

LOYOLA COLLEGE (AUTONOMOUS), CHENNAI – 600 034

B.Sc. DEGREE EXAMINATION – ADVANCED ZOOLOGY & BIOTECHNOLOGY

SECOND SEMESTER – APRIL 2010

PB 2102 / 2100 - ESSENTIALS OF PLANT BIOLOGY

Date & Time: 22/04/2010 / 1:00 - 4:00 Dept. No.

Max. : 100 Marks

PART - A

Answer all questions

(20 marks)

I. Choose the correct answer:

(5×1= 5)

01. Match A) *Cycas* B) *Nostoc* C) *Marsilea* D) *Aspergillus* with
i) sporocarp ii) akinete iii) ovule iv) conidia
a. A-iii, B-iv, C-i, D-ii b. A-iii, B-ii, C-i, D-iv
b. A-iii, B-ii, C-iv, D-i d. A-iii, B-i, C-iv, D-ii
02. Verticillaster type of inflorescence is found in the members of the family:
a. Lamiaceae b. Amaranthaceae c. Liliaceae d. Ceasalpiniaceae
03. Statement A : Collenchyma cells are characterized by thickenings at corners.
Statement B : They are living cells.
a. Statement A is correct ,but statement B is incorrect
b. Statement B is correct, but statement A is incorrect
c. Both statements A and B are correct
d. Both statements A and B are incorrect
04. When pollen tube enters by integuments, then the process is called:
a. mesogamy b. porogamy c. chalazogamy d. pseudogamy
05. The alkaloid morphine is obtained from the fruits of :
a. *Nicotiana tabacum* b. *Corchorus capsularis*
c. *Cannabis sativa* d. *Papaver somniferum*

II. State whether the following statements are true or false:

(5×1=5)

06. Teleutospores are associated with *Puccinia*.
07. Caesalpiniaceae members have marginal placentation.
08. Cork cambium is otherwise known as phelloderm.
09. Endosperm is diploid in nature.
10. Quinine is obtained from the seeds of *Cinchona officinalis*.

III. Complete the following:

(5×1=5)

11. Male and female sex organs of *Funaria* are known as _____ and _____ respectively.
12. Linnaeus published a book entitled _____.
13. The two regions of mesophyll in dicot leaves are _____ and _____ parenchyma.
14. The hygroscopic nature of _____ cells help in the dehiscence of the anthers.
15. _____ oil is used for the separation of minerals from their ores.

IV. Answer the following each within 50 words only:

(5×1=5)

16. Write down the systematic position of *Lycopodium*.
17. Distinguish between metachlamydeae and archichlamydeae?
18. Differentiate between anisocytic and paracytic stomata.
19. What is ruminant endosperm?
20. Write short notes on Indian periwinkle.

PART- B

Answer the following, each within 350 words only. Draw diagrams wherever necessary.

(5×7=35)

21. a. Describe the external structure of gametophyte of *Funaria*.
(OR)
b. Explain the internal structure of leaflet of *Cycas*.
22. a. Write the salient features of the family Amaranthaceae..
(OR)
b. Enumerate the diagnostic features of the family Lamiaceae.
23. a. What are meristems? Mention their types and characteristics. Write down the theories associated with them.
(OR)
b. Give a comparative account on the anatomy of Dicot and Monocot leaves.
24. a. Give an account of different types of ovules found in the angiosperms.
(OR)
b. Describe the process of development of embryo in dicotyledons.
25. a. What are essential oils? Write about any three essential yielding plants .
(OR)
b. Distinguish between spices and condiments. Write about any two spices and two condiments.

PART-C

Answer any three of the following, each answer within 1500 words. Draw diagrams wherever necessary.

(3×15=45)

26. What is isomorphic alteration of generation? Explain this term with reference to life cycle of *Ectocarpus*.
27. Give a detailed account of Bentham and Hooker's system of classification. Add a note on its merits and demerits.
28. Compare and contrast the anatomy of Dicot and Monocot stem.
29. Describe the following :
 - a) Structure and development of microspore.
 - b) Structure and development of polygonum type of embryo sac.
30. Write the binomial, family, morphology of useful parts and uses of tomato, wheat, sesame, cotton, sweet flag and tea.
