

**LOYOLA COLLEGE (AUTONOMOUS), CHENNAI – 600 034**



**B.Sc. DEGREE EXAMINATION – PLANT BIOLOGY AND PLANT BIOTECHNOLOGY**

**SECOND SEMESTER – APRIL 2022**

**UPB 2502 – PTERIDOPHYTES, GYMNOSPERMS AND PALEOBOTANY**

**(21 BATCH ONLY)**

Date: 18-06-2022

Dept. No.

Max. : 100 Marks

Time: 01:00 PM - 04:00 PM

**SECTION – A**

**(20 Marks)**

**Answer ALL the Questions**

<b>1.</b>	<b>Choose the correct answer</b>	<b>(5 x 1 = 5)</b>	
a)	The free-floating water fern used as biofertilizer is _____. i) <i>Azolla</i> ii) <i>Equisetum</i> iii) <i>Marsilea</i> iv) <i>Pteris</i>	K1	CO1
b)	The water-containing cavity in the vascular bundle of <i>Equisetum</i> is called _____ canal. i) vallecular ii) carinal iii) vascular iv) aqueous	K1	CO1
c)	With no living representative and all fossil members belong to _____. i) Pteridospermales ii) Cycadales iii) Gnetales iv) Coniferales	K1	CO1
d)	<i>Cycas</i> ovules are _____. i) anatropous ii) campylotropous iii) amphitropous iv) orthotropous	K1	CO1
e)	The carbon isotope used commonly for dating of fossils is _____. i) C <sup>11</sup> ii) C <sup>12</sup> iii) C <sup>13</sup> iv) C <sup>14</sup>	K1	CO1
<b>2.</b>	<b>Complete the following sentences</b>	<b>(5 x 1 = 5)</b>	
a)	In the plant kingdom, pteridophytes occupy a position in between bryophytes and _____.	K1	CO1
b)	<i>Lycopodium</i> is commonly called _____ moss.	K1	CO1
c)	The negatively geotropic roots of <i>Cycas</i> are called the _____ roots.	K1	CO1
d)	Scale leaves of <i>Pinus</i> are also called _____.	K1	CO1
e)	With reference to geological time scale, each geological era is divided into _____.	K1	CO1
<b>3.</b>	<b>Answer the following, each within 50 words</b>	<b>(5 x 2 = 10)</b>	
a)	Explain the term 'Stele.'	K2	CO1
b)	Infer the meaning of false indusium.	K2	CO1
c)	Discuss the class <i>Pteridospermales</i> .	K2	CO1
d)	Express the term 'circinate vernation.'	K2	CO1
e)	Interpret the plant body of <i>Williamsonia</i> with diagram only.	K2	CO1

**SECTION – B**

**Answer any TWO of the following each within 500 words. Draw diagrams / flowcharts wherever necessary. (2 x 10 = 20)**

4.	Write notes on apospory and apogamy.	K3	CO2
5.	Illustrate and explain the structure of <i>Marsilea</i> sporocarp.	K3	CO2
6.	Write notes on the important characteristics of <i>Coniferales</i> and <i>Gnetales</i> .	K3	CO2
7.	Give a brief account on any 4 types of fossils.	K3	CO2

**SECTION – C**

**Answer any TWO of the following each within 500 words. Draw diagrams / flowcharts wherever necessary. (2 x 10 = 20)**

8.	Explain briefly the plant body of <i>Equisetum</i> .	K4	CO3
9.	Point out with facts, the concept of pro-gymnosperms.	K4	CO3
10.	Infer with a diagram, the anatomy of <i>Pinus</i> needle.	K4	CO3
11.	Analyse the methods and the theories of fossilization.	K4	CO3

**SECTION – D**

**Answer any ONE of the following in 1000 words. Draw diagrams / flowcharts wherever necessary. (1 x 20 = 20)**

12.	Summarize the salient features of the Pteridophyte classes.	K5	CO4
13.	Compare the salient features of the stem anatomy of <i>Psilotum</i> and <i>Marsilea</i> .	K5	CO4

**SECTION – E**

**Answer any ONE of the following each within 1000 words. Draw diagrams / flowcharts wherever necessary. (1 x 20 = 20)**

14.	Organize based on their uses, the economic importance of Gymnosperms.	K6	CO5
15.	Construct the structural features of i) <i>Lepidodendron</i> ii) <i>Calamites</i>	K6	CO5

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