

## Biotechnology

1. **The negative impact of GM plants is** [     ]
  - 1) Harmful effect on biodiversity
  - 2) Over production of vegetables
  - 3) Quick evolution
  - 4) Low cost agricultural products
2. **Cohen's contribution to biotechnology is** [     ]
  - 1) Development of techniques of DNA isolation
  - 2) Discovery of Restriction enzymes
  - 3) Isolation and transfer of plasmids into other cells.
  - 4) Artificial synthesis of Insulin
3. **Enzymes used in genetic engineering** [     ]
  - 1) Endonuclease
  - 2) Exonuclease
  - 3) Ligase
  - 4) All the above
4. **Gel electrophoresis in genetic engineering is used in** [     ]
  - 1) Identifying the DNA
  - 2) Isolation of DNA from other cell organelles.
  - 3) Separation of DNA fragments
  - 4) Insertion of DNA
5. **Assertion A: Restriction enzymes are used in genetic engineering.** [     ]  
**Reason R: They cut DNA at specific sites producing complementary sticky ends.**
  - 1) Both A, R are true and R is the correct explanation of A.
  - 2) Both A, R are true but R is not the correct explanation of A.
  - 3) A is true, R is false
  - 4) A is false, R is true
6. **True statement regarding a DNA introduced into another organism other than its own origin is** [     ]
  - 1) Replicate in the organism on its own.
  - 2) Can express in another organism
  - 3) Digested as it is alien to the new organism
  - 4) The DNA is always incorporated into the genome of new organism
7. **Artificial plasmids are advantageous in** [     ]
  - 1) Cleavage with many restriction enzymes.
  - 2) Screening for chimeras
  - 3) In producing relaxed replication forms.
  - 4) All the above.
8. **Bacterium used in producing transgenic plants.** [     ]
  - 1) *Bacillus thuringiensis*
  - 2) *Bacillus subtilis*
  - 3) *Escherichia coli*
  - 4) *Agrobacterium tumefaciens*.

- 9. Transgenic potatoes are resistant to** [      ]  
1) *Phytophthora*                  2) *Pseudomonas*        3) Cold and drought    4) Bacterial rot

**10. *Agro bacterium* shows** [      ]  
1) T plasmid                  2) S plasmid                  3) G plasmid                  4) Ti plasmid

**11. Sticky ends always** [      ]  
1) Palindromes                  2) Single strands        3) Identical                  4) Complementary

**12. ‘Flavr Savr’ is** [      ]  
1) A gene for flavour                  2) Bruise resistant tomato variety  
3) Technique in genetic engineering        4) Fungus resistant potato variety

**13. In EcoRI, ‘R’ Indicates** [      ]  
1) Genus                          2) Species  
3) Number of plasmid                  4) Type of bacterium

**14. Golden rice ‘Taipai’ is rich in** [      ]  
1) Vitamin B                  2) Vitamin A                  3) Vitamin C                  4) Vitamin K

**15. Antibiotic resistant genes in the plasmids are useful in genetic engineering in** [      ]  
1) Screening recombinants                  2) Producing antibiotic resistant’s  
3) Producing antibiotic resistance substances        4) Insertion of foreign DNA

**16. The first recombinant DNA was constructed by** [      ]  
1) Cohen and Boyer                  2) Norman Borlaug  
3) Bolivar and Rodriguez                  4) Eli Lilly

**17. Isolation of gene from plant cells require** [      ]  
1) Cellulase                  2) EDTA                  3) Lysozyme                  4) Detergent

**18. ‘Ori’ is** [      ]  
1) Strain of Escherechia coli                  2) Restriction enzyme from *Agrobacterium*  
3) Technique in genetic engineering        4) Sequence of DNA responsible for replication

**19. In ECo RI, ‘Co’ indicates** [      ]  
1) Type of bacterium                  2) Plasmid  
3) Species of bacterium                  4) Variety of bacterium

**20. Gene gun method is used in** [      ]  
1) Method to introduce DNA into host                  2) Digesting unwanted gene  
3) Sequencing the DNA molecule                  4) Technique of multiplication of DNA

