

# The Assam Royal Global University, Guwahati

Royal School of Biosciences  
B.Sc. Biochemistry 5th Semester  
Semester End Examination, January 2022  
Course Title: Gene Expression and Regulation  
Course Code: BCH152C502

Time: 3 Hours

Maximum Marks: 70

**Note: Attempt all questions as per instructions given.**

*The figures in the right-hand margin indicate marks.*

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## Section – A

1. Attempt **all** questions. 2 x 8
- What are the prokaryotic promoters?
  - What is transcription bubble.
  - What are stop codons?
  - What is translation?
  - What is lac operon?
  - What is genetic code?
  - Define RNAi.
  - What is RISC?

## Section – B

2. Answer **any two** of the following questions: 6 x 2
- Write in detail about the initiation, elongation and termination steps of transcription.
  - Write in brief about the post transcriptional modifications.
  - What is inhibition of transcription? Write about the different inhibitors.
3. Answer **any two** of the following questions: 7 x 2
- Discuss the detailed mechanism of RNA editing.
  - Write about the mechanism involved in exon shuffling.
  - What is RNAi? Write about its detailed mechanism.
4. Answer **any two** of the following questions: 7 x 2
- Discuss the ubiquitination process in brief.
  - Write about the different inhibitors of protein synthesis.
  - Write a short note on protein folding.
5. Answer **any two** of the following questions: 7 x 2
- Discuss about an inducing operon.
  - What is SOS mechanism? Write the short note on it.
  - Write a short note on chromatin remodelling.