



**DAA-003-001509**

**B. Sc. (Sem. V) (CBCS) Examination**

**May/June - 2015**

**B-501 : Botany**

**Faculty Code : 003**

**Subject Code : 001509**

Time :  $2\frac{1}{2}$  Hours]

[Total Marks : 70

- Instructions : (1) Write answers of all questions in main answer book.  
(2) Draw neat and labelled diagrams wherever necessary.  
(3) Figures to the right side indicate full marks for the question.

- 1 Choose the correct answer : 20
- (1) The Zygote nucleus of coleochaete divides (X), forming (Y) haploid zoopores. Identify X and Y.
- (A) X = Mitotically, Y = 8-16  
(B) X = Meiotically, Y = 8-32  
(C) X = Amitotically, Y = 8-32  
(D) X = Cell division, Y = 8-16
- (2) Which of the following algal group is examples of isogamous reproduction ?
- (A) Ectocarpus, Cladophora  
(B) Vaucheria, Chara  
(C) Pandorina, Codium, Eudorina  
(D) Chara, Coleochaete

- (3) Which species of Chara grow in hot springs ?
- (A) Chara baltica
  - (B) Chara Zeylanica
  - (C) Chara Braunii
  - (D) Chara fragilis
- (4) Which of the following statements is true for Ectocarpus ?
- (A) The zoospores produced in plurilocular sporengium develop into gametophyte.
  - (B) The gametophyte in it may also produce plurilocular sporengia.
  - (C) In Ectocarpus alternation of generation is isomorphic type.
  - (D) In Ectocarpus Zoospores bear two unequal anterior flagella.
- (5) Which of the following statements is false for heterothallism in Fungi ?
- (A) Homothallic and heterothallic conditions are equivalent to unisexual and bisexual conditions of higher plants.
  - (B) Heterothallic fungi require two compatible thalli for sexual reproduction.
  - (C) The term haplodioecids is also used to refer to morphological heterothallism.
  - (D) A homothallic fungus is sexually self incompatible.
- (6) Sexually produced non motile spores of endogenous origin in fungi :
- (A) Zoospores
  - (B) Ascospores
  - (C) Oidia
  - (D) Aplanospores

(7) Match the columns :

Column I		Column II	
a.	Cleistothecium	1.	Ustilago
b.	Amylum stars	2.	Aspergillus
c.	Cyclosporin-A	3.	Chara
d.	Tetrapolar multiple allele	4.	Trichoderma

- |     | a | b | c | d |
|-----|---|---|---|---|
| (A) | 2 | 3 | 4 | 1 |
| (B) | 2 | 3 | 1 | 4 |
| (C) | 1 | 4 | 3 | 2 |
| (D) | 3 | 2 | 1 | 4 |

(8) It is curved hook like terminal cell of the Ascogenous hyphae :

- (A) Cleistothecium
- (B) Trichogyne
- (C) Crozier
- (D) Ascogonium

(9) Bryophytes are strictly :

- (A) Heterosporous
- (B) Homosporous
- (C) (A) and (B) Both
- (D) Asporous

(10) Which of the following statements is/are true ?

- (i) Sexual reproduction in bryophyte is anisogamous.
  - (ii) Bryophytic plant body is thalloid or foliose.
  - (iii) Vascular tissue is present in Pellia.
- (A) (i), (ii), (iii)
  - (B) only (i) and (iii)
  - (C) only (i) and (ii)
  - (D) only (ii) and (iii)

