

B.Sc. Semester - 6 (CBCS) Examination
April/May-2022 (NEW COURSE)
Cytogenetics, Molecular - Bio. (Core (New))

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 very shortly (04)
- (1) Give the composition of plant cell wall
 - (2) Which plant cells does not have nucleus?
 - (3) Network shape of chloroplast is observed in which algae?
 - (4) Which organelles having its own DNA.
- Q.1(B) Answer shortly (Any one) (03)
- (1) State the functions of Cell Wall.
 - (2) State the functions of Mitochondria.
- Q.1(C) Answer in detail (any one) (07)
- (1) Describe the ultra structure of "Nucleus"
 - (2) Describe the ultra structure of "Chloroplast"
- Q.2(A) Answer very shortly (04)
- (1) The principle of linkage was discovered by _____ Scientist?
 - (2) Define linkage.
 - (3) Give the law of Hardy-Weinberg
 - (4) How does mutation occurs?
- Q.2(B) Answer shortly (Any one) (03)
- (1) Discuss the characteristics of linkage.
 - (2) Discuss the difference between linkages and crossing over.
- Q.2(C) Answer in detail (Any one) (07)
- (1) Discuss the types of mutation.
 - (2) Write a short note on chromosome mapping.
- Q.3(A) Answer very shortly (04)
- (1) What is polycistronic mRNA?
 - (2) Who gave concept of triplet code?
 - (3) With reference of mRNA what is "cap"?
 - (4) Define : non-sense codon.

- Q.3(B) Answer shortly (Any one) (03)
- (1) In Lac Operon which three enzymes produced by structural genes? give it's functions.
 - (2) What is DNA repair mechanism? Give an examples of various repair mechanisms.
- Q.3(C) Answer in detail (Any one) (07)
- (1) Describe the structure of tRNA
 - (2) Give the sequential steps for isolation of DNA.
- Q.4(A) Answer very shortly (04)
- (1) Taq DNA polymerase enzyme used in gene cloning, is isolated from _____ Bacteria?
 - (2) What is Reverse transcriptase?
 - (3) Letter present in plasmid "pBR322" indicating _____?
 - (4) Ti - plasmid derived from _____ Bacteria?
- Q.4(B) Answer shortly (Any One) (03)
- (1) Discuss the uses of Restriction enzymes.
 - (2) Describe an applications of rDNA.
- Q.4(C) Answer in detail (Any one) (07)
- (1) Discuss GM Plants with an examples and explain any one.
 - (2) Discuss Bacteriophage as a vector in gene cloning
- Q.5(A) Answer very shortly (04)
- (1) Who discovered thin layer chromatography?
 - (2) What do you mean by Columns in chromatography?
 - (3) Give the principle of GC.
 - (4) What is full form of HPLC?
- Q.5(B) Answer shortly (Any one) (03)
- (1) State the applications of TLC.
 - (2) Discuss the gases used in GC.
- Q.5 (C) Answer in detail (Any one) (07)
- (1) Write a note on electrophoresis technique.
 - (2) Write a note on PCR.
