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JBE-003-1181002

Seat No. _____

M. Sc. (Sem. I) (CBCS) (W.E.F. 2016) Examination

December - 2019

Zoology : ZOOL - 102

(Molecular Biology, Genetics & Evolution)

Faculty Code : 003

Subject Code : 1181002

Time : $2\frac{1}{2}$ Hours] [Total Marks : **70**

1 Answer the following : (any **seven**) **2×7=14**

(a) Explain Gene flow.

(b) What is a punnette square ?

(c) What is cosmozoic theory ?

(d) How does RNA Interference (RNAi) work in gene expression ?

(e) Features of B-DNA.

(f) What is the function of 6 (sigma) subunit of RNA polymerase ?

(g) What is Splicing gene ?

(h) Differentiate: Homozygous and Heterozygous.

(i) What are the features of B-DNA.

(j) Explain: Frame-shift mutation.

2 Answer of the following : (any **two**) **7×2=14**

(a) What is stabilizing selection? Explain with an example.

(b) Explain Urey and Miller's Experiment.

(c) Explain incomplete dominance with an example.

3 Answer the following : **7×2=14**

(a) Importance of DNA methylation in living system ?

(b) Explain linkage of genes through one example.

OR

3 Answer the following : **7×2=14**

(a) Discuss the mechanism of Translation in prokaryotic and eukaryotic.

(b) Antisence m-RNA.

4 Answer the following : **7×2=14**

(a) Write note on Mechanism for DNA repair.

(b) Define induced and spontaneous mutation and their role in evolution.

5 Write notes on the following : (any **two**) **7×2=14**

(a) Write note on Theories of Organic Evolution

(b) Note on structures of nucleic acids

(c) Explain the significance of genetic code in the process of transcription and translation

(d) Explain the Cytoplasmic inheritance with suitable example.