

Online Examinations (Even Sem/Part-I/Part-II Examinations 2020 - 2021)

Course Name - Genomics and Proteomics

Course Code - BBT602

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Answer all the questions. Each question carry one mark.

9. 1. Genome refers

Mark only one oval.

- Total gene pool of an organism
- Total mRNA of an organism
- Only DNA of a diploid cell
- Only proteins

10. 2. C-value in genome represents _____

Mark only one oval.

- Genetic disorders
- Phenotypic variation
- Amount of DNA present in the genome
- Qualitative traits

11. 3. Genomics is the sub discipline of genetics devoted to the

Mark only one oval.

- Mapping
- Sequencing
- Functional analysis
- All of these

12. 4. Bioinformatics involves

Mark only one oval.

- Artificial intelligence
- Only knowledge of Biochemistry
- Zoological knowledge
- All of these

13. 5. A character or trait is the direct function of

Mark only one oval.

- Gene
- RNA
- Protein
- rRNA

14. 6. Most of the eukaryotic nuclear genome has

Mark only one oval.

- Repetitive DNA
- Unique DNA
- GC island
- Single copy

15. 7. What is the genome size of yeast?

Mark only one oval.

- 12 Mb
- 120 Mb
- 330 Mb
- 1000 Mb

16. 8. Human has a _____ genome.

Mark only one oval.

- About 100 kb
- About 500 kb
- About 1000 kb
- About 3000 kb

17. 9. Introns are

Mark only one oval.

- Non coding regions of genome
- Coding regions of genome
- Repetitive regions of genome
- All of these

18. 10. Exons are

Mark only one oval.

- Non coding regions of genome
- Coding regions of genome
- Repetitive regions of genome
- All of these

19. 11. Human genome contains about

Mark only one oval.

- 10-20k genes
- 30-40k genes
- 50-80k genes
- More than 100k genes

20. 12. The largest genome is belonging from which organism?

Mark only one oval.

- E. coli
- Homo sapiens
- T4
- Carsonella ruddii

21. 13. The smallest genome is belonging from which organism?

Mark only one oval.

- E. coli
- Homo sapiens
- T5
- Carsonella ruddii

22. 14. DNA sequence is the linear order of _____

Mark only one oval.

- Nucleotides
- Neucleosides
- Amino acids
- Glucose moieties

23. 15. NucleotidesNeucleosidesAmino acidsGlucose moieties

Mark only one oval.

- ddNTP
- dNTP
- Base modifiers
- Base analogues

24. 16. Chain-termination is a type of _____

Mark only one oval.

- Sequencing
- Vector generation
- Antibiotic production
- Gene manipulation

25. 17. What is the main enzyme used in Sanger method?

Mark only one oval.

- Nuclease
- Polymerase
- Gyrase
- None of these

26. 18. NucleasePolymeraseGyraseNone of these

Mark only one oval.

- DNA polymerase
- RNA polymerase
- Gyrase
- Nuclease

27. 19. DNA polymeraseRNA polymeraseGyraseNuclease

Mark only one oval.

- Sanger sequencing
- Maxam-Gilbert sequencing
- MALDI-TOF
- ESI-MS

28. 20. Sanger sequencingMaxam-Gilbert sequencingMALDI-TOFESI-MS

Mark only one oval.

- Luciferase and DNA Pol 1
- Sulfurylase and luciferase
- Sulfurylase only
- All of these

29. 21. SOLiD sequencing is based on the principle of ____

Mark only one oval.

- DNA polymerization
- DNA ligation
- DNA degradation
- DNA denaturation

30. 22. Which of the following techniques is used to immobilize/amplify a ssDNA primer binding region (known as an adapter) which has been conjugated to the target sequence (i.e. the sequence that is to be sequenced) on a bead.

Mark only one oval.

- Emulsion PCR
- Nested PCR
- Hot-start PCR
- All of these

31. 23. The first bacterial genome to be sequenced was that of _____ a mild human pathogen.

Mark only one oval.

- Hemophilus influenzae
- Lactobacillus
- Vibrio cholerae
- Clostridium botulinum

32. 24. Which of the given is wrongly matched?

Mark only one oval.

