

**B.Sc. BIOTECHNOLOGY
THIRD SEMESTER
MOLECULAR BIOLOGY
BBT-301**
[USE OMR FOR OBJECTIVE PART]

2024/11

**SET
A**

Duration: 3 hrs.

Full Marks: 70

Time: 30 min.

Marks: 20

1X20=20

(Objective)

Choose the correct answer from the following:

1. DNA is a long chain of.....
 - a. Amino acids
 - b. Disulphide
 - c. Pentose sugar
 - d. Nucleotides
2.is the weakest bond found in DNA.
 - a. Glycosidic bond
 - b. Amide bond
 - c. Phosphodiester bond
 - d. H bond
3. Eukaryotes have DNA in.....
 - a. Nucleus
 - b. Nucleoid
 - c. Cytoplasm
 - d. Golgi apparatus
4. Nucleic acid is.....
 - a. Basic in nature
 - b. Insoluble in water
 - c. Includes protein
 - d. Soluble in water
5. DNA of eukaryotes is
 - a. Single stranded
 - b. Linear
 - c. Contains histone
 - d. Circular
6. Ori can be opened by.....
 - a. Helicase
 - b. Polymerase
 - c. Ligase
 - d. DNases
7.is responsible for nick in DNA.
 - a. Top I
 - b. Top II
 - c. Top III
 - d. Top IV
8. The replication fork isshaped.
 - a. Y
 - b. X
 - c. Z
 - d. V
9. Hairpin structure is seen during.....
 - a. Replication
 - b. Transcription
 - c. Elongation
 - d. Translation
10. tRNA contains.....
 - a. Codon loop
 - b. Anticodon loop
 - c. Acceptor loop
 - d. rRNA site

11. Both the exonuclease activities are shown by
 - a. Pol III
 - b. Pol I
 - c. Pol IV
 - d. Pol II
12. Removal of primer is done by.....
 - a. DNase
 - b. RNase
 - c. Helicase
 - d. Primase
13. Photolyase isenzyme.
 - a. Antilocking
 - b. Polymerizing
 - c. Light making
 - d. Repair
14. Aminoacyl tRNA synthetase are involved in.....
 - a. Amino acid removal
 - b. Amino acid discharging
 - c. Amino acid deactivating
 - d. Amino acid activation
15. Ethidium bromide is an example of.....
 - a. Pathogen
 - b. Allergen
 - c. Antigen
 - d. Mutagen
16. First amino acid binds at..... Of the ribosome.
 - a. A site
 - b. E site
 - c. Genetic code
 - d. P site
17. Emergency correction is.....
 - a. Nucleotide excision repair
 - b. Base excision repair
 - c. Photo reactivation
 - d. SOS repair
18. Post transcriptional modification is needed for.....
 - a. RNA and DNA
 - b. DNA and protein
 - c. DNA, RNA and protein
 - d. RNA
19. The 5' end of mRNA of eukaryotes is a.....
 - a. A residue
 - b. Tail
 - c. G residue
 - d. Cap
20. Lac operon is.....in nature.
 - a. Constant
 - b. Polymorphism
 - c. Monocistronic
 - d. Polycistronic

(Descriptive)

Time : 2 hrs. 40 min.

Marks : 50

[Answer question no.1 & any four (4) from the rest]

1. Explain Watson and Crick model of DNA? Calculate the number of H bonds in DNA (A=1000, G=800). 6+4=10
2. Explain prokaryotic replication highlighting all the enzymes involved. 10
3. What is transcription? Differentiate it from replication with suitable diagram. 3+7=10
4. What is translation? Explain the translation initiation process. 3+7=10
5. Define mutagen. Write a note on different types of mutations. 3+7=10
6. Write different modes of replication. Explain in detail about the semiconservative mode experiment. 10
7. What is tRNA? Explain its role during translation process. 3+7=10
8. What is a genetic code? Write the characteristics of a genetic code. 2+8=10

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