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Sr. No. of Question Paper :
Unique Paper Code :
Name of the Course :
Name of the Paper :
Semester :

216201
B. Sc. (H) Botany
Biodiversity-II : Mycology and Phytopathology [BTHT-202]
II

H

Duration : 3 Hours

Maximum Marks : 75

Instruction for Candidates

1. Write your Roll No. on the top immediately on receipt of this question paper.
2. Attempt **five** questions in all.
3. Question No. 1 is compulsory.
4. **All** parts of a question must be answered together.
5. Draw well-labelled diagrams wherever necessary.

Q.1. Define **any five** of the following:

(1x5=5)

- (a) i) Stolon
ii) Acervulus
iii) Plectenchyma
iv) Sclerotium
v) Rhizomorph
vi) Ascospore

(b) Match the following :-

(1x5=5)

- Column I
- i) Cleistothecium
 - ii) Zygosporangium
 - iii) Smut spores
 - iv) Budding
 - v) Foliose lichen

- Column II
- a) *Saccharomyces*
 - b) *Ustilago*
 - c) *Parmelia*
 - d) *Rhizopus*
 - e) *Penicillium*

Briefly describe

(c) Define **any five** of the following:

1×5=5

- i. Diffusion
- ii. Plasmolysis
- iii. Middle lamella
- iv. Centromere
- v. Mesosome
- vi. Nucleolus

Q.2. Write Short notes on **any three** of the following :

5×3=15

- i. Phase contrast microscopy
- ii. facilitated diffusion
- iii. Components of extracellular matrix
- iv. Cell secretion
- v. Significance of cell division

Q3. Differentiate between **any three** of the following :

5×3=15

- i. Euchromatin and Heterochromatin
- ii. SER and RER
- iii. Active transport and Passive transport
- iv. Peroxisomes and Glyoxisomes
- v. Prokaryotic and Eukaryotic cell

Q.4. Explain **any three** of following :

5×3=15

- (a) Davson – Danielli model of cell membrane
- (b) Nucleosome
- (c) Structure of Plant cell wall
- (d) Na^+/K^+ exchange pump
- (e) Carbohydrates in membrane

Q.6. Write short notes on the following (any three):-

(5x3=15)

- (a) *Neurospora* as genetic tool
- (b) Industrial uses of fungi
- (c) Mushroom cultivation
- (d) Parasexuality

Q.7. (a) Give the symptoms caused by the following:-

(3x2=6)

(i) *Albugo candida*

(ii) *Alternaria solani*

(b) What are systemic fungicides?

(4)

(c) Describe ^{role of} Plant Quarantine regulations.

(5)

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This question paper contains 4 printed pages.

Your Roll No.

Sl. No. of Ques. Paper: 6470

HC

Unique Paper Code : 32161201

Name of Paper : Mycology and Phytopathology

Name of Course : B.Sc. (Hons.) Botany

Semester : II

Duration : 3 hours

Maximum Marks : 75

*(Write your Roll No. on the top immediately
on receipt of this question paper.)*

*Attempt five questions in all.
Question No. 1 is compulsory.
All questions carry equal marks.*

*All parts of a question must be attempted together.
Draw well-labelled diagrams wherever necessary.*

1. (a) Fill in the blanks (any ten): 10×1=10

- (i) Muriform conidia are present in — .
- (ii) — is a Heteroecious fungus.
- (iii) Late Blight of Potato is caused by — .
- (iv) *Rhizopus* hyphae growing horizontally over the surface of substratum are called — .
- (v) — has the ability to ferment sugar solution when the oxygen supply is very poor.
- (vi) — is a poisonous mushroom.

P. T. O.

- (vii) Paragynous antheridium is produced by genus — .
- (viii) Aflatoxin is produced by — .
- (ix) Heterothallism was discovered by — .
- (x) A propagule containing fungal mycelium loosely intertwined with algal cells is — .
- (xi) Fan shaped plasmodium is called — .

