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V. (20516)Roll No. ..... B.Sc.(Biotech.)-I Year

## NS-3459

## B. Sc. (Biotechnology) Examination, May 2016

## Genetics

(B-105)

(New)

Time: Three Hours]

[Maximum Marks: 50

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Note: Attempt any Five questions. All questions carry equal marks.

- What do you understand by sex determination? Describe all theories of sex determination in detail, giving examples of each.
- 2. What is the significance of crossing over (which leads to genetic recombination) to the process of evolution? Describe the cytological observations that suggest that crossing over has taken place. 5+5
- What are the three modes of recombination in bacteria? Describe each and distinguish among the three modes of recombination, giving one point for each. 1+6+3

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(4)	Write short notes on the following:
	(a) Barr body 2½
	(b) Polytene chromosomes 2½
	(c) Lampbrush chromosomes $2\frac{1}{2}$
	(d) Pseudoalleles. 2½
5. https://	Describe numerical aberrations of chromosomes with examples studied by you.
nttps://www.ecsustudy.com	What do you understand by mutations? Differentiate between spontaneous and induced mutations.  Describe the role of induced mutations for economic benefit of man.  2+4+4
/.com 7.	(a) What do you understand by "gene"? Give its

- e"? Give its classical and modern concept. 5
  - Describe intra genic crossing over on rII locus in T<sub>4</sub> phage. 5

8	Explain the	following
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- Multiple alleles
- Epistasis. 5

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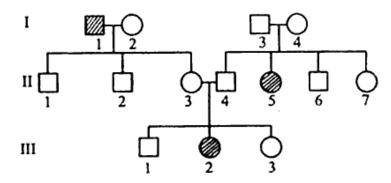
Write short notes on the following:

(a)	Chromosome banding	21/2
(b)	Karyotyping	21/2

(c) Euchromatin and heterochromatin 21/2

(d) Interference of genes. 21/2

10. Define pedigree? The following pedigree shows the inheritance of myopia in humans. By analyzing the given pedigree, predict whether the disorder is inherited as a dominant or recessive trait. Based on your prediction, indicate the most probable genotype of each individual.



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