

**U.G. 5th Semester Examination - 2021**

**ZOOLOGY**  
**[HONOURS]**

**Course Code : ZOOL-H-CC-T-11**

Full Marks : 40

Time : 2½ 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 **five** of the following questions :

2×5=10

- a) What is charging of tRNA?
- b) Draw the structure of an operon.
- c) Define alternative splicing and its importance.
- d) Compare the structure of deoxynucleotide and dideoxynucleotide.
- e) Why are eukaryotic genes split?
- f) What is RISC ?
- g) Role of CAP in lac operon.
- h) What is polyadenylation signal?

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

5×2=10

- a) Describe the structure of prokaryotic RNA polymerase. What are the characters of a prokaryotic promoter site? 2+3

b) Name the nucleosides and nucleotides of DNA and RNA. Describe the structure of a dextrogyre DNA. 2+3

c) How can you identify a particular size of DNA from the mixture of other similar molecules? Write the steps of the procedure. 5

d) What are protein synthesis inhibitors? Give the mechanism of action of chloramphenicol and tetracycline as protein synthesis inhibitor. 1+2+2

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

10×2=20

a) Describe pre initiation complex formation in Eukaryotic translation. Describe in brief cap dependent and independent translation in eukaryotes. 5+3+2

b) Describe the process of attenuation in trp operon. Write about General transcription factors of Eukaryotes. 5+5

c) Define RNA priming and role of primosome. What ensures fidelity of replication in *E. coli*? Describe telomere replication process. 1+2+2+5

d) Write a note on pyrimidine dimers. How can they can be repaired? What is SOS repair? 2+4+4