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

Course Name - –Molecular Biology and Microbial Genetics
Course Code - MMB201

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Answer all the questions. Each question carry one mark.

9. 1. Which of the following bonds are broken during DNA replication?

Mark only one oval.

- [ ] hydrogen bonds between bases
- [ ] phosphodiester bonds
- [ ] covalent bonds between bases
- [ ] ionic bonds between bases and phosphate groups

10. 2. Both the strands of DNA serve as templates concurrently in

Mark only one oval.

- Replication
- Excision repair
- Mismatch repair
- None of these

11. 3. In a nucleotide, the nitrogen base is joined to the sugar molecule by

Mark only one oval.

- Phosphodiester bond
- Glycosidic bond
- Hydrogen bond
- Phosphodiester bond & glycosidic bond

12. 4. Teminism is

Mark only one oval.

- Central dogma reverse
- Central dogma of molecular biology
- Circular flow of hereditary material
- An effect of cytoplasm on functioning of DNA

13. 5. Wobble position means

Mark only one oval.

- Base paring
- Altered base on code
- Third altered base on codon
- None of these

14. 6. The stretch of codons between AUG and a stop codon is called

Mark only one oval.

- Open reading frame
- TATA box
- Colinearity
- Degenerate

15. 7.In nucleic acids

Mark only one oval.

- DNA is single stranded in some viruses
- RNA is double stranded occasionally
- One turn of Z-DNA has 12 bases
- All of these

16. 8. Operon model for gene regulation was proposed by

Mark only one oval.

- Benzer
- Jacob & Monod
- Khorana
- Beadle & Tatum

17. 9. 'Transforming factor' is used for the name of

Mark only one oval.

- RNA
- DNA
- tRNA
- None of these

18. 10.DNA is denatured by

Mark only one oval.

- Heat
- Acid
- Alkali
- All of these

19. 11. The complete ribosome contains on the mRNA

Mark only one oval.

- P site
- A site
- Both P site & A site
- None of these

20. 12. Exons are spliced to form

Mark only one oval.

- mRNA
- tRNA
- rRNA
- None of these

21. 13. RAPD DNA markers are normally

Mark only one oval.

- 15 bases long
- 10 bases long
- 20 bases long
- 22 bases long

22. 14.Introduction of DNA molecules into the recipient organism is termed as _____

Mark only one oval.

- Transformation
- Translation
- Transduction
- Transcription

23. 15. Plasmids can be classified into how many types depending on the genes present for their transformation?

Mark only one oval.

- 1
- 2
- 3
- 4

24. 16. Electroporation is also used for taking up the DNA by the cells. It constitutes of _____.

Mark only one oval.

- inserting the DNA into the cells via an electric shock
- increased efficiency than both natural and chemical methods
- causing the least amount of damage in comparison to other methods
- decreased efficiency than both natural and chemical methods

25. 17. Transformation carried out using a particle gun is known as biolistic transformation. It falls under which category of transformation?

Mark only one oval.

- Physical
- Chemical
- Electroporation
- Natural

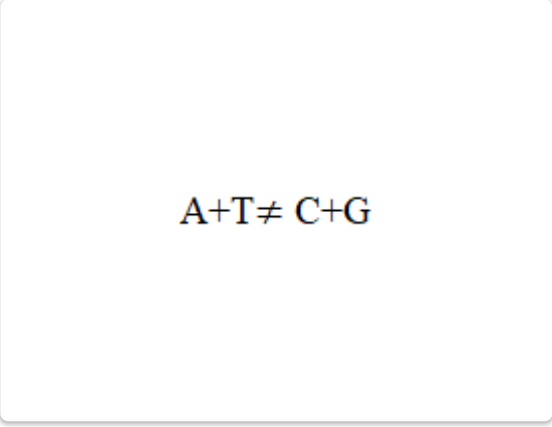
26. 18. Arrange the following events in the order of synthesis of a protein.i) A peptide bond formsii) A tRNA matches its anticodon to the codon in the A- siteiii) The movement of second tRNA complex from A-site to P-siteiv) The large subunit attaches to the small subunit and the initiator tRNA fits in the P-sitev) A small subunit binds to the mRNAvi) The activated amino acid tRNA complex attaches the initiation codon on mRNA

Mark only one oval.

- iv, v, iii, ii, i, vi
- iv, vi, v, ii, I, iii
- v, iv, iii, ii, vi, I
- v, vi, iv, ii, i, iii

27. 19. Base pairing of DNA does not prove that:

Mark only one oval.

- A/T is one
- Base sequence of RNA can be found out
- 

- Option 3
- C=G

28. 20. A bacterial colony containing DNA made up of 100% N15 nitrogen bases is allowed to replicate in a medium containing N14 bases. After one round of replication the result would be

Mark only one oval.

- All individuals will be identical to parents
- All individuals will be hybrids
- Only 50% individuals would be hybrids
- All individuals would have DNA made up of 100% N14

29. 21. Read the statements given below and identify the incorrect statement

Mark only one oval.

