

TELANGANA UNIVERSITY
S.S.R. DEGREE COLLEGE, NIZAMABAD (C.C:5029)
III SEMESTER INTERNAL ASSESSMENT I EXAMINATIONS
BIOTECHNOLOGY QUESTION BANK

Fill in the blanks:-

UNIT-I

1. The central dogma of biology was proposed by Crick.
2. Griffith's experiments involving streptococcus pneumonia had to the discovery of Transformation.
3. Definite results proving DNA to be the genetic material was given by Hershey and Chase.
4. The nucleic acid synthesis takes place in 5' to 3' direction.
5. The sudden heritable changes that Mutation in DNA is called mutations.
6. Viruses contain RNA as the genetic material.
7. The GRIFFITH'S experiments are conducted invitro by Avery, McClelland and McCarty.
8. DNA ligase enzyme helps to seal the nicks formed in DNA.
9. The agent that causes mutations is called Mutagen.
10. The replication of lagging strand leads to the synthesis of Okazaki fragments.

UNIT-II

1. The biosynthesis of protein from RNA is called Translation.
2. In prokaryotes the Pribnow sequence present at -10 regions is commonly called Pribnow box.
3. The coding regions of eukaryotic genes are called Exons.
4. The non-coding regions of eukaryotic genes are called Introns.
5. The genetic code is a Triplet code.
6. The site within a promoter where the RNA polymerase binds is Start Point.
7. AUG is an Initiation codon.
8. When σ factor binds to RNA polymerase core enzyme it yields Holoenzyme.
9. The initiation codon AUG codes for Methionine Amino acid in prokaryotes.
10. The downstream elements are designated by '+' symbol.

UNIT-I

Choose the correct answer.

- _____ enzyme binds to SSDNA and prevents it from rewinding (B)
A. DNA Ligase B. SSBP C. DNA Polymerase D. All the above
- Short strands of _____ primer are used in DNA replication (A)
A. RNA B. DNA C. Proteins D. None of these
- The viruses that infect bacteria are known as (B)
A. Virophage B. Bacteriophage C. Phagemid D. Cosmid
- Hershey and Chase labeled DNA with (A)
A. ³²P B. ³⁵S C. Both A & B D. None of these
- Nucleosome solenoid model was proposed by (C)
A. Kornberg B. Thomas C. Both A & B D. None of these

UNIT-II

Choose the correct answer.

- The bacterial RNA polymerase holoenzymes can be symbolized as (B)
A. $\alpha\beta\epsilon$ B. $\alpha_2\beta\beta^{\prime}\sigma$ C. $\epsilon\alpha\beta$ D. None of these
- The synthesis of RNA from DNA is known as (C)
A. Replication B. Translation C. Transcription D. All of the above
- The sequence that is present at -35 region is (B)
A. TATAAT B. TTGACA C. AUG D. ATGC
- Termination of transcription is caused by poly U Tail in _____ termination (B)
A. Rho-dependent B. Rho-independent C. Both D. None
- The sequences that are present on the left side of start point are called (A)
A. Upstream elements B. Downstream elements C. Promoter D. All the above

1. During replication, Okazaki fragments elongate

(a) leading strand towards the replication fork

(b) lagging strand towards the replication fork

(c) leading strand away from the replication fork

(d) lagging strand away from the replication fork

Answer: (d)

2. Which of the following enzymes separates the two strands of DNA during replication?

- (a) Gyrase
- (b) Topoisomerase
- (c) Helicase
- (d) DNA polymerase

Answer: (c)

3. DNA replication is

- (a) conservative
- (b) conservative and discontinuous
- (c) semi-conservative and discontinuous
- (d) semi-conservative and semi-discontinuous

Answer: (d)

4. Which of the following is used in DNA replication studies?

- (a) *Neurospora crassa*
- (b) *Drosophila melanogaster*
- (c) *Escherichia coli*
- (d) *Pneumococcus*

Answer: (c)

5. Which of the following helps in opening of DNA double helix in front of replication fork?

- (a) topoisomerase
- (b) DNA polymerase-I
- (c) DNA gyrase
- (d) DNA ligase

Answer: (c)

6. Termination of replication is triggered by

- (a) DNA polymerase
- (b) Helicase
- (c) SSB
- (d) Tus protein

Answer: (d)

7. DNA polymerase synthesizes

- (a) DNA in 5'-3' direction
- (b) DNA in 3'-5' direction
- (c) mRNA in 3'-5' direction
- (d) mRNA in 5'-3' direction

Answer: (a)

8. Association of histones H1 with nucleosome shows

- (a) the occurrence of transcription
- (b) the occurrence of replication
- (c) exposed DNA double helix
- (d) the condensation of DNA into chromatin fibre

Answer: (d)

9. The 3' – 5' phosphodiester linkage joins

- (a) two DNA strands
- (b) two nucleotides
- (c) a nitrogenous base with pentose sugar
- (d) two nucleosides

Answer: (b)

10. The fragments of DNA are joined together by which of the following enzymes?

- (a) Endonuclease
- (b) DNA polymerase
- (c) Primase
- (d) Ligase

Answer: (d)