



# UNIVERSITY OF THE PUNJAB

Third Semester – 2019

Examination: B.S. 4 Years Program

Roll No. ....

**PAPER: Botany-III (Cell Biology, Genetics and Evolution)**

**Course Code: BOT-201/21300 Part – II**

**MAX. TIME: 2 Hrs. 45 Min.**

**MAX. MARKS: 50**

**ATTEMPT THIS (SUBJECTIVE) ON THE SEPARATE ANSWER SHEET PROVIDED**

**Q.2. Answer the short questions.**

**(10 x 2 = 20)**

- i. Define Cell theory.
- ii. What is the difference between Simple and Facilitated diffusion?
- iii. What are Leucoplasts ? Mention their functions.
- iv. Differentiate between Prokaryotic and Eukaryotic ribosomes.
- v. What are Peroxisomes? What is their function?
- vi. What are the different types of RNA and their functions?
- vii. What is Transduction?
- viii. What are Cytoplasmic inclusions?
- ix. Differentiate between Population and Community.
- x. What is Synapsis?

**Q.3. Answer the long questions.**

**(3 x 10 = 30)**

1. a. What is the chemical composition of Cell membrane? (7)  
b. Describe the ultrastructure and function of Chloroplast. (8)
2. a. Write a short note on Lac operon. (6)  
b. Explain the Transduction in bacteria in detail. (9)
3. a. Differentiate between Test cross and Back Cross and their importance. (7)  
b. Explain with examples Duplication and Deletion. (8)



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Third Semester – 2019

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Roll No. in Fig. ....

Roll No. in Words. ....

PAPER: Botany-III (Cell Biology, Genetics and Evolution)

MAX. TIME: 15 Min.

Course Code: BOT-201/21300 Part-I (Compulsory)

MAX. MARKS: 10

Signature of Supdt.:

**Attempt this Paper on this Question Sheet only.**

**Please encircle the correct option. Division of marks is given in front of each question.**

**This Paper will be collected back after expiry of time limit mentioned above.**

**Q.1. Encircle the right answer, cutting and overwriting is not allowed. (1x10=10)**

a. Carbohydrates are present in plasma membrane in the form of:

- i. Starch
- ii. Cellulose
- iii. Hemicellulose
- iv. Glycolipids

b. The main function of Golgi complex is

- i. Translocation
- ii. Fermentation
- iii. Glycosylation
- iv. Phosphorylation

c. Protein essential for chromatin formation is:

- i. Actin
- ii. Tubulin
- iii. Histone
- iv. Myosin

d. The functions of peroxisomes are:

- i. Synthesis of glycine
- ii. Synthesis of serine
- iii. Protection from toxic effects of hydrogen peroxide
- iv. All of the these

e. The two organelle responsible for cytoplasmic inheritance among eukaryotes are:

- i. Lysosomes and Mitochondria
- ii. Mitochondria and Golgi complex
- iii. Chloroplast and Mitochondria
- iv. Chloroplast and Lysosomes

f. Light reactions take place in:

- i. Grana
- ii. Stroma
- iii. Thylakoids
- iv. Quantasomes

g. Nucleolus helps in the formation of:

- i. r-RNA
- ii. m-RNA
- iii. t-RNA
- iv. Golgi body

h. The monomeric units of DNA are:

- i. Proteins
- ii. Nucleosides
- iii. Nucleotides
- iv. Purines and Pyrimidines

i. The term heterosis represents:

- i. Hybrid incompatibility
- ii. Hybrid vigour
- iii. Hybrid sterility
- iv. Structural hybridity

j. Introduction of foreign genes for improving genotype is called:

- i. Vernalization
- ii. Tissue culture
- iii. Biotechnology
- iv. Genetic Engineering