

NEET: Biotechnology

01. *The transfer of gene of interest to organism of interest using a cloning vehicle is called:*
(1) DNA finger printing. (2) Hybridoma technology.
(3) Gene therapy. (4) rDNA technology.
02. *The technique employed to introduce only one or set of desirable genes without introducing undesirable genes into the target organism is:*
(1) Tissue culture. (2) Hybridization.
(3) Mutation breeding. (4) Genetic engineering.
03. *For the multiplication of any alien piece of DNA in an organism, it must be linked with:*
(1) antibiotic resistance gene. (2) DNA sequence called ORI.
(3) RNA primer. (4) both antibiotic resistance gene and Ori DNA.
04. *Which Scientist was first to develop the methods to isolate plasmids and insert them into bacterium?*
(1) Herbert Boyer (2) Stanley Cohen.
(3) Hamilton Smith. (4) Paul Berg.
05. *Restriction enzymes are commonly called:*
(1) Cloning vehicles (2) Cloning factories
(3) Molecular Scalpels. (4) Molecular stickers.
06. *The DNA sequences showing two-fold symmetry or reverse repeats are called:*
(1) Pangeses. (2) Palindromes.
(3) Phasmids. (4) Cosmids.
07. *Gel electrophoresis is used for:*
(1) DNA fragmentation. (2) DNA fragments separation.
(3) DNA fragments fusion. (4) DNA transfer to nylon membrane.
08. *Indicate the incorrect statement for Plasmids:*
(1) extra chromosomal bacterial DNA.
(2) replicates independently inside the bacterial cell.
(3) used as vectors in Genetic engineering.
(4) double stranded linear DNA .
09. *In rDNA technology, the plasmid vector must be cleaved by:*
(1) Specific restriction enzymes. (2) Same REN that cleaves the donor DNA.
(3) DNA ligase. (4) DNA polymerase.
10. *Which one among the following is not a REN?*
(1) pBR-322. (2) Eco-RI. (3) Bam-HI. (4) Hind-III.

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11. Select the WRONG statement:
- (1) DNA fragments are negatively charged molecules.
 - (2) Ethidium bromide stained DNA fragments can be seen with naked eye.
 - (3) The extraction of DNA fragments from gel piece is called elution.
 - (4) Agarose gel is a natural polymer extracted from seaweed.
12. *The plasmids preferred for easy linking of foreign DNA and selection of recombinants from non-recombinants are:*
- (1) Natural plasmids with high copy number.
 - (2) Natural plasmids with low copy number.
 - (3) Engineered plasmids with more sites for a REN.
 - (4) Engineered plasmids with single site for a REN.
13. *A foreign DNA was ligated at the BamH 1 site of tetracycline resistance gene in the vector pBR322 and successfully transferred into a bacterial cell. The transformed bacteria with recombinant DNA will be:*
- (1) resistant to both ampicillin and tetracycline.
 - (2) resistant to tetracycline only.
 - (3) sensitive to both ampicillin and tetracycline.
 - (4) sensitive to tetracycline only.
14. *The rDNA having human gene was successfully inserted into the bacteria but the transformed cells failed to produce the desired protein. What could be the reason?*
- (1) failure at transcription level.
 - (2) Inability to process HnRNA.
 - (3) Absence of 80s RNA.
 - (4) Lengthy human gene.
15. *T1 Plasmid used in genetic engineering has been modified by:*
- (1) adding tumour forming genes.
 - (2) removing tumour forming genes.
 - (3) adding genes for endonuclease.
 - (4) removing genes for endonuclease.
16. *In bacterial transformation the bacterial cells are made 'competent' to take up rDNA by:*
- (1) exposing them briefly to heat shock.
 - (2) treating them with divalent cations.
 - (3) incubating the cells on ice.
 - (4) adding antibiotics to the media.
17. *Nucleus of a donor somatic cell is transferred to an enucleated egg cell. The organism formed from such an egg will have*
- (1) extra-nuclear genes of donor cell.
 - (2) extra-nuclear genes of recipient cell.
 - (3) extra-nuclear genes of both donor and recipient cell.
 - (4) nuclear genes of recipient cell.

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18. *Introducing DNA by a method involving particle bombardment is called*
- (1) Microinjection (2) Biolectics
(3) Gene therapy (4) Electrophoresis
19. *In order to extract DNA, the bacterial cells are opened by treating with enzymes:*
- (1) Cellulase. (2) Pectinase.
(3) Lysozymes. (4) Chitinase.
20. *The bacterial source of enzyme Taq polymerase, which is widely used in PCR for in-vitro DNA amplification, is*
- (1) *Escherichia coli* (2) *Agrobacterium tumefaciens*
(3) *Thermus aquaticus* (4) *Rhizobium*
21. *The advantage of continuous culture system is large scale production of biomass leading to higher yield of desired proteins. It is achieved by:*
- (1) keeping nutrient medium unchanged to minimize stress to cell under culture.
(2) changing nutrient medium to maintain cells in their log phase.
(3) maintaining small volume cultures for effective utilization of nutrients and minimum stress.
(4) keeping nutrient medium unchanged with optimal conditions.
22. *Specific BT toxin genes used from Bacillus thuringiensis to control the cotton bollworms is/are:*
- (1) cryIAC and cryIIAb. (2) cryIAB and cryIIAC.
(3) cryIIAB and cryIIAC. (4) cryIAb and cryIAC.
23. *In RNAi, genes are silenced using:*
- (1) ss DNA (2) ds DNA (3) ds RNA (4) ss RNA
24. *The number of disulphide bonds found in functional insulin are:*
- (1) 'One' between A and B polypeptide.
(2) 'Two' between A and B polypeptide.
(3) 'One' in A polypeptide and 'Two' between A and B polypeptide.
(4) 'One' in B polypeptide and 'Two' between A and B polypeptide.
25. *The cells and the vector used in the first clinical gene therapy is:*
- (1) Cells: Lymphoblasts from Bone marrow; Vector –Retrovirus.
(2) Cells: Lymphocytes from bone marrow; Vector – Agrobacterium
(3) Cells: Lymphocytes from bone marrow; Vector – Agrobacterium
(4) Cell: Lymphocytes from blood; Vector – Retrovirus.

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26. *The trigger for activation of toxin of Bacillus thuringiensis is*
- (1) Acidic pH of stomach. (2) High temperature.
(3) Alkaline pH of gut. (4) Mechanical action in the insect gut.
27. *The first transgenic cow that produced human protein enriched milk is:*
- (1) Rosie. (2) cc
(3) Andi (4) Dolly.
28. *Transposons are:*
- (1) DNA vectors. (2) Genetically modified organisms.
(3) Mobile genetic elements. (3) Insecticidal proteins secreted by Bacillus strains.
29. *The organization set up by Indian government to make decision regarding the validity of GM research and the safety of introducing GM crops for public service is:*
- (1) DOE (2) NIH
(3) GEAC (4) EFB
30. *A human recombinant protein used for treating emphysema is:*
- (1) alpha lactalbumin. (2) alpha lactglobulin.
(3) Humulin. (4) alpha 1 antitrypsin.
31. *The use of bioresources by the companies and other organizations without proper authorization from the countries and people concerned is called:*
- (1) Biopatent (2) Bio-war
(3) Biopiracy. (4) Quarantine.
32. *The enzyme Taq polymerase in PCR helps in:*
- (1) DNA denaturation.
(2) annealing of Primer.
(3) extension of Primers.
(4) Primer annealing and extension of Primers.