

IV Semester B.Sc. Examination, April/May 2015
(Semester Scheme) (N.S.) (Fresh) (2012-13 and Onwards)

BOTANY – Paper – IV

Gymnosperms and Embryology of Angiosperms

Time : 3 Hours

Max. Marks : 70

- Instructions :** i) Answer **all** the Parts.
ii) Draw diagrams **wherever** necessary.

PART – A

A. Answer **any seven** of the following :

(7×2=14)

- 1) Pollengrain of pinus.
- 2) Give any 4 economic importance of gymnosperms.
- 3) Differentiate monoxlyic and pycnoxlyic wood.
- 4) Define cleavage polyembryony.
- 5) What is cytokinesis and mention its types ?
- 6) Define porogamy and mesogamy.
- 7) What is NEMEC phenomenon ?
- 8) Define somatic hybridization.
- 9) Bisporic type of embryosac.

PART – B

B. Describe **any six** of the following :

(6×4=24)

- 10) What is culture media ? Explain any one of the culture media.
- 11) Megasporophyll of cycas.
- 12) Any four angiospermic characters of gnetum.
- 13) List any four post fertilisation changes in angiosperms.
- 14) Tetrasporic embryosac development.
- 15) Techniques of tissue culture.
- 16) Contributions of Prof. B.G.L. Swamy.
- 17) Structure of Anther wall.

PART – C

C. Give a detailed account of **any four** of the following :

(4×8=32)

- 18) With a neat labelled diagram explain the development and structure of dicot embryo.
- 19) Describe the male and female strobili of gnetum.
- 20) Explain the process of microsporogenesis.
- 21) Describe : a) Totipotency b) Practical applications of embryology
- 22) Give an account of polyembryony.
- 23) Types of ovules in angiosperms.

P.T.O.

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III B.Sc. VI SEMESTER BOTANY-4 PREVIOUS YEARS QUESTION PAPER



MS – 329

IV Semester B.Sc. Examination, May/June 2016
(NS) (2012-13 and Onwards)
BOTANY (Paper – IV)
Gymnosperm and Embryology of Angiosperm

Time : 3 Hours

Max. Marks : 70

- Instructions :** 1) Answer *all* questions.
2) Draw diagrams *wherever necessary*.

PART – A

A. Answer **any seven** of the following in **two or three** sentences. (7×2=14)

- 1) Draw a neat, labeled diagram of microprophyll in cycas.
- 2) What is winged pollen grain ? Give an example.
- 3) Mention any four uses of gymnosperms.
- 4) What is endothecium ?
- 5) Define an anatropous ovule.
- 6) What is triple fusion ?
- 7) Define chalazogamy.
- 8) What is callus ?
- 9) Define polyembryony.

PART – B

B. Describe **any six** of the following. (6×4=24)

- 10) T.S. of leaflet in cycas.
- 11) L.S. of mature ovule in gnetum.
- 12) Secretary type of tapetum.
- 13) Pollen embryo sac.
- 14) Cleavage polyembryony.
- 15) Ruminant endosperm.
- 16) Protoplast culture.
- 17) Parthenocarpy.

PART – C

C. Give a detailed account of **any four** of the following : (4×8=32)

- 18) Male and female reproductive structure in pinus.
- 19) Development and structure of Allium type of embryo sac.
- 20) Embryo development in monocots.
- 21) Economic importance of gymnosperms.
- 22) Double fertilization and post-fertilization changes in angiosperms.
- 23) a) Advantages of plant tissue culture.
b) Endosperm haustoria.

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IV Semester B.Sc. Examination, May 2017
(CBCS) (Fresh + Repeaters) (2015-16 and Onwards)
BOTANY (Paper - IV)
Gymnosperms and Embryology of Angiosperms

Time : 3 Hours

Max. Marks : 70

- Instructions :** 1) Answer all questions.
2) Draw diagrams wherever necessary.

A. Explain/Define any ten of the following in two or three sentences : (10×2=20)

- 1) Antherozoids in cycas.
- 2) Draw a neat labelled diagram of circinotropous ovule.
- 3) What is glandular tapetum ?
- 4) Define polyembryony. Mention two types.
- 5) What is cytokinesis ? Mention its types.
- 6) What is pavement tissue ?
- 7) What is filiform apparatus ? Mention its functions.
- 8) What is porogamy ?
- 9) What is winged pollen grain ? Name the plant in which these are found.
- 10) What is spur ? Give an example.
- 11) Define totipotency.
- 12) What is pollen tetrad ? Mention two types.

