SET-'B'

B. Sc. (H) BOTANY III SEM

PAPER TITLE: ANATOMY OF ANGIOSPERMS

UNIQUE PAER CODE: 32161301_OC

TIME: 3 +1 Hours **Maximum Marks: 75**

(Write your University Roll Number, Paper Title and Code on the top of the Answer Sheet)

Attempt any four questions in all. All questions carry equal marks.

1. With the help of well labeled diagrams briefly explain the structure and function of complex tissues in plants. **18.75**
2. Discuss various theories related to root and shoot apical meristem. **18.75**
3. What are the anatomical changes occur when primary tissue becomes secondary tissue in stem? Elucidate with appropriate diagrams. **18.75**
4. Give detailed account of the anatomical adaptations in leaf and stem of xerophytes (one example each) **18.75**
5. Discuss various types of secretory tissues with the help of well labeled diagrams.**18.75**
6. Due to abnormal behavior of cambium, a dicot woody climber develops phloem wedges. Explain briefly the process and discuss the anomaly in structure with an appropriate cellular diagram. **18.75**

Set-B

Unique Paper Code : 32161302
Name of the paper : Economic Botany
Name of the Course : B. Sc. Hons. Botany (CBCS)
Semester : III

Time: 3 +1 Hours **Maximum Marks: 75**

(Write your University Roll Number and Paper Title & Code on top of the Answer Sheet)
Attempt any four questions in all. All questions carry equal marks (i.e. 18.75).

1. Write the botanical name and family of clove and black pepper. Write their morphological and anatomical structures with well labelled diagrams. Describe the economic importance of spices.

2. What is CTC tea ? Write the botanical name and family of tea. Discuss the chemical composition and give a detailed account of harvesting and processing of different types of tea.

3. Write about mustard and groundnut with respect to their morphology, chemical composition and their economic uses. Differentiate between essential oils and vegetable oils. Explain in detail methods of processing of edible vegetable oil.

4. Trace the evolution of hexaploid wheat. Differentiate between cereals and millets and give a brief account of millets.

5. Name any one research centre in India which is associated with cotton improvement. Differentiate between lint and fuzz and discuss the harvesting, processing and uses of cotton.

6. Write the botanical name, family and chemical constituent of fever bark tree ? Discuss any two plants and its derivatives in relation to their therapeutic and habit-forming nature.

SET C

Unique Paper Code : 32161303
Name of the Paper : Genetics
Name of the Course : B.Sc. (H) Botany CBCS
Semester : III

Duration : 3 + 1 Hours **Maximum Marks: 75**

Attempt only four questions in all. All questions carry equal marks.

Q1 In a plant, purple flower is dominant over white flower and smooth texture is dominant over wrinkled. When a purple flowered and smooth seeded plant is crossed to a purple flowered and wrinkled seeded plant, one of the phenotypes in the progeny breeds true for white flowers and wrinkled seeds. Determine the **genotypes of the parents** and **phenotypic ratio of the progeny**. Explain is there any genetic interaction involved in the above problem. What is **epigenetics**? Explain its **mechanism**. **(18.75)**

Q2. Describe **molecular basis of mutation** with reference to different **chemical mutagens** and explain **ClB method** of detection of mutation. Give a detailed account of different **transposable genetic elements** found in eukaryotes and prokaryotes. Differentiate between **composite & non composite transposons** with diagrams. **(18.75)**

Q.3 Explain **Creighton and McClintock's** experiment through diagrams. Calculate **recombination frequency**, **coefficient of coincidence**, **interference** and **determine order of the genes** from the following data obtained in a three point test cross. (**ct = cut wings, cv= cross wing, v= vermillion red eye)** **(18.75)**

Genotype	Progeny
+ + ct	759
cv v +	766
+ v +	73
cv + ct	80
+ v ct	140
cv + +	158
+ + +	3
cv v ct	1

Q.4 Differentiate between **maternal inheritance & maternal effect** by citing one example each. Also explain **penetrance and expressivity** with suitable examples. **(18.75)**

Q 5 Under what conditions **ring chromosome** and **Inversion bridge** is formed? Explain their formation with well labeled diagrams. Explain how **polyploidy has resulted in evolution of new crop** species with at least **3 examples.** **(18.75)**

Q6. What is **Cis-Trans test** for functional allelism? Write a brief account of different conditions under which **Hardy-Weinberg law** of equilibrium is followed in a population citing suitable examples. **(18.75)**

Set A

Unique Paper Code	:	32161101_OC
Name of the Paper	:	Microbiology and Phycology
Name of the Course	:	Botany
Deptt. Code	:	216
C_No	:	C1
Semester	:	I
Duration	:	___3 +1____ hours
Maximum Marks	:	____75___ Marks

Instructions for Candidates

a) Attempt any four questions in all.
b) Write your University Roll Number on top of the Answer Sheet

Q.1 Name a parasitic alga known to you and define the following terms with the help of diagram and example: Bacteroid, Trichoblast, Binary fission, Synzoospore, Hormogonia, Dwarf male, Spermocarp, Plakea and Red snow.

(0.75+2+2+2+2+2+2+2+2+2=**18.75 Marks**)

Q.2. Discuss the symptoms, casual organism and control measures of one bacterial and one viral plant disease.

(**18.75 Marks**)

Q.3. With the help of labelled diagrams, describe the morphology and reproduction of *Fucus* and *Polysiphonia*.

(**18.75 Marks**)

Q.4. Comment on applied phycology including the role of algae in the environment, agriculture, biotechnology and industry.

(**18.75 Marks**)

Q.5. What do you understand by Gaidukov phenomenon. Compare Chlorophyceae, Xanthophyceae, Phaeophyceae and Rhodophyceae on the basis of cell wall composition, pigments, reserve food material and flagellated structures.

(2.75+4+4+4+4=**18.75 Marks**)

Q.6. Differentiate between the given pair: Globule and Nucule; Lytic and lysogeny; Unilocular and plurilocular sporangia; Heterocyst and vegetative cell of *Nostoc*; Archaebacteria and Eubacteria

(3.75+3.75+3.75+3.75+3.75=**18.75 Marks**)