M.Sc-II Botany Semester-IV,
Paper-II, 09/06/2023

[2 ½ Hours] **[Total Marks: 60]**

N.B.: 1) All questions are compulsory.

2) Figures to the right indicate full marks.

3) Draw neat and labelled diagram wherever necessary.

Q 1	Describe the early transcription genes in phage λ.	**12**
	OR	
Q 1	Discuss molecular model of attenuation with reference to trp operon.	**12**
Q 2	Give detailed account of the RNA polymerase II genes promoters and enhancers in eukaryotic gene regulation.	**12**
	OR	
Q 2	Describe the RNA processing in terms of alternative Polyadenylation and alternative Splicing.	**12**
Q 3	With reference to *Drosophila,* explain Pair rule genes and their effect.	**12**
	OR	
Q 3	What are homeotic genes? Describe in short, their role in *Drosophila* embryo development.	**12**
Q 4	What are the different forms of cell signaling?	**12**
	OR	
Q 4	Discuss G- protein coupled receptors.	**12**
Q 5	Write notes on **any three** of the following a) Positive control of ara operon b) Lytic cycle c) mRNA degradation d) Antenapedia complex e) Signal relay pathway f) Quorum sensing	**12**
