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BSCmolCC5030

Seat No: _____

B.Sc. Semester - 5 (CBCS) Examination

Oct/Nov. - 2018

MOLECULAR BIOLOGY AND RECOMBINANT DNA TECHNOLOGY (CORE)

Time: 2:30 Hours

Marks: 70

Instructions:

1. All questions are compulsory.
 2. Figures to the right indicate marks.
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Q.1 (A): Answer any one of the following questions. [7]

1. Discuss components of Prokaryotic replication machinery.
2. Write a short note on Automated method of DNA sequencing.

(B) Answer any one of the following questions [4]

1. Give applications of DNA sequencing.
2. With experimental proof explain semi conservative mode of replication.

(C) Answer any three of the following questions [3]

1. Name the scientist who gave Dideoxy method of DNA sequencing.
2. Replication is continuous process. True or False.
3. Give role of enzyme Topoisomerase.
4. Define exonuclease activity.
5. What is Klenow fragment?

Q.2 (A): Answer any one of the following questions . [7]

1. State different stages of transcription and explain in detail about termination in *E.coli*.
2. Discuss in detail about formation of ribosome in eukaryotic cell.

(B) Answer any one of the following questions [4]

1. Why there is no post transcriptional modification in prokaryotes?
2. Give structure and applications of G-Cap in eukaryotes.

(C) Answer any three of the following questions [3]

1. What is Pribnow box?
2. State length of chain of DNA- RNA hybrid during transcription of nucleotides
3. Give role of Rho terminator.
4. Name the virus which has RNA as genetic material.
5. Define Intron.

Q.3 (A): Answer any one of the following questions . [7]

1. State important features of Genetic Code.
2. Briefly explain elongation and termination of translation process.

(B) Answer any one of the following questions [4]

1. Give role of different antibiotics inhibiting Translation process.
2. State role of glucose and lactose in lac operon.

(C) Answer any three of the following questions [3]

1. State role of Dr Khorana in genetic code.
2. Tryptophan works as inducer in Trp operon. True or False.
3. Define Operon.
4. Give role of Shine Dalgarno sequence.
5. If two strands of protein are given, How will you identify which is from *E.coli* and which is from Yeast?

Q.4 (A): Answer any one of the following questions [7]

1. Write a note on Types of Mutagens.
2. Discuss SOS response.

(B) Answer any one of the following questions [4]

1. Give application of liver extract in Ames Test.
2. Why petri dish is covered with black paper after UV treatment to bacterial culture during mutation experiment.

(C) Answer any three of the following questions [3]

1. Define Transversion.
2. What is apurinic site?
3. How is parent DNA protected from Viral DNA during exonucleas activity?
4. Define Silent mutation.
5. State one positive role of mutation.

Q.5 (A): Answer any one of the following questions. [7]

1. Briefly explain role of recombinant technology in field of agriculture.
2. Write a short note on types of conjugation in Bacteria.

(B) Answer any one of the following questions [4]

1. Give applications of different enzymes in Gene cloning.
2. State types and function of Transposons.

(C) Answer any three of the following questions [3]

1. Name the scientist who discovered transposons.
2. Transfer of Naked DNA in Bacteria is _____ process.
3. Give role of att site in bacteria.
4. What does BT stand for in BT cotton?
5. State any one applications of recombinant technology in field of medicine.
