



UNIVERSITY OF THE PUNJAB

B.S. 4 Years Program / Sixth Semester – 2019

Paper: Gene Cloning (Advance Course)

Course Code: BOT-313 Part – I (Compulsory)

Time: 15 Min. Marks: 10

Roll No. in Fig.

Roll No. in Words.

Signature of Supdt.:

ATTEMPT THIS PAPER ON THIS QUESTION SHEET ONLY.

Division of marks is given in front of each question.

This Paper will be collected back after expiry of time limit mentioned above.

Q.1. Encircle the correct choice.

(1x10=10)

1. mRNA can be converted into DNA by
 - a. Hybrid DNA
 - b. Taq DNA Polymerase
 - c. Ribosomal DNA
 - d. Complementary DNA
2. In PCR procedure when DNA hydrogen bonds are broken at 94 °C is called _____.
 - a. Annealing
 - b. Denaturation
 - c. Synthesis
 - d. None
3. At the end of a PCR a sample of the reaction mixture is usually analysed by
 - a. DNA sequencing
 - b. Gene Cloning
 - c. Gel electrophoresis
 - d. Southern Hybridization
4. _____ DNA consists of all the DNA present in a single cell or group of cells.
 - a. Hybrid
 - b. Ribosomal
 - c. Total
 - d. Complementary

P.T.O.

5. A DNA sequence that is able to move from place to place within a genome.
- Template
 - Transposon
 - Transcript
 - Terminator
6. If two plasmids are unable to live in the same bacterial cell they are said to be ____.
- Compatible
 - Conjugative
 - Incompatible
 - None
7. Ethidium bromide is used as a dye to stain DNA in agarose and polyacrylamide gel in following.
- Blotting
 - Finger prints
 - Electrophoresis
 - None
8. Ti plasmid can cause _____ disease.
- Hairy root
 - Proliferation
 - Crown gall
 - Both a and c
9. A virus with an RNA genome is _____.
- Plasmid
 - Episome
 - Retro virus
 - None
10. A thermostable DNA polymerase that is used in PCR is _____.
- Taq DNA polymerase
 - DNA Ligase
 - DNA Polymerase III
 - DNA Topoisomerase



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B.S. 4 Years Program / Sixth Semester – 2019

Roll No.

Paper: Gene Cloning (Advance Course)

Course Code: BOT-313 Part – II

Time: 2 Hrs. 45 Min. Marks: 50

ATTEMPT THIS (SUBJECTIVE) ON THE SEPARATE ANSWER SHEET PROVIDED

Q2: Answer the Following:

(2x10=20)

- i. What is the function of yeast artificial chromosome (YAC)?
- ii. What is the difference between transfection and transformation?
- iii. How 5'-terminus end is different from 3'-terminus end?
- iv. What are exons?
- v. Explain the purpose of Western transfer.
- vi. Give the significance of lambda vector in gene cloning.
- vii. What are linkers?
- viii. What is restriction map?
- ix. What is the purpose of polymerase chain reaction (PCR)?
- x. What are the advantages of high copy number of plasmid in gene cloning?

Q3: Explain the following

(6x5=30)

1. What do you know about role of vectors in gene cloning?
2. What are the basic features of Bacteriophages? Explain the lysogenic cycle of phage virus.
3. Explain briefly about Lambda phage as cloning vector.
4. How Ti plasmid cause crown gall disease in plants? Explain briefly.
5. Write a note on PCR.
6. Explain the role of gene cloning in Agriculture.