

B.Sc. Semester - 5 (CBCS) Examination**December -2020 (NEW COURSE)****Molecular Biology and Bio-Engineering(Core)****Time: 1:30 Hours****Marks: 42****Instructions:**

1. Figures to the right indicate marks.
 2. There are five questions in the question paper.
 3. Answer any three of the following questions.
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Q.1 (A) Objective type questions (04)

1. What is exon?
2. Define Replisome
3. What is codominance?
4. Write the contribution of George Beadle and Edward Tatum.

Q.1 (B) Answer in brief (Any one out of two) (03)

1. Explain the any one Mendelian laws of inheritance.
2. Describe Cis-trans complementation test.

Q.1 (C) Write a note on (Any one out of two) (07)

1. Justify "DNA is the universal genetic material"
2. Describe DNA replication in bacteria.

Q.2 (A) Objective type questions (04)

1. What is codon family?
2. Write the role of pribnow sequence in transcription.
3. Define promoter.
4. Write true or false: Transcription rate is slower than DNA replication_____

Q.2 (B) Answer in brief (Any one out of two) (03)

1. Describe ribosome structure and its functions
2. Discuss post translational modifications

Q.2 (C) Write a note on (Any one out of two) (07)

1. Explain regulation of lac operon
2. Tryptophan operon

Q.3 (A) Objective type questions (04)

- 1.What is Pac site?
- 2.Define conjugative plasmids
- 3.What is composite transposon?
- 4.Write the significance of natural transformation

Q.3 (B) Answer in brief (Any one out of two) (03)

1. Explain Abortive transduction
2. Describe Site specific recombination

Q.3 (C) Write a note on (Any one out of two) (07)

1. Homologous recombination
2. Transposable genetic elements

Q.4 (A) Objective type questions (04)

1. What is hypomorphic mutation?
2. Define phenomic lag
3. What do you mean by photoreactivation?
4. Write the difference between nonsense and missense mutations

Q.4 (B) Answer in brief (Any one out of two) (03)

1. Explain Mismatch DNA repair mechanism
2. Describe Spontaneous mutation

Q.4 (C) Write a note on (Any one out of two) (07)

1. Ames test
2. Induced mutation

Q.5 (A) Objective type questions (04)

1. Define Adaptors
2. What is shuttle vector and write its example?
3. What is genomic library?
4. Enlist plasmid vectors

Q.5 (B) Answer in brief (Any one out of two) (03)

1. Describe salient features of ideal vector
2. Explain C-DNA library preparation

Q.5 (C) Write a note on (Any one out of two) (07)

1. Describe steps in gene cloning
2. Cloning vectors
