

SEM	SET	PAPER CODE	TITLE OF THE PAPER
II	2014	14PBC2108 / 14PBT2107	RECOMBINANT DNA TECHNOLOGY

**SECTION - A****Answer all the questions:****30 × 1 = 30****Choose the correct answer:**

- A gene produced for recombinant DNA technology contains a gene from one organism joined to the regulatory sequence of another gene. Such a gene is called
  - oncogene
  - junk gene
  - chimeric gene
  - none of the above
- Restriction endonucleases have the ability of cutting
  - DNA at random sites
  - DNA at specific sites
  - both a and b
  - DNA and RNA at random sites
- Which of the following group of enzymes are popularly called “Molecular Stickers”?
  - Restriction endonucleases
  - ligases
  - RNA polymerase
  - DNA polymerase
- An example for an RNA dependant DNA polymerase is \_\_\_\_\_.
  - DNA polymerase
  - Primase
  - RNA polymerase
  - Reverse transcriptase

5. These are advantages of PCR technique except
- a) high rate of amplification
  - b) less time required
  - c) small amounts of test sample is needed
  - d) High rate of errors
6. Restriction endonucleases cut DNA at a specific site called
- a) ligation site
  - b) Ori site
  - c) recognition sequence
  - d) replication site
7. Chromosome walking is a technique used to
- a) move chromosomes around the nucleus
  - b) move a fragment of chromosomal DNA from one area of a chromosome to another
  - c) recombination between chromosomal DNA of two different species
  - d) a method used to locate a gene using a set of clones from a DNA library
8. \_\_\_\_\_ is an example for a recombinant protein used in disease prevention.
- a) HB antigen
  - b) interleukins
  - c) interferons
  - d) insulin
9. Expression vectors are those that
- a) produce protein products
  - b) used for genomic libraries
  - c) used for chromosome synthesis
  - d) used for finger printing

10. Which of the following statements are not attributed to plasmids?
- a) they are circular DNA molecule
  - b) they have antibiotic resistant genes
  - c) they have the ability of autonomous replication
  - d) they have DNA that is as long as chromosomal DNA
11. Plasmids which have no apparent functional coding genes are called
- a) F plasmids
  - b) cryptic plasmids
  - c) degenerative plasmids
  - d) R-plasmids
12. A replacement vector has two restriction sites which flank a region known as
- a) stuffer region
  - b) cos site
  - c) multiple cloning site
  - d) poly linker region
13. Transgenic organisms are
- a) produced by gene transfer technology
  - b) extinct organisms
  - c) naturally occurring and endemic
  - d) produced by traditional plant breeding technique
14. Transfer of recombinant plasmids into *E.coli* cells needs
- a) heat treatment
  - b) UV rays treatment
  - c)  $\text{CaCl}_2$  treatment
  - d) lysis
15. With reference to biotechnology, microinjection is a method of
- a) injecting a solution of DNA into the nucleus of a cell
  - b) injecting nutrients into a culture media
  - c) injecting microbes into cell culture media
  - d) injecting medicines into human beings

16. The technique used to study the transient expression of molecular vectors are
- a) electroporation
  - b) Microinjection
  - c) protoplast fusion
  - d) biolistic transformations
17. Transfection using calcium phosphate was originally done by
- a) Zimmermann
  - b) Klein et al
  - c) Graham and Vander Eb
  - d) Maxam and Gilbert
18. Which of the following act as osmotic buffering agent in protoplast fusion using PEG?
- a) sucrose
  - b)  $\text{CaPO}_4$
  - c) Dextran
  - d) Fructose
19. The technique used to detect the presence of DNA (or) RNA in a non-fractionated DNA sample is
- a) colony hybridisation
  - b) insitu hybridisation
  - c) dot blot technique
  - d) Western blotting
20. Which of the following is used to locate specific genes in chromosomes
- a) colony hybridisation
  - b) insitu hybridisation
  - c) northern blotting
  - d) dot blot technique
21. The colonies of recombinant bacteria appears white in contrast to blue colonies of non-recombinant bacteria because of
- a) insertional inactivation of glycosidase in recombinant bacteria
  - b) insertional inactivation of alpha galactosidase in non-recombinant bacteria
  - c) insertional inactivation of alpha galactosidase in recombinant bacteria
  - d) non-recombinant bacteria containing beta glucosidase

22. If host cells are ampicillin sensitive and are plated on a medium containing ampicillin
- a) only cells that have not taken up the ampicillin resistant vector can grow
  - b) only cells that have taken up the ampicillin resistant vector can grow
  - c) all cells will grow
  - d) ampicillin is inactivated
23. A probe in molecular biology is
- a) an instrument used to manipulate cells in culture
  - b) a DNA or RNA molecule used in hybridisation reactions
  - c) a type of vector system
  - d) probes are not used in molecular biology
24. Southern blotting technique is used in
- a) monoclonal antibody production
  - b) genetic finger printing
  - c) in vitro culture
  - d) polymerase chain reaction
25. Which of the following is the most specific recombinant DNA library?
- a) genomic
  - b) cDNA
  - c) chromosomal
  - d) protein
26. VNTR is a
- a) variable nucleotide triplet repeat
  - b) variable nucleoside tandem repeat
  - c) variable nucleoside triplet repeat
  - d) variable number of tandem repeats

27. A radioactive probe used in DNA finger printing contains
- a)  $^{32}\text{P}$
  - b)  $^{14}\text{C}$
  - c)  $^{12}\text{N}$
  - d)  $\text{P}^{\text{UC 18}}$
28. DNA finger printing was first developed by
- a) David Suzuki
  - b) Khorana
  - c) Alec Jaffreys
  - d) Gilbert
29. Arbitrary primer PCR is the other name for
- a) RFLP
  - b) RAPD
  - c) DNA finger printing
  - d) DNA Foot Printing
30. The vectors used most commonly for the construction of genomic libraries are
- a) phagmids
  - b) plasmids
  - c) cosmids
  - d) shuttle vectors

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