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Your Roll No. : 2019

Sl. No. of Q. Paper : **2192** **IC**

Unique Paper Code : 32161201

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

Name of the Paper : Mycology and
Phytopathology

Semester : II

Time : 3 Hours **Maximum Marks : 75**

Instructions for Candidates :

- (a) Write your Roll No. on the top immediately on receipt of this question paper.
- (b) Attempt any **six** questions in all including question **No.1** which is compulsory.
- (c) Please attempt **all** parts of a question together.
- (d) Draw suitable diagrams wherever necessary.

1. (a) Fill in the blanks : 1×10=10

- (i) is a coprophilous fungus.
- (ii) is commonly known as red mold.

P.T.O.

- (iii) A fungus used in flavouring of cheese is
- (iv) Yellow stripe rust of Wheat is caused by
- (v) Coenocentrum is found in
- (vi) is an example of a holocarpic fungus.
- (vii) Thallus of slime mold is called
- (viii) Isidia are vegetative propagules of
- (ix) Angular leaf spot of cotton is caused by
- (x) Perfect stage of *Aspergillus* is

(b) Define any **five** of the following : 1×5=5

- (i) Capillitium
- (ii) Appresorium
- (iii) Myxamoeba
- (iv) Hymenium
- (v) Arbuscles
- (vi) Soredia
- (vii) Sporodochium

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

4×3=12

- (i) Amphigynous and paragynous antheridial development

- (ii) Cleistothecium and Perithecium
- (iii) Endomycorrhiza and Ectomycorrhiza
- (iv) Homoeomerous and Heteromerous lichen

3. Write short notes on any **three** of the following :
4×3=12

- (i) Spermatization
- (ii) Fairy ring of mushroom
- (iii) Plant quarantine regulations
- (iv) Chytridiomycetes
- (v) Sexual reproduction in *Rhizopus*

4. Discuss briefly any **two** of the following :
6×2=12

- (i) Classification of plant diseases
- (ii) External symptoms of viral diseases
- (iii) Bioluminescence in fungi

5. Write notes on any **three** of the following :

4×3=12

- (i) Asexual reproduction in *Albugo*
- (ii) Sexual reproduction in *Phytophthora*
- (iii) Sexual reproduction in *Neurospora*
- (iv) Sexual reproduction in *Saccharomyces cerevisiae*
- (v) Parasexual cycle in a fungus.

P.T.O.

6. Draw well labelled diagrams of any **three** of the following : $4 \times 3 = 12$
- (i) V.S. thallus of lichen
 - (ii) V.S. apothecium of *Peziza*
 - (iii) L.S. of a gill of *Agaricus*
 - (iv) Sporangium of *Stemonitis*
7. (i) Explain the life cycle of *Puccinia graminis tritici* with well labelled diagrams. 6
- (ii) Discuss role of fungi in agriculture and food industry. 6
8. Explain any **three** of the following : $4 \times 3 = 12$
- (a) Symptoms of bacterial diseases
 - (b) Conidiophore of *Penicillium*
 - (c) Hyphae modification in fungi
 - (d) Asexual reproduction in *Alternaria*
 - (e) Types of Plasmodium

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~~Your Roll No.~~ : 2019.....

Sl. No. of Q. Paper : **2193** **IC**

Unique Paper Code : 32161202

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

Name of the Paper : Archegoniatae

Semester : II

Time : 3 Hours

Maximum Marks : 75

Instructions for Candidates :

- (a) Write your Roll No. on the top immediately on receipt of this question paper.
- (b) Attempt **five** questions in all.
- (c) Question **No.1** is compulsory.
- (d) Attempt **all** parts of question together .
- (e) Draw neat labelled diagrams wherever necessary.

1. (a) Fill in the blanks : 1×5=5
- (i) The term gymnosperms was coined by.....
 - (ii) Telome theory was given by.....

P.T.O.

- (iii) is a gymnosperm showing double fertilization.
- (iv) Kidney shaped sporangia are seen in.....
- (v) Canada balsam is obtained from.....

