

SEAT No. _____

No. of Printed Pages : 2

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SARDAR PATEL UNIVERSITY

B Sc V semester Examination December 2020

US05CMIC21 Molecular Genetics

Date: 24-12-2020

Time 2:00 to 4:00PM

Thursday

Total Marks: 70

Q 1

Multiple choice questions:

Answer both code and word compulsorily.

[10]

- The purine nucleotides are formed by binding _____ of pentose sugar.
a) N7 OF purine with C1 of pentose b) N9 OF purine with C1 of pentose
c) N1 OF purine with C2 of pentose d) None of above
- The axial rise distance between two base pairs in D form of DNA is _____.
a) 3.03 b) 3.37 c) 2.5 d) 3.32
- _____ RNA is also known as soluble RNA.
a) rRNA b) mRNA c) tRNA d) hnRNA
- Translation in eukaryotes takes place in _____.
a) Ribosome (b) Chromatine (c) Nucleus (d) cytoplasm
- _____ is the initiation codon in translation
a) AAA/AAA b) AUG/GUG c) CUC/UCU d) none of these
- The 3' end of t-RNA always ends in _____.
a) A-A-C b) C-A-A c) C-C-C d) C-C-A
- _____ mutagen distorts DNA by forming T-T dimer.
a) 5-BU b) U.V. c) high temperature d) X-rays
- A mutation does not affects the phenotype is known as
a) Point b) deletion c) silent d) mis-sense
- _____ invented replica plate technique.
a) Delbrook b) Luria c) Lederberg d) Johannesburg
- Mutation leads to replacement purine to purine is known as _____.
a) transversion b) transition c) termination d) all the option



Q 2

Do as directed.

[08]

Fill in the blank.

- Artificial mutation can be bring about using _____ ..
- _____ enzyme is involved in Reverse Transcription.
- The intraveining sequences present in mRNA which are removed during post transcription modification are known as _____ .
- Mutation occurs normally at time of _____ .

[1]

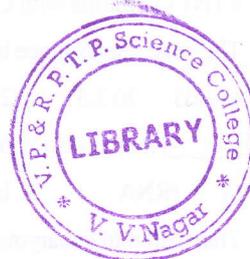
True OR False; It is mandatory to rewrite correct statement if FALSE.

5. ssDNA is commonly found.
6. cAMP plays an important role in regulation of Lac operon.
7. 70s ribosome consist of two subunits 40s and 30s.
8. Visible light can revert/repair the mutation caused by U.V light.

Q 3 Attempt any ten

[20]

1. Write on Z form of DNA
2. Draw labelled diagram of chemical structure DNA
3. Draw a diagram showing replication of linear DNA.
4. Draw labelled diagram of Lac operon.
5. Write on RNA polymerase enzyme.
6. What is Central dogma?
7. Genetic code is triplet-comment
8. Write on activation of amino acids during translation.
9. Genetic code is universal-site suitable example.
10. Give brief idea on Point mutation.
11. How X- rays acts as mutagenic agent?
12. Write in short about missense mutation.



Q 4 Attempt any four

[32]

- 1 Describe the 3 D structure of DNA proposed by Watson and Crick.
- 2 Write in detail on initiation and elongation process of DNA replication in *E coli*.
- 3 Write detail note on tryptophan operon.
- 4 Describe molecular mechanism of transcription.
- 5 Write in detail on post translation modification.
- 6 Describe in detail on t-RNA.
- 7 Write in detail on Ames test
- 8 Give in depth note on isolation of auxotrophic and antibiotic resistant mutants.

————— X —————

[2]