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

1. Restrictionenzymesworediscoveredby

   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. TheDNA fragmentshavestickyendsdueto

a. Endonuclease
b. Unpairedbases
c. Calciumions
d. Freemethylation

8. Plasmidsareusedascloningvectorsforwhichofthefollowingreasons?

a. Canbemultipliedinculture
b. Self-replicationinbacterialcells
c. Canbemultipliedinlaboratorieswiththehelpofenzymes
d. Replicatefreelyoutside bacterial cells

9. Thehuman genomeprojectwaslaunchedinthe

yeara.1980
b.1973
c. 1990
d.1989

10. ThevaccinespreparedthroughrecombinantDNAtechnologyare

a. Thirdgenerationvaccines
b. First-generationvaccines
c. Second-generationvaccines
d. None

11. Whichisageneticallymodifiedcrop?

a. Bt-cotton
b. Bt-brinjal
c. Goldenrice
d. All

12. PCRtechniquewasinventedby

a. KarryMullis
b. Boyer
c. Sanger
d. Cohn

13. Thefirsttransgenicplanttobeproducedis

a. Brinjal
b. Tobacco

c. Rice
d. Cotton

14. RNAinterferencehelpsin

a. Cellproliferation
b. Micropropagation
c. Celldefence
d. Celldifferentiation

15. Whichofthefollowingisthequalityofimprovedtransgenicbasmatirice?

a. Giveshighyieldbutnocharacteristicaroma
b. Giveshighyieldandisrichinvitamin A
c. Doesnotrequirechemicalfertilizersandgrowthhormones
d. Resistanttoinsectsanddiseases

16. Thefirstclinicalapplicationofgenetherapyovera4yearoldgirlwasfor

a. Adenosinedeaminasedeficiency
b. Adenosinedeficiency
c. Growthdeficiency
d. Adeninedeficiency

17. Excisionandinsertionofa geneiscalled

a. Biotechnology
b. Geneticengineering
c. Cytogenetics
d. Genetherapy

18. Theexpressionofatransgeneinthetargettissueisidentifiedbya

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

19. ————isusedasavectorfor cloninginto higherorganisms

a. Retrovirus
b. Baculovirus
c. *Salmonellatyphimurium*
d. *Rhizopusnigricans*

20. Whichbacterium isusedintheproductionofinsulinbygenetic engineering?

a. *Saccharomyces*
b. *Rhizobium*

c. *Escherichia*
d. *Mycobacterium*

21. TheTaqpolymerase enzymeisobtainedfrom

a. Thermusaquaticus

b. Thiobacillusferrooxidans

c. Bacillussubtilis

d. Pseudomonassubtilis

22. Whichofthefollowingisanendonuclease?

a. DNase I

b. HindII

c. Protease

d. RNaserestriction

23. Whichofthefollowingrestrictionenzymesproducebluntends?

a. HindIII

b. Xho

c. EcoRV

d. SalI

24. Whichofthefollowingisnotacomponentofdownstreamprocessing?

a. Expression

b. Preservation

c. Purification

d. Separation

25. Aforeign DNAandplasmidcutbythesamerestrictionendonucleasecanbejoinedtoform arecombinantplasmidusing

a. Taqpolymerase

b. PolymeraseIII

c. Ligase

d. Eco RI

26. DNAfragmentsseparatedonanagarose gelcanbevisualizedafterstainingwith_____

a. ethidiumbromide

b. bromophenolblue

c. acetocarmine

d. anilineblue

27. Agenewhoseexpressionhelpstoidentifytransformedcellsisknownas_____

a. Plasmid

b. Selectablemarker

c. Structuralgene

d. vector

28. Asinglestrandofnucleicacidtaggedwitharadioactivemoleculeiscalled

a. Plasmid

b. Probe

c. selectablemarker

d. Vector

29. Thereisarestriction endonucleasecalledEcoRI.Whatdoes‘co’ partinitstandfor?

a. Coli

b. Colon

c. Cofactor

d. Noneoftheabove

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. Eukaryotic entities

(a) in the presence of a cAMP molecule, it carries out protein synthesis

(b) have only operons assisting in gene expression

(c) transcription takes place in the nucleus and translation in the cytoplasm

(d) transcription occurs in the cytoplasm and translation in nucleus

Answer: (c)

32. A genomic DNA possesses functioning units, a group of genes under the influence of promoters known as

(a) genes

(b) operons

(c) anticodon

(d) codon

Answer: (b)

33. All regulatory proteins possess a common DNA binding motif that is specific flexes in their protein chains permitting them to interlock with

(a) the outside groove of DNA helix

(b) the major groove of DNA helix

(c) the minor groove of DNA helix

(d) the inner groove of DNA helix

Answer: (b)

34. Regulatory proteins turn transcription off through binding to a site rapidly at the front of the promoter and many times even overlaps the promoter, this site is the

(a) regulatory site

(b) operator site

(c) suppressor site

(d) transcriptional control site

Answer: (b)

35. Seemingly, the vertebrate cells contain a protein which binds to clusters of 5-methylcytosine ensuring that the bound gene stays in the "off" position. This regulation on the role of gene regulation is an outcome of

(a) Methylation

(b) Translation

(c) Enhancer expression

(d) operator suppression

Answer: (a)

36. The transcriptional gene control in eukaryotes is mediated by

(a) metabolites that bind to the cis-acting elements

(b) trans-acting factors failing to bind to cis-acting elements

(c) trans-acting factors binding to cis-acting elements

(d) repressor proteins that bind to operator sites

Answer: (c)

37. Basic tools of genetic regulation are the ability of some proteins to bind to specific

(a) regulatory DNA sequences

(b) regulatory RNA sequences

(c) enzymes of cells

(d) promoter portions of genes

Answer: (a)

38. In the regulation of gene expression, this is an incorrect statement

(a) in the bacteria, it permits to replicate with no control

(b) in the bacteria, it permits to adapt to changing environments

(c) permits the maintenance of homeostasis in multicellular entities

(d) permits the functioning of multicellular entities on the whole

Answer: (a)

39. There are these many histones in the core of a nucleosome

(a) 8

(b) 6

(c) 4

(d) 2

Answer: (a)

40. In eukaryotes and bacteria, the most common form of regulation is

(a) promoter control

(b) translation control

(c) repressor control

(d) transcriptional control

Answer: (d)

Short Answers

1. What is Cistron?
2. What is One gene – One enzyme theory?
3. What is transcription?
4. What is genetic engineering?
5. What are cDNA libraries?