

SANATANA DHARMA COLLEGE, ALAPPUZHA DEPARTMENT OF BOTANY

FIRST SEMESTER B.Sc. DEGREE (CBCSS) EXAMINATION

Botany core course I Internal Exam-January 2023

BO 1141-ANGIOSPERM ANATOMY, REPRODUCTIVE BOTANY AND PALYNOLOGY

Time: 1:30 hr.

Max. Marks: 40

I. Answer all the questions. Each question carries 1 mark.

1. Plasmodesmata
2. Define Tyloses
3. Sporopollenin
4. What is monosporic embryo sac?
5. What is exine?

(1x 5=5 marks)

II. Answer **any four** questions in a paragraph. Each question carries 2 marks

6. Give an account of Quiscent centre
7. Comment on Tunica-Corpus theory
8. What is double fertilization?
9. Write a note on Tapetum
10. Differentiate between Heart wood and sap wood.
11. Give an account on the structure of pollen.
12. Write a note on xylem elements.
13. What is meant by mellisopalynology

(2 x 4=8 marks)

III. Answer **any three**. Each question carries 4 marks

14. Enumerate different types of vascular bundles seen in Angiosperms
15. With the help of diagram describe the internal structure of young anther
16. What is meant by palynology? Give the applications of palynology
17. Describe microsporogenesis
18. What are Meristems and mention its classification

19. Discuss the structure of epidermal tissue system

(4 x 3= 12 marks)

IV. Write an essay on **any one** of the following.

20. Describe megasporogenesis and mention the allium type of embryo sac development with suitable diagrams.

21. Write an essay on permanent tissues with suitable diagrams

(15 x 1= 15 marks)

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Sanatana Dharma College, Alappuzha
Outcome Based Internal Evaluation Blue Print – 2022-23

Programme Name and Code: B.Sc. Botany (245)

Semester 1

Course name and Code: Angiosperm Anatomy, Reproductive Botany and Palynology (BO 1141)

Assignment/Seminar

Relevant Course Outcome: To generate awareness about anatomical features of Angiosperms & Reproductive biology.	Topic: Angiosperm Anatomy, Reproductive Botany and Palynology
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Internal Question Paper – Mapping of Test Items

Course Outcomes	Test Items with Marks
To develop skills for identification of microscopic structures	<ol style="list-style-type: none"> 1. Plasmodesmata-1 mark 2. Define Tyloses-1 mark 3. Give an account of Quiescent centre-2 marks 4. Comment on Tunica-Corpus theory-2 marks 5. What are Meristems and mention its classification-4 marks
To distinguish various tissue systems and internal structure	<ol style="list-style-type: none"> 1. Differentiate between Heart wood and sap wood. – 2 marks 2. Write a note on xylem elements-2 marks 3. Enumerate different types of vascular bundles seen in Angiosperms- 4 marks 4. Discuss the structure of epidermal tissue system-4 marks 5. Write an essay on permanent tissues with suitable diagrams -15 marks
To acquire basic knowledge about embryo development and pollen grains	<ol style="list-style-type: none"> 1. Sporopollenin-1 mark 2. What is monosporic embryo sac? -1 mark 3. What is exine? -1mark 4. What is double fertilization? -2 marks 5. Write a note on Tapetum-2 marks 6. Give an account on the structure of pollen-2 marks 7. What is meant by mellisopalynology -2 marks 8. With the help of diagram describe the internal structure of young anther-4 marks 9. What is meant by palynology? Give the applications of palynology-4 marks 10. Describe microsporogenesis-4 marks 11. Describe megasporogenesis and mention the allium type of embryo sac development with suitable diagrams. – 15 marks

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SANATANA DHARMA COLLEGE, ALAPPUZHA

DEPARTMENT OF BOTANY

THIRD SEMESTER BSc BOTANY INTERNAL EXAM-JANUARY 2023

BO 1341-MICROBIOLOGY, PHYCOLOGY, MYCOLOGY, LICHENOLOGY AND PLANT
PATHOLOGY

MAX.MARKS: 40

1. Answer all the questions. Each question carries 1 mark.

1. Define Coenobium. Give example.
2. Edible fungi.
3. Describe dolipore septa.
4. Name the symbiotic bacteria inhabiting root nodules of leguminous plants.
5. What are Amylum stars. (1x 5=5 marks)