(b) Match the following: $5 \times 1 = 5$

<i>Column A</i>	<i>Column B</i>
(i) Annulus	5 (a) <i>Aspergillus</i>
(ii) Cleistothecium	3 (b) <i>Rhizopus</i>
(iii) Zygosporangium	2 (c) <i>Puccinia graminis</i>
(iv) Uredospore	2 (d) <i>Penicillium</i>
(v) Biverticillate conidiophore	1 (e) <i>Agaricus</i>

2. Write short notes on any *three* of the following:

- (a) Dolipore septum
- (b) Bioluminescent fungi
- (c) Ascocarp
- (d) Sporangium of *Stemonitis*
- (e) Parasexuality $3 \times 5 = 15$

3. Draw well labelled diagram of any *three* of the following:

- (a) VS Wheat leaf showing Teleutospores

- (b) VS Heteromorous Lichen thallus
- (c) VS leaf showing asexual reproduction in *Albugo candida*
- (d) LS Apothecium *Peziza*
- (e) EM Yeast cell. $3 \times 5 = 15$

4. Differentiate between any *five* of the following:

- (a) *Cephalodium* and *Isidia*
- (b) Loose smut and covered smut
- (c) *Phragmobasidium* and *Holobasidium*
- (d) Asexual reproduction in *Penicillium* and *Aspergillus*
- (e) Oospore and Zygosporangium
- (f) Spermogonium and Aecium. $5 \times 3 = 15$

5. Answer the following:

- (a) Discuss the use of *Neurospora* as a genetic material.
- (b) Briefly describe the economic and ecological importance of Lichens
- (c) Explain the modes of nutrition in Fungi. $5 \times 3 = 15$

6. Answer the following:

- (a) Discuss the role of fungi in biological control. 7

- (b) Write the symptoms and causal organism of Angular Leaf Spot of cotton. 4
- (c) Write briefly about Ectomycorrhiza and Endomycorrhiza. 4

7. Answer the following:

- (a) Elaborate the role of fungi in biotechnology. 5
- (b) Discuss symptoms, causal organism and disease cycle of White Rust of crucifers with the help of diagrams. 10

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Roll No.

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S. No. of Question Paper : 6471

Unique Paper Code : 32161202

HC

Name of the Paper : Archegoniatae

Name of the Course : B.Sc. (H) Botany

Semester : II

Duration : 3 Hours

Maximum Marks : 75

(Write your Roll No. on the top immediately on receipt of this question paper.)

Attempt five questions in all, including

Question no. 1 which is compulsory.

All questions carry equal marks.

1. (a) Define (any five) :

1×5=5

(i) Protonema

(ii) Bars of sanio

(iii) Sulphur shower

(iv) Leaf trace

(v) Retort cell

(vi) Pseudoelaters

(vii) Haplostele

P.T.O.

- (b) Fill in the blanks with appropriate words : 1×5=5
- In bryophytes Rossette habit is characteristic feature of
 - In *Porella*, forward edge of each leaf rests upon the hind edge of the leaf next above it. Such a leaf arrangement is known as.....
 - The female gametophyte isin *Gnetum* as in some angiosperms.
 - Girdling of leaf trace are characteristic feature of the stem of
 - In pteridophytes, vessels are present in gametophyte of
- (c) Give one example for the following (any five) : 1×5=5
- A gymnosperm used for making plywood.
 - Bryophyte that is devoid of sterile jacket layer in archegonia
 - Living fossil
 - Peat moss
 - Fossil pteridophyte
 - Vallecular canal
 - Heterosporous pteridophyte

2. Differentiate between the following (any five) : 3×5=15
- Long and dwarf shoots of *Pinus*
 - Overtopping and Planation
 - Nurse cells and elaters
 - Perigynium and perichaetium
 - Manoxylic and pycnoxylic wood
 - Thalli of *Pellia* and *Porella*
3. Write short notes on the following (any five) : 3×5=15
- Splash cup mechanism
 - Post-fertilization changes in *Pinus* seed scale complex
 - Ecological importance of *Sphagnum*
 - Apogamy
 - Synangium of *Psilotum*
 - Economic importance of gymnosperms
4. Draw well labeled diagram (any three) : 5×3=15
- L.S. capsule *Funaria*
 - T.S. internode of *Equisetum*
 - T.S. coralloid root of *Cycas*
 - L.S. archegoniophore in *Marchantia*

5. (a) "Mature sporophyte of *Riccia* is a biological enigma."
Elucidate. 7
- (b) Discuss the hydrophytic and xerophytic features of
Equisetum. Illustrate with suitable diagrams. 8
6. (a) Explain the stellar evolution with the help of
diagrams. 8
- (b) Give an account of adaptation of land habit in
bryophytes. 7
7. (a) Compare the ovule of *Cycas* and *Gnetum* during
the time of fertilization. Illustrate with suitable
diagram. 8
- (b) Discuss the evolutionary significance of sporophyte of
Anthoceros. 7