B.Sc. Part-III (Hons.) Examination, 2020

Subject: Zoology

Paper-IX (New Syllabus)

Full Marks: 50 **Time: 2Hrs**

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

1. *Answer any **four** questions of the following* **5×4=20**

   a) Describe the life cycle of *Ascaris lumbricoides* briefly.
   b) What is artificial insemination? Describe the control measure of rice weevil (*Sitophilus* sp.)
   c) Name two common diseases of silk worm? Name one parasite of silk worm and describe its mode of transmission?
   d) What is ecological mortality? Write exponential population growth with proper explanation?
   e) What is food web? Describe the relation between gross primary productivity and net primary productivity?
   f) Name two critically endangered mammals of India. Explain altruism with proper example?

2. *Answer any **three** questions of the following* **10×3=30**

   a) Explain learned behavior. Explain reciprocation with proper example? What is eusociality?
   b) What do you mean by Umbrella species? Write a short note on "wild life protection act"? What is biopiracy?
   c) What is seral stage? Write inhibition model of succession. Explain the advantage of tropical rain forest.
   d) What is Lindeman's law? Write the types of ecological pyramid with proper diagram? What is nitrification?
   e) In a hospital 100 diabetic patients were found to show different degree of nephropathy. They are divided into four classes based on the severity of disease. Determine whether the inequality in different class is due to severity of disease? ($\chi^2_{0.05(3)} = 7.81$ is given)

Class	I	II	III	IV
Observed frequency	8	15	14	7
				Totall=44

Paper-IX (Old Syllabus)

Full Marks: 50 **Time: 2 Hrs**

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

3. *Answer any **four** questions of the following* **5×4=20**

g) Write the morphological differences between smooth and rough endoplasmic reticulum. Mention the major differences in their function.

h) Write the important morpho-anatomical features of Klinefelter's Syndrome. Write a note on its origin.

i) Describe the role of SRY in sex determination of man. Give the full form of XIC and XIST.

j) What is sex-limited character? Write down the Mendel's law of independent assortment? Explain.

k) Draw and label the secondary structure of tRNA. Who discovered the cloverleaf model of tRNA?

l) Differentiate between normal and cancer cells. Give example of two proto-oncogenes.

4. *Answer any **three** questions of the following* **10×3=30**

f) Describe the detailed structure of fluid mosaic model of Plasma Membrane with proper diagram. Write the role of cholesterol in membrane fluidity.

g) Describe the chromosomal packaging with proper diagram. What is Chromatosome?

h) Describe spliceosome in hnRNA processing.

i) What is semi-conservative replication? Describe the experiment of Meselson and Stahl to show nature of DNA replication with diagram.

j) Write short notes on any two:

i. Restriction endonuclease

ii. Holliday model of crossing over.

iii. Poly-A tailing