

TELANGANA UNIVERSITY
S.S.R. DEGREE COLLEGE, NIZAMABAD (C.C:5029)
III SEMESTER INTERNAL ASSESSMENT II EXAMINATIONS
BIOTECHNOLOGY QUESTION BANK

1. Restrictionenzymeswerediscoveredby
 - a. SmithandNathans
 - b. AlexanderFleming
 - c. Berg
 - d. None

2. Bacteriaprotect themselvesfromvirusesbyfragmentingviralDNAwith
 - a. Ligase
 - b. Endonuclease
 - c. Exonuclease
 - d. Gyrase

3. Klenowfragmentisderivedfrom
 - a. DNALigase
 - b. DNAPol-I
 - c. DNAPol-II
 - d. ReverseTranscriptase

4. Southernblottingis
 - a. Attachment ofprobestoDNAfragments
 - b. TransferofDNAfragmentsfromelectrophoreticgeltoanitrocellulosesheet
 - c. ComparisonofDNAfragmentstotwosources
 - d. TransferofDNAfragmentstoelectrophoreticgelfromcellulosemembrane

5. ELISAis
 - a. Usingradiolabelledsecondantibody
 - b. UsageofRBCs
 - c. Usingcomplement-mediatedcelllysis
 - d. Additionofsubstratethatisconvertedintoacolouredendproduct

6. TheGoldenRicevarietyisrichin
 - a. VitaminC
 - b. B-caroteneandferritin

- c. Biotin
- d. Lysine

7. The DNA fragments have sticky ends due to

- a. Endonuclease
- b. Unpaired bases
- c. Calcium ions
- d. Free methylation

8. Plasmids are used as cloning vectors for which of the following reasons?

- a. Can be multiplied in culture
- b. Self-replication in bacterial cells
- c. Can be multiplied in laboratories with the help of enzymes
- d. Replicate freely outside bacterial cells

9. The human genome project was launched in the

- a. 1980
- b. 1973
- c. 1990
- d. 1989

10. The vaccines prepared through recombinant DNA technology are

- a. Third generation vaccines
- b. First-generation vaccines
- c. Second-generation vaccines
- d. None

11. Which is a genetically modified crop?

- a. Bt-cotton
- b. Bt-brinjal
- c. Golden rice
- d. All

12. PCR technique was invented by

- a. Kary Mullis
- b. Boyer
- c. Sanger
- d. Cohn

13. The first transgenic plant to be produced is

- a. Brinjal
- b. Tobacco

- c. Rice
- d. Cotton

14. RNA interference helps in

- a. Cell proliferation
- b. Micropropagation
- c. Cell defence
- d. Cell differentiation

15. Which of the following is the quality of improved transgenic basmati rice?

- a. Gives high yield but no characteristic aroma
- b. Gives high yield and is rich in vitamin A
- c. Does not require chemical fertilizers and growth hormones
- d. Resistant to insects and diseases

16. The first clinical application of gene therapy over a 4 year old girl was for

- a. Adenosine deaminase deficiency
- b. Adenosine deficiency
- c. Growth deficiency
- d. Adenine deficiency

17. Excision and insertion of a gene is called

- a. Biotechnology
- b. Genetic engineering
- c. Cytogenetics
- d. Gene therapy

18. The expression of a transgene in the target tissue is identified by a

- a. Transgene
- b. Promoter
- c. Enhancer
- d. Reporter

19. _____ is used as a vector for cloning into higher organisms

- a. Retrovirus
- b. Baculovirus
- c. *Salmonella typhimurium*
- d. *Rhizopus nigricans*

