at least one question from each course outcome to enhance their overall outcome attainability

Part A:

Short answers

Answer **any five** questions

Each question carries **1 mark**

	Questions	Taxonomy	CO
1	How do eco-lodges minimize their environmental impact?	Understand	1
2	Describe the significance of JFM	Understand	4
3	State two major principles of ecotourism	Remember	4, 5
4	Define endemism.	Understand	3
5	Define in-situ conservation.	Understand	3
6	Expand WWF	Remember	2
7	Name any two activities in adventure tourism	Remember	1
8	How do canopy walkways enhance the ecotourism experience?	Understand	3

(5×01=5)

Part B:

Short Essay Type Questions

Answer **any four** Questions

Each question carries **5 marks**

9	Write short notes on cultural diversity and ecotourism?	Analyze	3
10	Explain responsible tourism?	Understand	1
11	How can ecotourism help in wildlife conservation?	Apply	3
12	Why is it important to conduct environmental impact assessments in ecotourism?	Analyze	4, 5
13	Discuss the role played by WWF in ecotourism promotion.	Understand	2
14	Give an outline on the major components of an ecotourism system.	Understand	4, 5

(4×5=20)

Part C:

Essay Type Questions

Answer **any one** question

Question carries *10 marks*

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|----|--|------------|---|
| 15 | Evaluate the significance of ecotourism resources in ecotourism. How do these sites balance tourism, conservation, and community | Understand | 1 |
| 16 | Elaborate on the Western Ghats and their significance as a vibrant source of ecotourism? | Analyze | 3 |

(1×10=10)