



SLR-SA – 35

Set

P

Seat
No.

**B.Sc. – II (Biotechnology) (Semester – IV) (New CBCS)
Examination, 2018
MECHANISMS IN MOLECULAR BIOLOGY**

Day and Date : Friday, 4-5-2018
Time : 10.30 a.m. to 1.00 p.m.

Max. Marks : 70

- Instructions :** 1) *All questions are compulsory.*
2) *Figures to **right** indicate **full** marks.*
3) *Draw **neat** and **labeled** diagrams **wherever** necessary.*

1. Rewrite the following sentences by using correct alternative :

14

- _____ is synthesized by RNA polymerase II.
 - hnRNA
 - snoRNA
 - rRNA
 - U6 snRNA
- Intrinsic termination of transcription is carried out with help of _____ in prokaryotes.
 - Sigma factor
 - Rho factor
 - Pol- α
 - Hairpin loop formation
- During mRNA processing, poly A tail is formed at _____ end of mRNA molecule.
 - Only at 5'
 - Both 5' and 3'
 - Only at 3'
 - None of these
- Ribosome binding site is having _____ sequences.
 - TATAAT
 - T TAGGC
 - AGGAGGU
 - ATGC
- In lactose operon, regulatory protein is encoded from _____ gene.
 - Lac 'a'
 - Lac 'i'
 - Lac 'z'
 - Lac 'y'
- _____ is act as initiator tRNA molecule in eukaryotic translation process.
 - tRNA^{met}
 - tRNA^{fmet}
 - tRNA^{pro}
 - tRNA^{val}

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- v) What is fidelity of translation ?
 - vi) Write a note on introns.
 - vii) Write a note aminoacylation of tRNA.
 - viii) Write a note on CTD domain of RNA polymerase II.
 - ix) What are transcriptional repressors ?
3. A) Answer the following (**any 2**) : **10**
- i) Describe structure and function of ribosome in prokaryotes and eukaryotes.
 - ii) Explain process of transcription termination in prokaryotes.
 - iii) Describe process of translation initiation in eukaryotes.
- B) Explain alternative splicing mechanisms. **4**
4. Answer **any two** of the following : **14**
- i) Describe post-translational modifications in proteins.
 - ii) Describe process of mRNA processing in eukaryotes.
 - iii) Explain structure and regulation of trp operon in bacteria.
5. Answer **any two** of the following : **14**
- i) Describe mechanism of translation in prokaryotes.
 - ii) Explain gene regulation in eukaryotes with suitable examples.
 - iii) Explain mechanism of transcription in eukaryotes.
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