B. Write critical notes on any four of the following : (4×5=20)

- 13) Pollen wall of angiosperms.
- 14) Monosporic embryo sac development.
- 15) Polyembryony.
- 16) Cellular endosperm.
- 17) L. S. of Pinus ovule.
- 18) Female cone of Gnetum.

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C. Give a comprehensive account of **any three** of the following : (3×10=30)

- 19) Events in double fertilization.
- 20) Techniques in plant tissue culture with a note on practical applications of anther culture.
- 21) Development and structure of monocot embryo.
- 22) T. S. of mature anther.
- 23) a) Composition of nutrient media.
b) Role of embryology in taxonomy with respect to *Trapa*.

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IV Semester B.Sc. Examination, May/June 2018
(CBCS) (Fresh + Repeaters) (2015-16 and Onwards)
BOTANY (Paper – IV)

Gymnosperms and Embryology of Angiosperms

Time : 3 Hours

Max. Marks : 70

Instructions : 1) Answer **all** questions.
2) Draw diagrams **wherever** necessary.

PART – A

A. Explain/Define **any ten** of the following in **two** or **three** sentences : (10×2=20)

- 1) What is coenomegaspore ?
- 2) What is Pollen Kit ?
- 3) What is transfusion tissue ?
- 4) What is an amphitropous ovule ?
- 5) What is Pollen Chamber ? Give an example.
- 6) What is NEMEC Phenomenon ?
- 7) What is Palynogram ?
- 8) What are Pollinia ? Give an example.
- 9) What is Parthenocarpy ? Mention the types.
- 10) Draw a neat labelled diagram of Pinus megasporophyll.
- 11) Name the types of Pollen tetrads.
- 12) Name the two cells in a mature Angiosperm Pollen grain.

PART – B

B. Write critical notes on **any four** of the following : (4×5=20)

- 13) Functions of tapetum.
- 14) Internal structure of coralloid root of cycas.
- 15) Mellissopalynology.
- 16) Cleavage Polyembryony.
- 17) Male cone of Gnetum.
- 18) What is placentation ? Explain the types.

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PART – C

C. Give a comprehensive account of **any three** of the following : (3×10=30)

- 19) Cellular and Helobial type of endosperm development.
- 20) Economic importance of Gymnosperms.
- 21) Explain microsporogenesis and add a note on anther wall layers.
- 22) Describe the process of fertilization in Angiosperms.
- 23) Explain the development and structure of Dicot embryo.

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IV Semester B.Sc. Examination, May/June - 2019

BOTANY IV

**Gymnosperms and Embryology of Angiosperms
(CBCS) (Fresh+Repeaters) (2015-16 & Onwards)**

Time : 3 Hours

Max. Marks : 70

Instructions to Candidates :

- (i) Answer **all** questions.
- (ii) Draw diagrams wherever necessary.

PART - A

I. Explain/Define any ten of the following in two or three sentences : 10x2=20

1. What is winged pollen grain ? Where is it found ?
2. Define megasporogenesis.
3. What is polyembryony ? Mention any two types.
4. Define Chalazogamy and Mesogamy.
5. What is Somatic hybridization ?
6. Draw a neat labelled diagram of axile placentation with example.
7. What is algal zone ? Where is it found ?
8. Differentiate between bract scale and ovuliferous scale.
9. What are Cataphylls ?
10. Mention two advantages of pollen storage.
11. Give two economic importance of Gymnosperms.
12. Mention any two practical applications of tissue culture.

P.T.O.

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III B.Sc. VI SEMESTER BOTANY-4 PREVIOUS YEARS QUESTION PAPER

GS-340

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PART - B

4x5=20

II. Write critical notes on **any four** of the following :

13. Describe the structure of Orthotropous ovule in angiosperms.
14. T.S. of leaf let of Cycas.
15. Contribution of P. Maheswari to embryology of angiosperms.
16. Female Cone of Gnetum.
17. T.S. of young anther.
18. Polygonum type of embryonic development.

PART - C

III. Give a comprehensive account of **any three** of the following :

3x10=30

19. Male and Female Cone of Pinus.
20. Double fertilization and post fertilization changes in angiosperms.
21. Any two types of endosperm.
22. Development and structure of monocot embryo.
23. (a) Nutrient media
(b) Anther culture

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