- Escherichia coli – Bacteria
- Methanococcus jannaschii – Archaea
- Synechocystis sp. – Archaea
- Aquifex aeolicus – Bacteria

33. 25. Which of the following is incorrect regarding gene ontology?

Mark only one oval.

- It exists because there is a need to standardize protein functional descriptions
- It uses a limited vocabulary to describe molecular functions
- Biological processes are not described though
- The cellular components are described using limited vocabulary

34. 26. Coregenes is a web-based program that determines a _____ set of genes based on comparison of _____ small genomes.

Mark only one oval.

- vast, four
- core, fifteen
- core, four
- vast, fifteen

35. 27. BLAST will allow

Mark only one oval.

- Lower scoring hits
- Higher scoring hits
- Basic scoring hits
- Only peptide hits

36. 28. Ensembl is a

Mark only one oval.

- Genome browser
- Protein browser
- Both of these
- None of these

37. 29. Ensembl has the accession to annotate mainly

Mark only one oval.

- Ptimate genome
- Vertebrate genome
- Human genome
- Mammals genome

38. 30. Which of the following is used for DNA fragments' cluster generation on a microchip?

Mark only one oval.

- Emulsion PCR
- Bridge PCR
- Both of these
- None of these

39. 31. Pyrosequencing was developed for the first time by___

Mark only one oval.

- Celera Genomics
- 454 Life sciences
- Roche
- Sanger

40. 32. Which one of the following is not using any fluorescent or camera scanning techniques?

Mark only one oval.

- Ion torrent sequencing
- Pyrosequencing
- SoliD sequencing
- None of these

41. 33. If you want to submit a new protein sequence, which one of the following is the best platform?

Mark only one oval.

- NCBI
- SWISSPROT
- EMBL
- DDBJ

42. 34. Every protein in its native state has a unique three dimensional structure which is referred to as its _____

Mark only one oval.

- Configuration
- Conformation
- Spatial arrangement of domains
- None of these

43. 35. How many orders are possible for a conventional protein folding?

Mark only one oval.

1

2

3

4

44. 36. In ion torrent semi conductor sequencing method, which one of the following ions are detected?

Mark only one oval.

Mg²⁺

H⁺

Cl⁻

Ca²⁺

45. 37. Long repeat sequences are difficult to detect with which of the following techniques?

Mark only one oval.

Ion torrent sequencing

Pyrosequencing

Solid sequencing

None of these

46. 38. In Mass spectrometric analysis, which one of the following is used for sequencing data?

Mark only one oval.

- Mass of the peptide
- Charge of the peptide
- m/z value of the peptide
- z/m value of the peptide

47. 39. Peptide bond has _____ nature.

Mark only one oval.

- Partial triple bond
- Partial double bond
- Single bond
- Double bond

48. 40. Which of the following is an example of Homology and similarity tool?

Mark only one oval.

- BLAST
- RasMol
- EMBOSS
- PROSPECT

49. 41. In which year did the SWISSPROT protein sequence database begin?

Mark only one oval.

1985

1986

1987

1988

50. 42. Which of the following tools is used for the identification of motifs?

Mark only one oval.

BLAST

COPIA

PROSPECT

Pattern hunter

51. 43. The identification of drugs through the genomic study is called_____.

Mark only one oval.

Genomics

Pharmacogenomics

Pharmacogenetics

Cheminformatics

52. 44. Proteomics refers to the study of _____.

Mark only one oval.

- Set of proteins in a specific region of the cell
- Biomolecules
- Set of proteins
- The entire set of expressed proteins in the cell

53. 45. The process of finding the relative location of genes on a chromosome is called _____.

Mark only one oval.

- Gene tracking
- Genome walking
- Genome mapping
- Chromosome walking

54. 46. The term “invitro” is the Latin word which refers to_____.

Mark only one oval.

- Within the lab
- Within the glass
- Outside the lab
- Outside the glass

55. 47. _____ involves isolating DNA from multiple species within an environmental niche.

Mark only one oval.

- Metagenomics
- Genomics
- Proteomics
- Metabolomics

56. 48. Genomics can be used in agriculture to:

Mark only one oval.

- Generate new hybrid strains
- Improve disease resistance
- Improve yield
- All of these

57. 49. Which of the following is an example of model organism?

Mark only one oval.

