

12. Define Ageing What are the symptoms of ageing in man ?
13. Describe Necrosis and Apoptosis (programmed cell death). How does it differ from pathological cell death ?

A

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M. Sc. -IV Sem.

**14138(CV)****M. Sc. IVth Semester Examination, June-2020****ZOOLOGY-XIII (d)****(Advanced Cell Biology)****(H-4074)***Time : Two Hours]**[Maximum Marks : 50*

**Note :** Attempt questions from all Sections as per instructions.

**Section-A****(Very Short Answer Type Questions)**

Attempt any *four* questions. Each question carries 2½ marks. Very short answer is required not exceeding 75 words.

 $2\frac{1}{2} \times 4 = 10$ 

1. Receptors.

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2. Cadherins.
3. PCR Technique.
4. Cloning.
5. Desmosomes.

### Section-B

#### (Short Answer Type Questions)

Attempt any *one* question out of the following three questions. Each question carries 10 marks.  
Short answer is required not exceeding 200 words.

10×1=10

6. Cell adhesion molecules (CAMs).
7. Prokaryotic and Eukaryotic genome.
8. Write a short note on FISH and GISH.

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(3)

### Section-C

#### (Long Answer Type Questions)

Attempt any *two* questions out of the following five questions. Each question carries 15 marks.  
Answer is required in detail. 15×2=30

9. Describe the process of signal transduction or (Cell or cell signalling).
10. How does the regulation of gene expression in bacteriophage differ from that in prokaryotes and eukaryotes ?
11. Define circadian rhythms in cells i.e. from suprachiasmatic nucleus and peripheral oscillators and cyanobacteria.

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12. What are morphological and functional elements of eukaryotic chromosomes ?
13. Explain cot curves. Write in detail about chemical and kinetic complexity of genomes.

**A****(20620)****Roll No. ....****M. Sc. -IV Sem.****14139(CV)****M. Sc. IVth Semester Examination, June-2020****ZOOLOGY-XIV (d)****(Chromosome and Genomic Organization)****(H-4075)***Time : Two Hours]**[Maximum Marks : 50*

**Note :** Attempt questions from all Sections as per instructions.

**Section-A****(Very Short Answer Type Questions)**

Attempt any *four* questions. Each question carries 2½ marks. Very short answer is required not exceeding 75 words.

 $2\frac{1}{2} \times 4 = 10$ 

1. What is C-Value Paradox ?

2. Define Nucleolar Organizer.
3. Define mobile DNA.
4. What is genetic imprinting ?
5. What is the significance of X/A ratio ?

### Section-B

#### (Short Answer Type Questions)

Attempt any *one* question out of the following three questions. Each question carries 10 marks. Short answer is required not exceeding 200 words.

10×1=10

6. Write a note on conversion of Prot-oncogenes into oncogenes.
7. Differentiate between sex determination and sex differentiation in mammals.

8. Give an account of molecular structure of an eukaryotic gene.

### Section-C

#### (Long Answer Type Questions)

Attempt any *two* questions out of the following five questions. Each question carries 15 marks.

Answer is required in detail.

15×2=30

9. Give an account of nuclear transplant experiment in amphibians.
10. Write in detail about molecular basis of cellular check points.
11. Write in detail about dosage compensation in heterogametic males.



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12. Give a detailed account of immunoglobulin molecular structure and their diversity.
13. Discuss about the various models of prokaryotic genomes and viral genome.

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**M. Sc. IVth Semester Examination, June-2020**

**ZOOLOGY-XV (d)**

**(Genomic Analysis Immunogenetics)**

**(H-4076)**

*Time : Two Hours]*

*[Maximum Marks : 50*

**Note :** Attempt questions from all Sections as per instructions.

**Section-A**

**(Very Short Answer Type Questions)**

Attempt any *four* questions. Each question carries  $2\frac{1}{2}$  marks. Very short answer is required not exceeding 75 words.  $2\frac{1}{2} \times 4 = 10$

1. Explain Lytic cycle.

2. Define AFLP.
3. Antibody.
4. Karyotype.
5. C-value paradox.

### Section-B

#### (Short Answer Type Questions)

Attempt any *one* question out of the following three questions. Each question carries 10 marks. Short answer is required not exceeding 200 words.

10×1=10

6. Describe the various types of chromosome banding.
7. Give an account of the different known transposons in eukaryotes. How do they differ from transposons in prokaryotes ?

8. Give a detailed account of yeast genome.

### Section-C

#### (Long Answer Type Questions)

Attempt any *two* questions out of the following five questions. Each question carries 15 marks.

Answer is required in detail.

15×2=30

9. What are RFLPs and how do they differ from RAPD and SSRs ? Discuss the relative merits and demerits of RFLPs and RAPDs.
10. What do you understand by prenatal diagnosis ? Discuss the various prenatal screening methods.
11. Describe the history and methods of genetic counselling along with ethical aspects.

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12. What is bacteriophage ? How these are differ from bacteria ? Explain the structure and morphology of T<sub>4</sub> bacteriophage.
13. Explain the process of protein synthesis in eukaryotic cell.

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**M. Sc. -IV Sem.**

**14141(CV)**

**M. Sc. IVth Semester Examination, June-2020**

**ZOOLOGY-XVI (d)**

**(Human and Microbial Cytogenetics and**

**Molecular Biology)**

**(H-4077)**

*Time : Two Hours]*

*[Maximum Marks : 50*

**Note :** Attempt questions from all Sections as per instructions.

**Section-A**

**(Very Short Answer Type Questions)**

Attempt any *four* questions. Each question carries 2½ marks. Very short answer is required not exceeding 75 words.

2½×4=10

(2)

1. Lamp-brush chromosome.
2. Super female.
3. Aminocentasis.
4. Well labelled diagram of leptotene stage.
5. Replication Enzyme.

### Section-B

#### (Short Answer Type Questions)

Attempt any *one* question out of the following three questions. Each question carries 10 marks.  
Short answer is required not exceeding 200 words.

10×1=10

6. Process of transduction in bacteria.

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7. DNA repair.
8. Hetrochromation.

### Section-C

#### (Long Answer Type Questions)

Attempt any *two* questions out of the following five questions. Each question carries 15 marks.

Answer is required in detail. 15×2=30

9. What are giant chromosomes ? Describe the structure and significance of these chromosomes.
10. What is Human Genome Project ? Discuss the gene therapy for the betterment of human future.
11. Write an essay on Genetic code.

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