PG/IIIS/ZOO/304.1&304.2/22
(CCAE)(CBCS)

M.Sc. 3rd Semester Examination, 2022

ZOOLOGY

(*Genetics/Haematology*)

PAPER – ZOO-304.1 & 304.2(CCAE)(CBCS)

Full Marks : 40

Time : 2 hours

The figures in the right hand margin indicate marks

Candidates are required to give their answers in their own words as far as practicable

PAPER–ZOO-304.1

(*Genetics*)

1. Answer any *two* questions : 2×2

   (*a*) State Mendel's law with example.

   (*b*) How dosage compensation takes place in Drosophila ?

(*c*) What is Chargaff rule ?

(*d*) Why DNA is more stable than RNA ?

2. Answer any *two* questions : 4×2

(*a*) Write down the difference between complete linkage and incomplete linkage in Drosophila.

(*b*) What are the inheritance patterns of X linked gene ? Give an example of X-linked disease.

(*c*) How many Barr bodies does a woman have ? Why Barr body only found in female ? What does Barr body do ? $1\frac{1}{2}+1\frac{1}{2}+1$

(*d*) What is genetic mapping ? What are the method of genetic mapping ?

3. Answer any *one* question : 8×1

(*a*) What is three point test cross ? How you can calculate the gene distance with the help of three point test cross ?

(*b*) In 1922 CB Bridges showed the ratio between the X chromosome and autosome determines the sex of Drosophila. Describe the Genic balance theory of sex determination in Drosophila.

PAPER–ZOO-304.2

(*Haematology*)

4. Answer any *two* of the following questions : 2×2

(*a*) What do you mean by lymphocytosis and lymphopenia ?

(*b*) Write the functional importance of *B* and *T* lymphocytes.

(*c*) Define and exemplify haemolytic anaemia.

(*d*) Name two physiologically important substances secreted by basophils and state their respective functions.

5. Answer any *two* of the following questions : 4×2

(*a*) Explain how does neutrophils defend against infections ?

(*b*) Discuss the role of platelets in blood coagulation.

(*c*) Classify anaemia on the basis of RBC size variations.

(*d*) State the salient features of haemophilia A and haemophilia B.

6. Answer any *one* of the following questions : 8×1

(*a*) Give an account of the cell division and differentiations found in erythropoiesis in mammals. $6 + 2$

(*b*) State the differences between leucocytosis and leukemia. Describe with suitable illustration how the Philadelphia chromosome originates and causes chronic myeloid leukemia. Name any two chemotherapeutic drugs against this disease. $2 + 5 + 1$