- Mangifera indica
- Arabidopsis thaliana
- Cocos nucifera
- Porteresia coarctata

58. 50. EcoGene is the database of:

Mark only one oval.

- E. coli
- S. cerevisiae
- Human genome
- Rat

59. 51. Which of the following factors is not responsible for the denaturation of proteins?

Mark only one oval.

- Heat
- Charge
- pH change
- Organic solvents

60. 52. Which of the following is responsible for specifying the 3D shape of a protein?

Mark only one oval.

- The peptide bond
- The amino acid sequence
- Interaction with other polypeptides
- Interaction with molecular chaperons

61. 53. Which of the following proteins was first sequenced by Frederick Sanger?

Mark only one oval.

- Myosin
- Insulin
- Myoglobin
- Haemoglobin

62. 54. What is a bond between amino acids called?

Mark only one oval.

- Ionic bond
- Acidic bond
- Peptide bond
- Hydrogen bond

63. 55. Which of the following food products are high in protein content?

Mark only one oval.

- Tofu and eggs
- Grains and legumes
- Milk and milk products
- All of these

64. 56. Which of the following statements is true about the complete proteins?

Mark only one oval.

- High-protein foods that stabilize body weight
- Food that has a balanced amount of fat and protein
- Foods that provide all the amino acids that the body needs
- All of these

65. 57. Which of the following is not the function of proteins?

Mark only one oval.

- Helps in digesting food
- Carries genetic information
- Fights against the invading pathogens
- Helps in transporting oxygen in the blood

66. 58. Which of the following statements is true about the (primary) 1° structure of proteins?

Mark only one oval.

- The helical structure of the protein
- Subunit structure of the protein
- Three-dimensional structure of the protein
- The sequence of amino acids joined by a peptide bond

67. 59. The process of protein synthesis takes place in which of the following cell organelles?

Mark only one oval.

- Nucleus
 Mitochondria
 Vacuoles
 Cytoplasm

68. 60. _____ the smallest amino acid, has a hydrogen atom as the R group.

Mark only one oval.

- Valine
 Proline
 Glycine
 Threonine

69. 61. Mass spectrometers are used to determine which of the following?

Mark only one oval.

- Composition in sample
 Concentration of elements in sample
 Relative mass of atoms
 Properties of sample

70. 62. Who invented mass spectrometers?

Mark only one oval.

- J.J Thompson
- Tesla
- Darwin
- Crompton

71. 63. The procedure for mass spectroscopy starts with which of the following processes?

Mark only one oval.

- The sample is bombarded by electron beam
- The ions are separated by passing them into electric and magnetic field
- The sample is converted into gaseous state
- The ions are detected

72. 64. Which of the following ions pass through the slit and reach the collecting plate?

Mark only one oval.

- Negative ions of all masses
- Positive ions of all masses
- Negative ions of specific mass
- Positive ions of specific mass

73. 65. In a time-of-flight mass spectrometer, the velocity v of an accelerated ion is related to its mass by which of the following?

Mark only one oval.

- proportional to m (its mass)
- inversely proportional to its mass
- proportional to the square root of its mass
- inversely proportional to the square root of its mass

74. 66. The matrix is used for _____

Mark only one oval.

- high spatial resolution lipid imaging
- Detection of high-weight molecules like proteins that are larger than 5000 daltons
- detection of oligonucleotides and phosphorylated peptides
- All of these

75. 67. Which of the following ionization technique uses a short laser pulse to achieve ionization?

Mark only one oval.

- ESI
- Chemical Ionization
- FAB
- MALDI

76. 68. Which of the following ionization method uses aromatic compounds and organic solvents to achieve ionization?

Mark only one oval.

- ESI
- Chemical Ionization
- FAB
- MALDI

77. 69. If a charge has a mass of 3 kg and it is traveling at a speed of 10 m/s in-flight tube, then what will be its kinetic energy?

Mark only one oval.

- 300 J
- 90 J
- 100 J
- 150 J

78. 70. Which of the following is a Sanger's reagent?

Mark only one oval.

- 1-fluoro-2, 4-dinitrobenzene
- 1-fluoro-2, 3-dinitrobenzene
- 1-fluoro-2, 4-trinitrobenzene
- 1-fluoro-2, 3-trinitrobenzene

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