- (11) The condition in *Pellia*, in which antheridia mature before archegonia is called :
- (A) Protandrous
  - (B) Monoecious
  - (C) Nanandrous
  - (D) Amphithecium
- (12) How many neck canal cells are in the archegonium of sphagnum ?
- (A) 6-10
  - (B) 6-8
  - (C) 10-15
  - (D) 8-10
- (13) What is the scientific name of giant horsetails ?
- (A) *Rhynia*
  - (B) *Lepidodendron*
  - (C) *Calamites*
  - (D) All the above
- (14) Which is the false statement for *Ophioglossum* ?
- (A) The root have mycorrhiza but no root hairs.
  - (B) Each plant produces only one leaf in a year.
  - (C) Spike originates from germination of spore.
  - (D) Nature of development of sporengium is Eusporangiate.
- (15) In which species of *Marsilea* vessels have been reported ?
- (A) *M. Condensata*
  - (B) *M. elata*
  - (C) *M. Minuta*
  - (D) *M. aegyptica*

- (16) Amphiphloic siphonostele is found in
- (A) Ophioglossum rhizome
  - (B) Marsilea rhizome
  - (C) Isoetes rhizomorph
  - (D) Rhynia stem
- (17) Which of the following is biological measures for disease control ?
- (A) Quarantine
  - (B) Eradication
  - (C) Breeding resistant varieties
  - (D) Chemical prophylaxis
- (18) Which is the symptoms of the Red rot disease of sugarcane ?
- (A) Stem becomes dull and shrinks at the node
  - (B) On leaves, lesions first appear as small round spots
  - (C) Long whip-like black shoot, much curved on itself
  - (D) Leaf spots are circular and necrotic lesions on both surfaces.
- (19) Tikka disease is caused by :
- (A) Fusarium
  - (B) Cercospora
  - (C) Collectotrichum
  - (D) Puccinia
- (20) Actual mechanism of disease development is known as :
- (A) Etiology
  - (B) Pathogenesis
  - (C) Epidemiology
  - (D) Infection

- 2 (a) Give the answers in short : (any three) 6
- (i) Why Caulerpa has been placed in the order Siphonales ?
  - (ii) Explain : Leaf scar in Lepidodendron
  - (iii) Draw the labelled diagram only : Spermocarp of Coleochaete
  - (iv) Mention biological uses of Trichoderma
  - (v) Give the classification of : Calamites
  - (vi) How nomenclature of fossil is done ?
- (b) Give the answers in brief : (any three) 9
- (i) Explain : 2-allele heterothallism
  - (ii) Describe : Diatomite
  - (iii) Give resemblance of bryophyte with algae.
  - (iv) Explain : Rhynia stem t.s.
  - (v) Give name of causative agent and symptoms of whip smut of sugarcane.
  - (vi) Give ecological importance of Sphagnum leaf.
- (c) Give the answers in detail : (any two) 10
- (i) Any four types of spore in fungus.
  - (ii) Anatomy of spike of ophioglossum.
  - (iii) Write the ten symptoms of plant diseases.
  - (iv) Anatomy of Marsilea leaflet with diagram.
  - (v) Neutral sporangia of Ectocarpus.

- 3 (a) Answer in short : (any three) 6
- (i) It is desirable to keep *Aspergillus* both under Ascomycetes and Deuteromycetes ? If so, why ?
  - (ii) Give structure of Antheridium in *Pellia*.
  - (iii) Describe only : Carpogonium in coleochaete
  - (iv) Explain : Cell wall of *Navicula*
  - (v) Draw well labelled diagram only: A sporophyll of isoetes.
  - (vi) Give two objectives of geological time scale.
- (b) Give the answers in brief : (any three) 9
- (i) Explain : Asexual reproduction in *Trichoderma*
  - (ii) Explain : Vegetative reproduction in *Chara*
  - (iii) Write the differences between epidemic and endemic disease (six points)
  - (iv) Describe : Sporangia in *Rhynia*
  - (v) Explain : Coenozoic era
  - (vi) Write notes on : Dehiscence of capsule in sphagnum
- (c) Give the answers in detail : (any two) 10
- (i) Structure of matured sporophyte of sphagnum with diagram.
  - (ii) Give symptoms and control of citrus canker.
  - (iii) Sporocarp of *Marsilea*
  - (iv) Sexual reproduction in *Chara*
  - (v) Asexual reproduction in *Eurotium*.