

SEAT No. _____

No. of Printed Pages : 2

[67]

SARDAR PATEL UNIVERSITY

T.Y.B.Sc EXAMINATION - SEMESTER-V

MICROBIOLOGY – US05CMIC01(Fundamental Molecular Biology)

Date: 24/12/2020

Time: 2:00 PM to 4:00 PM

Day: Thursday

Total marks: 70

N.B: Figures on the right indicate marks.

Q.1 Multiple Choice Questions.

[10]

- 1 Right handed forms of the DNA involves
(a) A form (b) B form
(c) C form (d) All of above
- 2 The processivity of DNA polymerase 3 is
(a) 15000 nucleotides (b) More than 500000 nucleotides
(c) 3-200 nucleotides (d) 5000 nucleotides
- 3 Semiconservative mode of replication was proved by-----
(a) Messalson and Stahl (b) Hershey and Chase
(c) Watson Crick (d) Arther Konberg
- 4 RNA polymerase enzyme contains.....
(a) Two Beta Subunits (b) Two Alpha subunits
(c) Two Gamma Subunits (d) None
- 5 The preference of binding of repressor is.....
(a) Promotor gene (b) Operator gene
(c) Inducer (d) Regulator gene
- 6 The transcription always begins with the addition of
(a) Purine Nucleotide (b) Pyrimidine nucleotide
(c) Any Nucleotide (d) None
- 7 Which of the following are nonsense codons
(a) AUG and GUG (b) UAG and GAU
(c) UAG and UAA (d) AUG and UGA
- 8 In bacterial chromosome the RNA: Protein ratio is _____
(a) 1:1 (b) 3:1
(c) 4:1 (d) 2:1
- 9 More number of proteins are Glycosylated in _____
(a) Eukaryotic cells (b) Prokaryotic cells
(c) Both A&B (d) None
- 10 The sigma factor is a component of
(a) DNA polymerase (b) DNA ligase
(c) RNA polymerase (d) Endonuclease

Q.2 A State whether the given statements are true or false.

[02]

- 1 A nucleoside is made up of Nitrogenous base and sugar
- 2 Pseudo uridine is commonly found in mRNA

B Fill in the blanks with appropriate answer.

[06]

- 1 Arther Konberg discovered _____
- 2 The first genetic code deciphered _____
- 3 Telomerase is an example of _____
- 4 The nucleotide sequence of Pribnow box _____
- 5 Initiation of replication requires a multisubunit protein called _____
- 6 For sealing the gap of DNA strand, DNA ligase uses the energy from _____

Q.3

Give SHORT answers to the following questions. (Attempt Any ten)

[20]

- 1 Describe D form of DNA.
- 2 Draw the structure of AMP
- 3 Explain Chromosome in brief.
- 4 Differentiate mRNA and r RNA.
- 5 Enlist the features of genetic codes
- 6 Describe Ori C in brief.
- 7 Draw structure of Ribosome
- 8 Describe any two points of post translational modification of polypeptide.
- 9 Describe initiation codons.
- 10 Explain the elongation of transcription in brief.
- 11 Draw the structure of Adenine And Cytocin.
- 12 Define Regulon and Operon.

Q.4

Answer the following LONG Question:- (Attempt any four)

[32]

- 1 Explain the Watson and Crick model of DNA
- 2 Describe organization of eukaryotic chromosome in detail.
- 3 Write note on rolling circle model of DNA replication.
- 4 Explain molecular mechanism of initiation and elongation of Prokaryotic DNA Replication
- 5 Discuss the regulation of gene expression citing example of Lac operon.
- 6 Describe the Post transcriptional modification of RNA.
- 7 Define genetic code. Enlist and explain general features of Genetic codes in detail.
- 8 Explain molecular mechanism of elongation of Translation. Write on role of ribosome in Protein Synthesis.

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