20. Which bacterium is used in the production of insulin by genetic engineering?

- a. *Saccharomyces*
- b. *Rhizobium*

- c. *Escherichia*
- d. *Mycobacterium*

21. The Taq polymerase enzyme is obtained from
- a. *Thermusaquaticus*
 - b. *Thiobacillusferrooxidans*
 - c. *Bacillusubtilis*
 - d. *Pseudomonassubtilis*
22. Which of the following is an endonuclease?
- a. DNase I
 - b. HindII
 - c. Protease
 - d. RNase restriction
23. Which of the following restriction enzymes produce blunt ends?
- a. HindIII
 - b. Xho
 - c. EcoRV
 - d. Sall
24. Which of the following is not a component of downstream processing?
- a. Expression
 - b. Preservation
 - c. Purification
 - d. Separation
25. A foreign DNA and plasmid cut by the same restriction endonuclease can be joined to form a recombinant plasmid using
- a. Taq polymerase
 - b. Polymerase III
 - c. Ligase
 - d. Eco RI
26. DNA fragments separated on an agarose gel can be visualized after staining with _____
- a. ethidium bromide
 - b. bromophenol blue

- c. acetocarmine
- d. anilineblue

27. A gene whose expression helps to identify transformed cells is known as _____

- a. Plasmid
- b. Selectable marker
- c. Structural gene
- d. vector

28. A single strand of nucleic acid tagged with a radioactive molecule is called

- a. Plasmid
- b. Probe
- c. selectable marker
- d. Vector

29. There is a restriction endonuclease called EcoRI. What does 'co' part in it stand for?

- a. Coli
- b. Colon
- c. Cofactor
- d. None of the above

30. Plasmids and _____ have the ability to replicate within bacterial cells independent of the control of chromosomal DNA.

- a) bacteriophages
- b) fragments
- c) bacteria
- d) clones

View Answer

Answer: a.

31. The sequence of DNA from where replication starts is called _____

- a) selectable marker
- b) origin of replication
- c) ter sequence
- d) genetic sequence

View Answer

Answer: b

32. Viruses which infect bacteria are called _____

- a) bacteria
- b) archaea
- c) pUC
- d) bacteriophages

[View Answer](#)

Answer: d

33. What helps in identifying the successful transformants?

- a) Ori
- b) Viruses
- c) Selectable markers
- d) Enzymes

[View Answer](#)

Answer: c

34. Selectable markers are the genes which code for resistance to _____

- a) disease
- b) phages
- c) antibiotics
- d) foreign entity

[View Answer](#)

Answer: c

35. The process by which a foreign DNA is introduced into bacteria is called _____

- a) amplification
- b) transformation
- c) infection
- d) digestion

[View Answer](#)

Answer: b.

36. _____ is an example of antibiotic.

- a) Virus
- b) Restriction endonuclease
- c) RNA
- d) Kanamycin

[View Answer](#)

Answer: d.

37. Insertion of recombinant DNA within the gene encoding for β -galactosidase leads to _____

- a) amplification
- b) transformation
- c) insertional inactivation
- d) cloning

[View Answer](#)

Answer: c

38. What may complicate the process of gene cloning within the cell?

- a) One recognition site
- b) Foreign DNA
- c) More than one recognition site
- d) Antibody

View Answer

Answer: c

39. Which organism can transfer 'T-DNA' within plants?

- a) *Agrobacterium tumifaciens*
- b) *E.coli*
- c) *Aspergillusniger*
- d) *S. typhi*

View Answer

Answer: a

40. Which plasmid of *Agrobacterium tumifaciens* leads to tumor formation in dicots?

- a) F plasmid
- b) Ti
- c) pUC
- d) pBR

View Answer

Answer: b

Short Answers

1. What are Restriction enzymes?
2. What are plasmids?
3. What is Genetic Engineering?
4. What is PCR?
5. What is Southern blotting?

AnswerKey

1-a	2-b	3-b	4-b	5-d	6-b	7-b	8-b	9-3	10-a
11-d	12-a	13-b	14-c	15-b	16-a	17-b	18-d	19-a	20-c
21-a	22-b	23-c	24-a	25-c	26-a	27-b	28-b	29-a	