Answer any four questions in a paragraph. Each question carries 2 marks

6. What is NAG and NAM?
7. Describe Diplontic life cycle of algae with example.
8. Describe the T.S of gill of Basidiocarp of Agaricus.
9. Distinguish between conceptacles and receptacles.
10. Explain the structure of apothecium of peziza.
11. Differentiate globule and nucule.
12. What are Actinomycetes.
13. Define generalized transduction.

(2 x 4= 8)

III. Answer any Three

14. Give an account on asexual reproduction in Penicillium.
15. General characters of Cyanophyceae.
16. Classify bacteria based on morphology.
17. Explain asexual reproduction in Oedogonium
18. Describe post fertilization changes in Polysiphonia
19. Lytic and Lysogenic cycle (4x3= 12)

IV Write an essay on any one of the following

20. What is a heteroecious fungus? Explain the life cycle of a heteroecious fungus with suitable diagrams.
21. Explain various mechanisms of reproduction in bacteria (1x15= 15)

SANATANA DHARAMA COLLEGE, ALAPPUZHA

Outcome Based Internal Evaluation Blue Print- 2022-23

Programme name and Code: B.Sc. Botany (245)
Semester 3

course name and code: bo 1341-Microbiology, phycology, mycology, lichenology and plant pathology

Assignment/ Seminar

<p>Relevant Course Outcome: To impart knowledge in plant lower forms</p>	<p>Topic: bo 1341-Microbiology, phycology, mycology, lichenology and plant pathology</p>
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<p>Course Outcomes</p>	<p>Test Items with Marks</p>
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To familiarize characteristic features of microbes and their significance	<ol style="list-style-type: none"> 1. Name the symbiotic bacteria inhabiting root nodules of leguminous plants. 2. Explain various mechanisms of reproduction in bacteria What is NAG and NAM? 3. General characters of Cyanophyceae. 4. Classify bacteria based on morphology. 5. Lytic and Lysogenic cycle 6. What are Actinomycetes.
To create awareness about importance of microbes in environment	<ol style="list-style-type: none"> 7. Edible fungi. 8. Describe dolipore septa. 9. What are Amylum stars. 10. Define generalized transduction. 11. Give an account on asexual reproduction in Penicillium. 12. What is a heteroecious fungus? Explain the life cycle of a heteroecious fungus with suitable diagrams.
To generate idea about types of algae, fungi, lichen and their economic as well as evolutionary significance	<ol style="list-style-type: none"> 13. Describe dolipore septa. 14. What are Amylum stars. 15. Describe Diplontic life cycle of algae with example. 16. Describe the T.S of gill of Basidiocarp of Agaricus. 17. Distinguish between conceptacles and receptacles. 18. Explain the structure of apothecium of peziza. 19. Differentiate globule and nucule. 20. Explain asexual reproduction in Oedogonium 21. Describe post fertilization changes in Polysiphonia <p>1.</p>

Internal Question Paper – Mapping of Test Items

SANATANA DHARMA COLLEGE, ALAPPUZHA.

PG & Research Department of Botany

INTERNAL EXAMINATION- SEMESTER VI BSc. (BATCH 2020-23)

Date of Examination: 28.03.2023

Subject: BO1651- BIOTECHNOLOGY & NANOBIO TECHNOLOGY.

Maximum Marks: 40

Time: 1 hr 30mins

SECTION A

I. Answer all questions, each carries **one** mark

1. Who is the father of tissue culture?
2. IPR
3. DNA ligases
4. SCP
5. Dendrimers

SECTION B

(1X5= 5 Marks)

II. Answer any **four** questions, each carries **2** marks.

6. Define totipotency.

7. What are GM plants?

8. Gene library

9. Define nif genes

10. Synthetic seeds

11. Microinjection

12. Cosmids

13. What are Quantum dots?

(2X4= 8 Marks)

