

**U.G. 5th Semester Examination - 2021****ZOOLOGY****Course Code : BZOOCCHC502****Course Title : Principles of Genetics**

Full Marks : 30

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.*1. Answer any **ten** questions from the following:

1×10=10

- a) What is Chiasma?
- b) Define test cross.
- c) State the role of Sox gene.
- d) Why is the genetic code a triplet code?
- e) Define frame shift mutation.
- f) Define Gynandromorph.
- g) Define map unit.
- h) What is pleiotropic effect?
- i) State the function of kappa particle.

- j) What is Holiday Junction?
- k) What is thymine dimer?
- l) State the role of synaptonemal complex.
- m) What are SINEs?
- n) What do you mean by lethal alleles?
- o) Indicate the number of Barr bodies in interphase cells of the individuals with – Turner syndrome.

2. Answer any **five** questions from the following:

2×5=10

- a) Differentiate between sex-linked and sex-influenced characters.
- b) What is retroposons?
- c) Distinguish between missense and non-sense mutation.
- d) What is polygenic inheritance?
- e) Differentiate between incomplete dominance and co-dominance.
- f) "Drosophila flies that are XXY are fertile females" – Explain.
- g) Distinguish between composite and non-composite transposons.
- h) Explain Holandric sex linkage.

3. Answer any **two** questions from the following:

5×2=10

- a) Define epistasis. Differentiate between dominant and recessive epistasis. 1+4
- b) Describe the genetic and biochemical basis of PKU.  $2\frac{1}{2} + 2\frac{1}{2}$
- c) Briefly describe the generalized transduction process with suitable diagrams. 5

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