21. **To Isolate DNA, chromosomes should be treated with** [     ]  
1) Protease                      2) Lipase                      3) Nuclease                      4) Isomerase
22. **Property of an ideal cloning vector in genetic engineering** [     ]  
1) Vector should be large enough to carry long DNA fragments  
2) Many restriction sites for any single restriction enzyme  
3) Only single restriction site for many restriction enzymes  
4) It must be with very high molecular weight.
23. **Sequence of DNA that is palindromic** [     ]  
1) 5' AGC CGA3'    2) 5' AAG CTT3'    3) 5' TAC CAT3'    4) 5' AAT AAT3'
24. **In a linear stretch of DNA if two restriction sites are present for a restriction enzyme it forms** [     ]  
1) Two pieces                      2) One piece                      3) Three pieces                      4) Four pieces
25. **The most time consuming process in genetic engineering is** [     ]  
1) Isolation of desired gene                      2) Introduction into suitable vector  
3) Gene cloning                      4) Screening of recombinants DNA
26. **pUC 19 is** [     ]  
1) Type of bacteria                      2) Artificial plasmid  
3) Natural plasmid of yeast                      4) Restriction enzyme
27. **Roundup ready soybean is** [     ]  
1) Herbicide tolerant                      2) Pods are round and inflated  
3) Soybean with reduced maturing time                      4) Soy bean with high protein
28. **Type of restriction enzyme most useful in genetic engineering** [     ]  
1) That cuts DNA resulting in blunt ends                      2) That cuts DNA with inverse repeats  
3) That cuts DNA indiscriminately                      4) That cuts DNA with staggered ends.
29. **Assertion (A): Restriction endonucleases are called as molecular scissors** [     ]  
**Reason (R): They cut DNA molecule at specific sites**  
1) Both A and R are true and R is the correct explanation of A.  
2) Both A and R are true and R is not the correct explanation of A.  
3) A is true but R is false  
4) A is false but R is true
30. **In PCR the DNA polymerase used is extracted from** [     ]  
1) *Bacillus thuringiensis*                      2) *Thermus aquaticus*  
3) *Escherichia coli*                      4) *Salmonella typhimurium*

31. **Polymerase chain reaction (PCR) is a technique of** [     ]  
1) Gene insertion                      2) Gene Isolation  
3) Gene multiplication              4) Gene sequencing
32. **Bt cotton is resistant to** [     ]  
1) Viruses                      2) Insects                      3) Fungi                      4) Herbicides
33. **Eco RI cuts DNA between** [     ]  
1) G and A followed by TCC  
2) G and A followed by ATTC towards 3' end  
3) G and A preceded by ATTC towards 5' end  
4) G and A followed by ATTC towards 3' end on both strands
34. **Assertion (A): pBR 322 is a popular vector in genetic engineering** [     ]  
**Reason (R): It can be inserted into any organism**  
1) Both A and R are true and R is the correct explanation of A.  
2) Both A and R are true and R is not the correct explanation of A.  
3) A is true but R is false  
4) A is false but R is true
35. **In PCR, starting of chain elongation requires** [     ]  
1) Primers                                      2) DNA polymerase  
3) Heat shock                                  4) Chilling temperatures
36. **Use of taking DNA finger prints of criminals is** [     ]  
1) Criminals leave DNA finger prints at the site of crime  
2) DNA sequences of any two persons are not identical  
3) DNA finger prints of criminals are different from innocents  
4) c DNA can be produced from DNA of criminals
37. **Male sterility is induced by genetic engineering in** [     ]  
1) *Carica papaya*                      2) *Brassica napus*                      3) *Lycopersicon*                      4) *Brassica nigra*
38. **'Colony hybridization' is** [     ]  
1) A mass hybridization technique                      2) A technique in screening of gene  
3) A cloning method                                      4) Multiplication of transformed cells
39. **Pumping of sterile air in bubbles in a bioreactor helps in** [     ]  
1) Stirring    2) Increased availability of oxygen  
3) Increased surface area for oxygen transfer                      4) All the above

40. Type of restriction enzyme most useful in genetic engineering [     ]

- 1) That cuts DNA on only one strand
- 2) That cuts both strands of DNA resulting in repeated inverts
- 3) That attaches RNA & DNA
- 4) That cuts DNA on both strands resulting in blunt ends.

### Biotechnology

1	2	3	4	5	6	7	8	9	10	11	12	13	14	15	16	17	18	19	20
1	3	4	3	1	2	4	4	1	4	4	2	4	2	1	1	1	4	3	1
21	22	23	24	25	26	27	28	29	30	31	32	33	34	35	36	37	38	39	40
1	3	2	3	4	2	1	2	1	2	3	2	4	3	1	2	2	2	4	2