DPP
DAILY PRACTICE PROBLEMS

Class : XIIth
Date :

Solutions

Subject : BIOLOGY
DPP No. : 5

Topic :- Biotechnology Principles & Processes

1. The DNA used as a carrier for transferring a fragment of foreign DNA into a suitable host is called
   a) Cloning vector b) Vehicle DNA c) Gene carrier d) All of these

2. The nuclease enzyme, which beings its attack from free end of a polynucleotide, is?
   a) Exonuclease b) Kinase c) Polymerase d) Endonuclease

3. Genetically engineered bacterium used in production of:
   a) Thyroxine b) Human insulin c) Epinephrine d) Cortisol

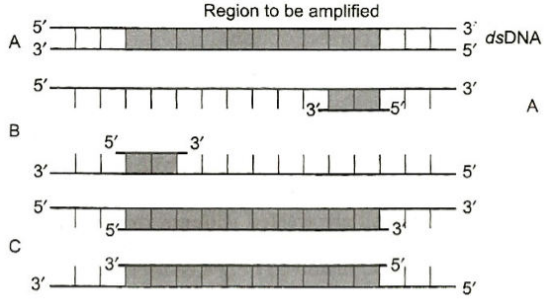
4. In Southern blotting…… is separated by gel electrophoresis:
   a) DNA b) m-RNA c) t-RNA d) Protein

5. Taq polymerase enzyme is found in:
   a) *Thermus aquatecus* b) *E.coli* c) *Pseudomonas* d) *Agrobacterium*

6. The process used for separation of protein in polyacrylamide gel is called:
   a) Southern blotting b) Northern blotting c) Western blotting d) Eastern blotting

7. Which of the following methods(s) is used to introduce foreign DNA into host cells?
   a) Gene gun method b) Gel electrophoresis c) Elution d) Extension

8. The figure shown three steps (A,B,C) of Polymerase Chain Reaction PCR. Select the option giving correct identification together with what represents?



   a) B-denaturation at a temperature of about 98°C separating the two DNA strands
   b) A-denaturation at a temperature of about 50°C
   c) C-extension in the presence of heat stable DNA polymerase

d) A-annealing with three sets of primers

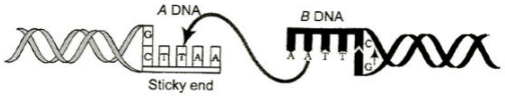
9. DNA fingerprinting method is very useful for:
   a) DNA tests for identity and relationships
   b) Forensic studies
   c) Polymorphism
   d) All of the above

10. Restriction endonucleases are used as:
   a) Molecular build up at nucleotides
   b) Molecular degradation to DNA breakup
   c) Molecular knives for cutting DNA at specific sites
   d) Molecular cement to combine DNA sites

11. After completion of the biosynthetic stage in the bioreactors, the product undergoes. Separation and purification processes, collectively termed as
   a) Transformation
   b) Transduction
   c) Downstream processing
   d) Upstream processing

12. Which of the following should be choosen for best yield if one has to produce a recombinant protein or enzyme on a large scale, using microbial plants/anima/human cell?
   a) Stirred-tank bioreactor
   b) Electrophoresis
   c) Laboratory flask of largest capacity
   d) All of the above

13. Go through the figure and select the option for C and D. Here A and B are taken as vector/plasmid DNA and foreign DNA respectively



	Restriction enzyme recognizing palindrome *C*	**Enzyme joining the sticky ends *D***
a)	*Eco* RI	DNA ligase
b)	DNA ligase	*Eco* RI
c)	Exonuclease	DNA ligase
d)	DNA ligase	Exonuclease

14. Which of the following is known as molecular scissors of DNA?
   a) Ligase
   b) Polymerases
   c) Restriction endonucleases
   d) Transcriptase

15. A kind of biotechnology involving manipulation of DNA is
   a) DNA replication
   b) Genetic engineering
   c) Denaturation
   d) Renaturation

16. Harris and J.F. Watkins in 1965 first time reported the fusion of following cell lines to form hybrids:
   a) Mouse and man
   b) Mouse and hamster
   c) Mouse and click erythrocytes
   d) Mouse and *Drosophila*

17. Polymerase chain reaction employs
    a) Primers and DNA ligase
    b) DNA ligase only
    c) DNA polymerase
    d) Primer and DNA polymerase

18. An antibiotic resistance gene in a vector usually helps in the selection of
    a) Competent cells
    b) Transformed cells
    c) Recombinant cells
    d) None of these

19. The collection of bacteria with gDNA is called:
    a) DNA clones
    b) DNA library
    c) Genomic DNA library
    d) cDNA library

20. Which of the following statements are correct with respect to a bioreactor?
    I. It can process small volume of culture
    II. It provides optimum temperature, pH, salt, vitamins and oxygen
    III. Sparged stirred-tank bioreactor is a stirred type reactor in which air is bubbled
    Choose the correct option
    a) I and II
    b) I and II
    c) II and III
    d) I, II and III