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( 4th Semester )

BOTANY

FOURTH PAPER

( **Microbiology, Cytology, etc.**  )*Full Marks : 55**Time : 2½ hours*

( PART : B—DESCRIPTIVE )

( *Marks : 35* )*The figures in the margin indicate full marks  
for the questions*

1. Give an account on morphological based classification of bacteria. 7

*Or*Write short notes on the following :  $3\frac{1}{2}\times 2=7$ 

- (a) Lysogenic cycle in bacteria  
(b) Scope of microbiology

2. What are microbes? Describe the role of microbes in biofertilizer's production. 7

*Or*Write short notes on the following :  $3\frac{1}{2}\times 2=7$ 

- (a) Microbes in water  
(b) Microbial production of enzymes

3. With a labelled diagram, explain the ultrastructure of plant cell. 7

*Or*Write short notes on the following :  $3\frac{1}{2}\times 2=7$ 

- (a) Intragenic and intergenic interaction of genes  
(b) Complementary genes

4. What is sex determination? Describe chromosome theory of sex determination. 7

*Or*Write short notes on the following :  $3\frac{1}{2}\times 2=7$ 

- (a) Crossing-over and meiosis  
(b) Linkage

5. Explain the theory of natural selection. 7

*Or*Write short notes on the following :  $3\frac{1}{2}\times 2=7$ 

- (a) Theory of organic evolution  
(b) Mutation theory

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Subject Code : BOT/IV/04

Booklet No. **A**

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Date Stamp .....

**To be filled in by the Candidate**

DEGREE 4th Semester  
(Arts / Science / Commerce /  
..... ) Exam., **2017**  
Subject .....  
Paper .....

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**To be filled in by the Candidate**

DEGREE 4th Semester  
(Arts / Science / Commerce /  
..... ) Exam., **2017**  
Roll No. ....  
Regn. No. ....  
Subject .....  
Paper .....  
Descriptive Type  
Booklet No. B .....

**INSTRUCTIONS TO CANDIDATES**

- 1. The Booklet No. of this script should be quoted in the answer script meant for descriptive type questions and vice versa.
- 2. This paper should be ANSWERED FIRST and submitted within 45 minutes of the commencement of the Examination.
- 3. While answering the questions of this booklet, any cutting, erasing, overwriting or furnishing more than one answer is prohibited. Any rough work, if required, should be done only on the main Answer Book. Instructions given in each question should be followed for answering that question only.

Signature of  
Scrutiniser(s)

Signature of  
Examiner(s)

Signature of  
Invigilator(s)

**BOT/IV/04**

**2 0 1 7**

( 4th Semester )

**BOTANY**

FOURTH PAPER

**( Microbiology, Cytology, etc. )**

( PART : A—OBJECTIVE )

( Marks : 20 )

*The figures in the margin indicate full marks for the questions*

SECTION—I

( Marks : 5 )

Select the correct answer by putting a Tick (✓) mark in the brackets provided : 1×5=5

**1.** A bacterial cell with flagella distributed all over its surface is called

(a) monotrichous ( )

(b) lophotrichous ( )

(c) amphitrichous ( )

(d) peritrichous ( )

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( 2 )

2. Wine is made by fermentation of grape juice with the help of yeast

(a) *Fusarium solani* ( )

(b) *Saccharomyces cerevisiae* ( )

(c) *Acetobacter aceti* ( )

(d) *Lactobacillus bulgaricus* ( )

3. Chromosomes concerned with the determination of sex are

(a) autosomes only ( )

(b) X-chromosomes ( )

(c) Y-chromosomes ( )

(d) both X-and Y-chromosomes ( )

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( 3 )

4. The gene interaction occurring between the two alleles of a single locus is known as

(a) complementary ( )

(b) duplicate ( )

(c) intergenic ( )

(d) intragenic ( )

5. Hugo de Vries conducted his mutation experiments on

(a) *Homo sapiens* ( )

(b) *Oenothera lamarckiana* ( )

(c) *Pisum sativum* ( )

(d) None of the above ( )

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SECTION—II

( Marks : 15 )

Write short notes on the following :

3×5=15

1. Genetic recombination

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( 5 )

2. Role of microbes for the production of alcoholic beverages

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**3. Cytoskeleton**

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( 7 )

4. Lethal genes

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( 8 )

5. Linkage map

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