2018

BOTANY

BOT 102

BRYOLOGY, PTERIDOLOGY & PALEOBOTANY

Full Marks: 80

Time: 3 hours

The figures in the margin indicates full marks for the questions

Q1).* Answer the following *Multiple Choice Questions

(all are Compulsory) 1×9= 9

(i) The simplest known sporophyte among the Bryophytes is seen in:

(a) *Riccia* (b) *Polytricum*

(c) *Funaria* (d) *Anthoceros*

(ii) *Psilophyton* was discovered by-

(a) A.C. Seward (b) J.W. Dawson

(c) C.A. Arnold (d) Birbal Sahni

(iii) Who amongst the following is regarded as the 'Father of Indian Bryology'?

(a) Prof. D.D. Pant (b) Prof. K.C. Mehta

(c) Prof. S.R. Kashyap (d) Prof. P.N. Mehta

(iv) Which one of the following is not characteristics features of early embryophytes?

(a) Presence of Archegonium (b) Motile sperms

(c) Water is essential for fertilization

(d) Photosynthetically independent sporophytes

(v) Which of the following species of *Riccia* is aquatic?

(a) *Riccia himalyensis* (b) *Riccia discolor*

(c) *Riccia fluitans* (d) *Riccia crystalline.*

(vi) Bryophytes are called amphibians of Plant Kingdom because:

(a) Bryophytes like amphibians live in damp shady places and close to water body

(b) Bryophytes like amphibian ancestors are one of the most primitive organisms in this world

(c) Amphibians have close relation with bryophytes in their habitat

(d) All of these

(vii) Which of the following group is commonly known as **'Lantern'**.

(a)Polytricho –phyta/psida (b)Sphagno-pyta/psida

(c) Andreaeao-phyta/psida (d)Takakio-phyta/psida

(viii) In leptosporangiate type of sporangial development the sporangia develops from

(a) Single superficial cells (b) A group of cells

(c) Two cells (d) Three cells

(ix) Elaters are present in sporogonium of :

(a) *Riccia* (b) *Marchantia*

(c) *Sphagnum* (d) *Selagienella*

Q2). **Distinguish between *(any Three)*** **4 × 3 = 12**

a. Sphenophyllales *vs* Lepidodendrales

b. Eusporangiate and Leptosporangiate

c. Gametophyte of *Riccia* and *Marchantia*

d. Homospory and Heterospory

e. *Polytrichum* and *Funaria*

Q3). **Write an explanatory note on *any Four* of the following** **5 × 4 = 20**

a. Economic importance of bryophytes

b. Telome Theory

c. Origin of vascular cryptogams

d. Classification of fossil plants

e. Bryophytes as pollution indicator and monitoring.

Q4). **Answer the following questions *(any Three)*** **9×3 = 27**

a. Define apospory and apogamy. Discuss in detail the different life cycle of aposporous and apogamous fern. 2+7=9

b. What is GTS? Briefly describe the fossilization process. 2+7=9

c. What is Heterospory? Explain the biological significance of Heterospory. How does *Selaginella* show the seed habit characters? 2+4+3=9

d. Give an account on morphological and reproductive diversity of Bryophytes with the help of suitable sketches. 3+3+3=9

Q5). **Answer the following questions *(any One)*** **1 × 12 =12**

a. Give an account on interrelationships and origin of Bryophytes.

b. Describe the most recent system of classification on vascular cryptogams you have studied.

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