



HDU-003-019301

Seat No. _____

**M. Sc. (Microbiology) (Sem. III) (CBCS)
Examination**

November / December - 2017

**Micro - 313 : Genome Organization &
Regulation of Gene Expression
(Old Course)**

Faculty Code : 003

Subject Code : 019301

Time : $2\frac{1}{2}$ Hours]

[Total Marks : 70

Instructions :

All questions are compulsory and carry equal marks. Support your answers with suitable illustrations.

- 1 Answer any seven : (2 marks each) 14**
- (a) What are the nucleosomes ?
 - (b) What is the negative control of the operon ?
 - (c) Explain how lactose acts as inducer in lac operon ?
 - (d) What are the key features of the ara operon ?
 - (e) Comment on the rapid turn on and turn-off regulation.
 - (f) Explain why cAMP is considered as global starvation signal.
 - (g) Comment on YAC.
 - (h) Write the key features of the viroids.
 - (i) What is the lytic cycle of the viruses ?
 - (j) What is the negative control of the operon ?
- 2 Answer any two of the following : (7 marks each) 14**
- (a) Discuss eucaryotic genome organization.
 - (b) Describe genome organization in prokaryotes.
 - (c) What are various junctions of the regulation ? Discuss.

- 3** Write detailed comments on : (7 marks each) **14**
- (a) Comparison of the ara and lac operon.
 - (b) Attenuation control of the transcription.
- OR**
- 3** Answer the following : (7 marks each) **14**
- (a) Discuss positive and negative control of the operon with respect to the starvation signal and inducer.
 - (b) Discuss mutations in lac operon.
- 4** Write comments on : (7 marks each) **14**
- (a) Molecular events in conjugation
 - (b) Transduction.
- 5** Discuss any two of the followings : (7 marks each) **14**
- (a) Lac repressor and its DNA binding action
 - (b) Transposition
 - (c) Prions
 - (d) Lysogeny.
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