

SEAT No. _____

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[12]

Sardar Patel University

B.Sc- Semester examination-2018

B.Sc IVth Semester

Subject – Molecular biology-II

Course no. US04EMBI02

Date - 12.04.2018

Time – 2hrs (10AM TO 12PM)

Marks-70

NOTE- Figure in the right indicates marks .

All questions are compulsory. Make necessary diagram wherever needed.

Q.1. Multiple Choice Question (MCQ). Select correct answer from given MCQ. (10marks)

- 1.a Formation of RNA from DNA is called
(A) Replication (B) Transcription
(C) Translation (D) Translesi
- 1.b. mRNA genes are transcribed by
(A) RNA polymerase I (B) RNA polymerase II
(C) RNA polymerase III (D) RNA dependent RNA polymerase
- 1.c. DNA sequence where RNA polymerase can binds commonly called
(A) Promoter (B) Enhancer (C) Terminator (D) Regulator
- 1.d. Capping of mRNA is -----
(A) Post translational modification (B) Post repair modification
(C) Post transcriptional modification (D) Post replicational modification
- 1.e α -aminitin can be used for inhibition of
(A) DNA polymerase (B) RNA Polymerase
(C) Aminoacyl synthetase (D) Telomerase
- 1.f. During translation, the polypeptide chains is synthesized
(A) From C-terminus to N-terminus
(B) From N-terminus to C-terminus
(C) As discrete fragments and then joined
(D) From both C-terminus and N-terminus
- 1.g. Which of the following is not an example of posttranslational chemical modification of proteins?
(A) Glycosylation (B) Methylation
(C) Phosphorylation (D) Proteolysis
- 1.h. Total no of amino acid needed for translation are
(A) 8 (B) 12 (C) 20 (D) 31
- 1.i lac operon was discovered by
(A) Jacob and Monad (B) Watson and Crick
(C) Leaderberg and Tatum (D) Wilkins and Rose
- 1.j . House keeping gene are those that express in
(A) Selected cells (B) All cells
(C) Only somatic cells (D) Only germinal cell

P.T.O

Q.2. Short questions (2 marks each) attempt any ten (2x10=20marks)

- [1] Write notes on requirements of transcription.
- [2] Give the function of sigma factor.
- [3] Differentiate between closed and open promoter.
- [4] Enlist the name of transcriptional inhibitors of eukaryotes.
- [5] What do you mean by rho independent termination?
- [6] What is splicing?
- [7] Write notes on activation of amino acid for translation.
- [8] What is significance of post translational modification?
- [9] Write notes on termination of translation.
- [10] Define gene expression.
- [11] Differentiate between positive and negative regulation of genes.
- [12] What is operon?

Q3.a. Explain the structure of prokaryotic RNA polymerase. [5]

Q3.b. Discuss the process of transcriptional elongation with neat diagram. [5]

OR

Q.3.a. Explain the process of initiation of transcription in prokaryotes. [5]

Q.3.b. Describe the structural components of prokaryotic and eukaryotic promoter. [5]

Q.4.a. Discuss the post transcriptional modification of ribosomal RNA [5]

Q.4.b. Write notes on type and function of eukaryotic RNA polymerase. [5]

OR

Q.4.a. Enlist the fundamental differences between prokaryotic and eukaryotic transcription. [5]

Q.4.b. Write notes on post transcriptional modification of tRNA. [5]

Q.5.a. Enlist and explain the various components essential for translation. [5]

Q.5.b Explain the elongation steps of translation. [5]

OR

Q.5.a. Write notes on chaperons and their role in protein folding. [5]

Q.5.b. Discuss the process for covalent modification of proteins. [5]

6.a. Explain structure of LAC operon with neat diagram. [5]

6.b. Explain constitutive and inducible genes with suitable examples. [5]

OR

6.a. Discuss the process of depression of lac operon with labeled diagram. [5]

6.b. Write notes on catabolic gene activator protein in regulation of lac operon. [5]

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