SECTION C

III. Answer any **three** questions, each carries **4** marks.

14. Write a short note on Recombinant DNA technology
15. Give a brief account on recombinant microbes and its applications.
16. What are restriction endonucleases?
17. Differentiate between differentiation, de-differentiation, and re-differentiation.
18. Give brief account on the applications of biotechnology in agriculture.
19. Write a short note on ethical issues in biotechnology

(4X3= 12 Marks)

SECTION D

IV. Answer any **one**, which carries **15** marks.

20. Give an account of the application of microbes in industries
21. Give detailed account on the vectors used in genetic engineering

(1X15= 15 Marks)



SANATANA DHARAMA COLLEGE, ALAPPUZHA

Outcome Based Internal Evaluation Blue Print- 2022-23

Programme name and Code: B.Sc.

Botany (245)Semester 6

Course name and Code: Biotechnology & Nanobiotechnology (BO 1651)

Assignment/ Seminar

Relevant Course Outcome: To impart knowledge about biotechnology and Nanobiotechnology.	Topic: Biotechnology, Microbial and industrial Biotechnology and Nanobiotechnology.
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Internal Question Paper – Mapping of Test Items

Course Outcomes	Test Items with Marks
To Introduce plant biotechnology, tissue culture and rDNA technology	<ol style="list-style-type: none">3. Who is the father of tissue culture? – 1 mark4. DNA ligases- 1 mark5. IPR-1 mark6. Define totipotency-2 marks7. What are GM plants? -2 marks8. Gene library-2 marks9. Synthetic seeds-2 marks10. Microinjection-2 marks11. Cosmids-2 marks12. Write a short note on Recombinant DNA technology-4 marks13. What are restriction endonucleases? - 4 marks14. Differentiate between differentiation, de-differentiation, and re-differentiation – 4 marks15. Write a short note on ethical issues in biotechnology- 4 marks16. Give detailed account on the vectors used in genetic engineering-15 marks

<p>To give insight into applications in industrial biotechnology and nanobiotechnology</p>	<ol style="list-style-type: none">2. SCP-1 mark3. Dendrimers-1 mark4. Define nif genes-2 marks5. What are Quantum dots? -2 marks6. Give a brief account on recombinant microbes and its applications- 4 marks7. Give brief account on the applications of biotechnology in agriculture. -4 marks8. Give an account of the application of microbes in industries-15 marks
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SANATANA DHARMA COLLEGE, ALAPPUZHA
First Semester M.Sc. Botany Internal Examination, February 2023
BO 212 : BRYOPHYTA, PTERIDOPHYTA AND GYMNOSPERMS

Time : 3 Hours

Max. Marks : 75

I. Write short notes on the following questions.

1. Name two aquatic fern
2. Heterospory
3. Pycnoxylic wood
4. Amphigastria
5. Paleobotany
6. Seed-fern
7. Sporocarp
8. Protonema
9. Index fossil
10. Mesarch xylem

(10 × 1 = 10 Marks)

II. Answer the following questions in not more than 50 words.

11. (a) Give the diagnostic features of Jungermanniales.

OR

(b) What are elaters? Explain their function.

12. (a) Explain the merits of telome theory.

OR

(b) Comment on the harmful effects of *Salvinia*.

13. (a) Give the salient features of Bennettitales.

OR

(b) Comment on the Angiosperm characters of Gnetopsida.

14. (a) What is polyembryony? Mention its types.

OR

(b) Explain Geological time scale.

15. (a) Distinguish between bract scale and ovuliferous scale.

OR

(b) Comment on Radiocarbon dating

(5 × 2 = 10 Marks)

III. Answer the following questions in not more than 150 words.

16. (a) Explain the vegetative methods of reproduction in Bryophytes.

OR

(b) Comment on the range of thallus organization in Bryophytes.

17. (a) Explain the spore producing structures in Pteropsida.

OR

(b) Describe the external morphology of *Azolla*.

18. (a) What is Fossilization? Mention different types of Fossils.

OR

(b) Write a brief account on *Zygopteris*.

19. (a) Comment on the major contributions of Sit Kashyap.

OR

(b) Write a brief account on the features of thallus and sporogonium in *Targionia*.

