

SEAT No. \_\_\_\_\_

No. of Printed Pages : 2

[68]

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

Q1

**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

Q2

**Do as directed.**

**Fill in the blank.**

[08]

- 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 ]