(b) Match the following : 1×5=5

- | | |
|--------------------------|-----------------|
| (i) Retort cells | <i>Cycas</i> |
| (ii) Synangium | <i>Pteris</i> |
| (iii) Amphigastria | <i>Sphagnum</i> |
| (iv) Stomium | <i>Porella</i> |
| (v) Diploxylic condition | <i>Psilotum</i> |

(c) Give the botanical names of : 1×5=5

- (i) Whisk fern
- (ii) Peat moss
- (iii) A living fossil
- (iv) Hornwort
- (v) Scouring rushes

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

3×5=15

- (i) Thallus of *Riccia* and *Pellia*
- (ii) Gametophyte of *Equisetum* and *Pteris*

- (iii) Stem of *Cycas* and *Pinus*
- (iv) Gametophyte of *Porella* and vegetative Sporophyte of *Selaginella*
- (v) Capsule of *Marchantia* and *Riccia*

3. Draw neat labelled diagrams of any **three** of the following : 3×5=15

- (i) T.S. internode of *Equisetum* stem
- (ii) V.S. needle of *Pinus*
- (iii) T.S. coralloid root of *Cycas*
- (iv) L.S. capsule of *Funaria*
- (v) V.S. sporophyll of *Pteris*

4. Write short notes on any **three** of the following : 3×5=15

- (i) Spore dispersal in *Pteris*
- (ii) Hydrophytic characters of *Equisetum*
- (iii) Primitive features of *Cycas*
- (iv) Asexual reproduction in *Marchantia*

5. (a) Enumerate the general characteristics of Pteridophytes. How are they different from Bryophytes ? 8
- (b) Enumerate the morphological features of *Rhynia*. 4
- (c) What is a seed-scale complex ? Explain. 3
6. (a) What are the differences between the ovule of *Cycas* and *Pinus* at the time of fertilization ? Draw diagrammatic sketches to support your answer. 7
- (b) Briefly enumerate the evolution of stelar system in Pteridophytes. 5
- (c) Discuss the ecological importance of Bryophytes. 3
7. (a) What are the evolutionary tendencies of *Gnetum*? 5
- (b) The sporophyte of *Anthoceros* is partially independent. Comment. 5
- (c) What is the significance of heterospory ? Explain. 5

Sl. No. of Q.P. : 3547

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2019 I

Unique Paper Code: 217251

Name of Paper: Chemistry-II (CHCT-402) ✓

Name of Course: B.Sc (H) Biochemistry/Botany/Biomedical Science/Microbiology

Semester: II

Duration: 3 hrs

Maximum Marks: 75

Instructions for Candidates:

1. Write your roll number on top immediately on receipt of this question.
2. Attempt all questions.

1. Answer the following:

(5x3=15)

- a. What do you understand by concepts of stereoisomerism and chiral centre?
- b. In gas phase the order of increasing basicity is:

Ammonia < Primary Amine (CH_3NH_2) < Secondary Amine ($(\text{CH}_3)_2\text{NH}_2$) < Tertiary Amine ($(\text{CH}_3)_3\text{N}$)

Account for this observation

Would this order remain the same or change in water?

- c. Which is most stable and why?

Primary Carbocation

Secondary Carbocation

Tertiary Carbocation

- d. Salicylic acid is 15 times more acidic than benzoic acid. Explain why.
- e. Draw all possible conformations of cyclohexane and specify which is the most stable form giving reason.

2. Explain any six the following with examples

(6 x 3=18)

- a. Conformation
- b. Meso form
- c. Chiral Centre
- d. Enantiomers
- e. Diastereomers
- f. Reducing sugar
- g. Erythro and threo-prefixes

3. Write short notes on the following:

(5 x 4= 20)

- a. Conformational Isomerism
- b. Resonance
- c. Merrifield synthesis
- d. Edmann Degradation

e. Racemic mixture

4. How would you accomplish the following conversions?

(3x2=6)

a. D-Glucose to D-Fructose

b. D-Arabinose to D-Fructose

5. Give an account of the following with the help of mechanism:

(3)

Osazone Formation of glucose

6. Can you explain why Fructose is a reducing sugar?

(3)

7. Write the structure of Ninhydrin reagent explaining its use.

(3)

8. Discuss the use of D.C.C. and t-BOC in peptide synthesis.

(3)

9. How many stereoisomers are possible for tartaric acid? Draw structures in Fischer Projection formula. Apart from this, also explain how would these stereoisomers be related to each other?

(4)