20. (a) Comment on the major similarities and differences of Pteridophytes with Bryophytes.

OR

(b) Describe the external morphology of *Ophioglossum*.

21. (a) Explain the salient features of *Pentoxylales*.

OR

(b) Comment on woody gymnosperms.

22. (a) Describe the structure of *Lepidocarpon*. Draw labelled diagram.

OR

(b) Explain the uses of Fossil.

(7 × 5 = 35 Marks)

IV. Answer the following questions in not more than 250 words.

23. (a) Give an account on the economic importance of Bryophytes.

OR

(b) Describe the thallus structure and reproduction in *Adiantum*.

24. (a) Write the classification of Gymnosperms by KR. Sporne and add a note on the diagnostic features of major classes.

OR

(b) Give an elaborate account of the structure and reproduction in *Rhynia*.

(2 × 10 = 20 Marks)

S.D. College, Alappuzha
Outcome Based Internal Evaluation Blue Print – 2022-23

Programme name and Code: M.Sc Botany (645)

Semester 1

Course name and code: Bryophyta, Pteridophyta and Gymnosperms (BO 212)

Assignment/Seminar

Relevant Course Outcome: Structure, reproduction, life cycles in different types of Bryophytes, Pteridophytes and Gymnosperms.	Topic: Bryophyta, Pteridophyta and Gymnosperms
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Internal Question Paper – Mapping of Test Items

Course Outcomes	Test Items with Marks
To impart basic knowledge about geographical distribution, classification, structure, life history and phylogeny of Bryophytes, Pteridophytes and gymnosperms.	<ol style="list-style-type: none"> 1. Name two aquatic fern -1 mark 2. Heterospory -1 mark 3. Pycnoxylic wood -1 mark 4. Amphigastria -1 mark 5. Seed-fern -1 mark 6. Sporocarp -1 mark 7. Protonema -1 mark 8. Mesarch xylem-1 mark 9. (a) Give the diagnostic features of Jungermanniales – 2 marks (b)What are elaters? Explain their function. 10. Explain the merits of telome theory – 2 marks 11. (a)Give the salient features of Bennettiales- 2 marks (b)Comment on the Angiosperm characters of Gnetales 12. What is polyembryony? Mention its types – 2 marks 13. Distinguish between bract scale and ovuliferous scale -2 marks 14. (a)Explain the vegetative methods of reproduction in Bryophytes-5 marks (b)Comment on the range of thallus organization in Bryophytes 15. (a) Explain the spore producing structures in Pteropsida- 5 marks (b) Describe the external morphology of <i>Azolla</i>. 16. (a) Comment on the major contributions of Sit Kashyap – 5 marks (b) Write a brief account on the features of thallus and sporogonium in <i>Targionia</i>. 17. (a) Comment on the major similarities and differences of Pteridophytes with Bryophytes – 5 marks (b) Describe the external morphology of <i>Ophioglossum</i> 18. Write the classification of Gymnosperms by KR. Sporne and add a note on the diagnostic features of major classes – 10 marks 19. Describe the thallus structure and reproduction in <i>Adiantum</i>- 10 marks
To give an idea about their ecological role and economically important	<ol style="list-style-type: none"> 1. Pycnoxylic wood – 1 mark 2. Comment on the harmful effects of <i>Salvinia</i> – 2 marks 3. Give an account on the economic importance of Bryophytes – 10 marks

products obtained from them and their uses.	
To familiarize the fossil members of these groups.	<ol style="list-style-type: none"> 1. Paleobotany – 1 mark 2. Index fossil - 1 mark 3. Explain Geological time scale – 2 marks 4. Comment on Radiocarbon dating – 2 marks 5. (a) Describe the structure of <i>Lepidocarpon</i>. Draw labelled diagram – 5 marks (b) Explain the uses of Fossil 6. Explain the salient features of <i>Pentoxylales</i> - 5 marks 7. Write a brief account on <i>Zygopteris</i>- 5 marks 8. What is Fossilization? Mention different types of Fossils – 5 marks 9. Give an elaborate account of the structure and reproduction in <i>Rhynia</i> – 10 marks