

UNDERGRADUATE SEMESTER-V EXAMINATION, 2021

Subject: Zoology

Course ID: 52612

Course Code.: SH/ZOO/502/C-12

Course Title: Principles of Genetics

Full Marks: 25

Time: 1 Hr 15 Min

The figures in the margin indicate full marks

Answer all the questions.

UNIT I

1.. Answer any five from the following: (1X5=5)

- a. What do you mean by sex influenced trait?
- b. What is incomplete dominance?
- c. Differentiate between epistasis and hypostasis.
- d. What is VNTR?
- e. What is gibberish mutation?
- f. State the function of Sox9 gene.
- g. What is phenocopy?
- h. Differentiate between physical mapping and chromosomal mapping.

UNIT II

2. Answer any two from the following: (5X2=10)

- a. How ABO blood group is related to multiple alleles? What is genetic hitchhiking? (4+1)

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b. In which scenario the Mendelian dihybrid cross ratio 9:3:3:1 is converted to 9:7?
Explain it with suitable example. 5

c. Briefly discuss the role of Sxl in sex determination in *Drosophila sp.* What is gynandromorph?
(4+1)

d. How base analog, tautomeric shift, intercalating agents are responsible for chromosomal
aberration? 5

UNIT III

3. Answer any one from the following: (10X1=10)

a. What do you mean by maternal effect in the inheritance of extranuclear genes?
Explain the phenomenon taking shell coiling in snail as example. (2+8)=10

b. What are transposable elements? Barbara McClintok observed different colours of kernel
in maize. What is the probable reason behind it? Explain it with suitable explanation and
diagram. (2+8)=10

Signature of Moderators _____

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