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| Seat No. | |
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B.Sc. (Semester - VI) (Old) (CGPA) Examination Oct/Nov-2019
Biotechnology
TOOL AND TECHNIQUES

Day & Date: Monday, 07-10-2019
 Time: 08:00 AM To 10:30 AM

Max. Marks: 70

- Instructions:** 1) All questions are compulsory.
 2) Figures to the right indicate full marks.
 3) Draw neat and labeled diagrams.

Q.1 Fill in the blanks by choosing correct alternatives given below. 14

- 1) _____ % of cellulose present in paper used for paper electrophoresis.
 - a) 95%
 - b) 23%
 - c) 59%
 - d) 81%
- 2) Stacking gel is to _____ Proteins.
 - a) Analyse
 - b) Concentrates
 - c) Distribute
 - d) Separate
- 3) _____ DNA polymerase don't have 5' to 3' exonuclease activity.
 - a) Korenberg
 - b) Kornberg
 - c) Klenow
 - d) Klenew
- 4) _____ used for characterizing large region of chromosome.
 - a) RFLP
 - b) PCR
 - c) RAPD
 - d) Chromosome walking
- 5) In _____ method guanine is methylated by Dimethyl Sulphate.
 - a) Maxam's & Gilbert's
 - b) Automated
 - c) Sangers
 - d) Dideoxy
- 6) Blue-white selection is _____ type of screening method.
 - a) Hybridization
 - b) Indirect
 - c) Immunological
 - d) Direct
- 7) _____ produces Ribonuclease A.
 - a) *P. Putida*
 - b) *A. Niger*
 - c) Bovine pancreas
 - d) Tiger pancreas
- 8) M. Grustein & D. S. Hogness develops _____.
 - a) Southern Hybridization
 - b) Northern Hybridization
 - c) Western Hybridization
 - d) Colony hybridization
- 9) _____ vector is used in both prokaryotes & eukaryotes.
 - a) Shuttle
 - b) Phagemid
 - c) Cosmid
 - d) M13
- 10) DNA fingerprinting based on _____.
 - a) Difference in patterns of genes between individuals
 - b) Difference in junk DNA patterns between individuals
 - c) Difference in order of genes between individuals
 - d) Differences in amount of DNA
- 11) _____ not required for PCR reaction.
 - a) Primer
 - b) Thermostable DNA Polymerase
 - c) ddNTPs
 - d) Template DNA

- 12) What is the natural function of restriction enzymes?
 a) Protecting bacteria by methylating their own DNA
 b) Protecting bacteria by methylating the DNA of infecting viruses
 c) Protecting bacteria by cleaving their own DNA
 d) Protecting bacteria by cleaving the DNA of infecting viruses
- 13) _____ is yeast vector.
 a) YEp
 b) λ gt₁₀
 c) λ gt₁₁
 d) pUC 18
- 14) _____ is First patented cloning vector.
 a) pBR³²⁷
 b) pSC¹⁰¹
 c) pMB¹⁰¹
 d) pUC¹⁸

- Q.2 A) Answer the following questions (Any Four) 08**
 1) Write a note on animal viruses as vector.
 2) Enlist the applications of PCR.
 3) Draw a neat & labeled diagram of pSC 101
 4) Define reverse transcriptase.
 5) Define exonucleases.
- B) Write a note on (Any Two) 06**
 1) Write a note on RNA probes.
 2) Write a note on milestones in Genetic Engineering.
 3) Write a note on cloning from mRNA.
- Q.3 A) Answer the following questions (Any Two) 08**
 1) Explain isoelectrofocussing.
 2) Describe particle gun method of gene transfer.
 3) Discuss YAC vector.
- B) Answer the following questions (Any One) 06**
 1) Explain RAPD.
 2) Discuss agrobacterium mediated gene transfer.
- Q.4 A) Answer the following questions (Any Two) 10**
 1) Explain in details of DNA polymerases.
 2) Describe chemical methods used for direct DNA transfer.
 3) Discuss Basic PCR.
- B) Answer the following questions (Any One) 04**
 1) Write a short note on Dot blot technique.
 2) Describe Klenow fragment.
- Q.5 Answer the following (Any Two) 14**
 a) Discuss Western blotting technique
 b) Describe plant viruses as cloning vector.
 c) Give details of Maxam Gilbert method of DNA synthesis.