

**B.Sc. (Part-II) Semester-IV Examination**

**4S : FORENSIC SCIENCE**

**(Forensic Biology)**

Time : Three Hours]

[Maximum Marks : 80

- Note** :— (1) All the questions are compulsory.  
(2) Q. No. 1 carries 8 marks and remaining questions carry 12 marks each.  
(3) Draw neat and well labelled diagrams wherever necessary.

1. (A) Fill in the blanks :

- (I) Which phase of mitosis is associated with chromosomes aligned at the centre of the cell and centromeres divide \_\_\_\_\_ ?  $\frac{1}{2}$   
(II) Viruses that attack bacteria is commonly called as \_\_\_\_\_.  $\frac{1}{2}$   
(III) \_\_\_\_\_ are molecular scissors used in genetic engineering.  $\frac{1}{2}$   
(IV) Mutations which occurs due to mutagenic agents are called \_\_\_\_\_ mutation.  $\frac{1}{2}$

(B) Choose correct alternative from the following :

- (V) Which is the normal role of restriction endonuclease in bacterial cells \_\_\_\_\_ ?  
(a) To degrade bacterial chromosome  
(b) To degrade invading phage DNA  
(c) To produce RNA primers for replication  
(d) All of the above.  $\frac{1}{2}$
- (VI) Footprints are most commonly used for :  
(a) Training the enemies in desert  
(b) Non mixing of infants in hospitals  
(c) Solving of some crimes  
(d) Personal identification.  $\frac{1}{2}$

(VII) Rigormortis appears first in the muscles of :

- (a) Upper limb
- (b) Lower limb
- (c) Face
- (d) Neck

½

(VIII) Mummification occurs when the climate is :

- (a) Dry & hot
- (b) Dry & cold
- (c) Moist & hot
- (d) Moist & cold

½

(C) Answer in **one** sentence each :

(IX) Define vector.

1

(X) Which is the site for protein synthesis in the cell ?

1

(XI) What is the function of thrombocytes in body ?

1

(XII) What is Asphaxia ?

1

2. Describe the following :

- (a) Prokaryotic cell
- (b) Functions of WBC
- (c) Neuromuscular junction

4

4

4

**OR**

3. (p) Functions of Heart

4

(q) Receptor organs

4

(r) Eukaryotic cell (diagram only)

4

4. Explain in detail about :

Punishments for Bioterrorism Act.

12

**OR**

5. Biodefence and Biosurveillance.

12

6. Describe Blotting techniques with their applications. 12
- OR**
7. Discuss ABO blood group system. 12
8. Describe the following :
- (a) Sources of DNA evidence 4
  - (b) Human genome project 4
  - (c) Child swapping 4
- OR**
9. (p) Identification of joint wear and deterioration. 4
- (q) Facial reconstruction 4
  - (r) Forensic significance of DNA profiling 4
10. Describe the following :
- (a) Analysis of pollen 4
  - (b) Algal colonisation 4
  - (c) Powdered minerals and pollens of forensic importance 4
- OR**
11. (p) Techniques for dating specimen using plant material 4
- (q) Life cycle of Blow fly 4
  - (r) Applications of plant ecology 4
12. Explain the following :
- (a) Genetics of ABO system 4
  - (b) Identification of fur, bones and nails by conventional methods 4
  - (c) Census of wildlife population 4
- OR**
13. (p) Genetics of Mn system 4
- (q) Identification of pug marks of Animals 4
  - (r) Confiscated bird goods. 4