- The human genome contains 3164.7 million nucleotide bases
- The average gene consists of 30,000 bp
- The total number of genes is estimated at 30,000
- Chromosome Y has 231 genes

30. 22. The coding sequences found in split genes are called

Mark only one oval.

- Operons
- Introns
- Exons
- Cistrons

31. 23. Sickle cell anemia is caused

Mark only one oval.

- When valine is replaced by glutamic acid in beta polypeptide chain
- When glutamic acid is replaced by valine in beta polypeptide chain
- When glutamic acid is replaced by valine in alpha polypeptide chain
- When valine is replaced by glutamic acid in alpha polypeptide chain

32. 24. Which mRNA will be translated to a polypeptide chain containing 8 amino acids?

Mark only one oval.

- AUGUUAAUAGACGAGUAGCGACGAUGU
- AUGAGACGGACUGCAUUCCCAACCUGA
- AUGCCCAACCGUUAUUCAUGCUAG
- AUGUCGACAGUCUAAAACAGCGGG

33. 25. The percentage of human genome which encodes proteins is approximately

Mark only one oval.

- Less than 2%
- 0.05
- 0.25
- 0.99

34. 26.Which base is not found in RNA?

Mark only one oval.

- adenine
- cytosine
- thymine
- uracil

35. 27. Which of the following options, A – D, are the pyrimidine bases found in DNA?

Mark only one oval.

- uracil and thymine
- thymine and cytosine
- adenine and thymine
- cytosine and Uracil

36. 28. Who is credited with discovering the structure of DNA?

Mark only one oval.

- Crick and Neck
- Watson and Crick
- Watson and Franklin
- Holmes and Watson

37. 29. Tetracycline blocks protein synthesis by

Mark only one oval.

- inhibiting binding of aminoacyl tRNA to ribosome
- inhibiting initiation of translation
- inhibiting peptidyl transferase
- inhibiting translocase enzyme

38. 30.Replication occurs once every cell generation during

Mark only one oval.

- S phase
- T phase
- C phase
- A phase

39. 31.Which of the statements give below is correct with respect to frameshift mutation

Mark only one oval.

- Single nucleotide base change, insertion, or deletion of the genetic material
- Glutamine is replaced by valine
- Sickle cell anemia is an example
- Insertions or deletions of a number of nucleotides in a DNA sequence that is not divisible by three.

40. 32. The structural genes of lac operon transcribe mRNA which is

Mark only one oval.

- Polycistronic
- Replicative
- Monokaryotic
- Monocistronic

41. 33.If the sequence of bases in DNA is TACCGACCA, then the sequence of codons on the transcript will be

Mark only one oval.

- ATGGCTGGT
- ATCCGAACU
- AUGGCUGGU
- AUGGACUAA

42. 34. At the physiological pH, the DNA molecules are;

Mark only one oval.

- Positively charged
- Negatively charged
- Amphipathic
- Neutral

43. 35. Eukaryotes differ from prokaryote in mechanism of DNA replication due to

Mark only one oval.

- Use of DNA primer rather than RNA primer
- Different enzyme for synthesis of lagging and leading strand
- Discontinuous rather than semi-discontinuous replication
- Unidirectional rather than semi-discontinuous replication

44. 36. The reaction in DNA replication catalyzed by DNA ligase is

Mark only one oval.

- Addition of new nucleotides to the leading strand
- Addition of new nucleotide to the lagging strand
- Formation of a phosphodiester bond between the 3'-OH of one Okazaki fragment and the 5'-phosphate of the next on the lagging strand
- Base pairing of the template and the newly formed DNA strand

45. 37. Which of the following statement is false about DNA?

Mark only one oval.

- Located in chromosome
- Carries genetic information from parent to oppspring
- Abundantly found in the cytoplasm
- There is a precise correlation between amount of DNA and number of sets of chromosome per cell

46. 38. Process in which ribosome reads sequence carried by mRNA and joins amino acids to form protein is called

Mark only one oval.

- Denomination
- Translation
- Segregation
- Transcription

47. 39. Deoxyribonucleic Acid (DNA) present on chromosome is responsible for

Mark only one oval.

- Mitosis of cells
- Characteristics of cells
- Location of cells
- Life of cells

48. 40. Process of condensing many small molecules to form one large molecule is called

Mark only one oval.

- Polymerization
- Condensation
- Hydrolysis
- Oxidation

49. 41. What is not True for DNA in prokaryotes?

Mark only one oval.

- Present in the form of a compact structure called nucleoid
- The coils are maintained by non-histone basic proteins
- Found in cytoplasm in a supercoiled condition
- Packaged as nucleosomes along with histones

50. 42.What is the main function of tRNA in relation to protein synthesis?

Mark only one oval.

- Inhibits protein synthesis
- Proof reading
- Identifies amino acids and transport them to ribosomes
- all of these

51. 43. The eukaryotic initiation codon recognizes_____

Mark only one oval.

- f-Met-tRNA-f-Met
- Met-tRNAi-Met
- f-Met-tRNAi-Met
- f-Met-tRNA-Met

52. 44.In Eukaryotes the region between 1st AUG and 5'-G cap is known as _____

Mark only one oval.

- Leader
- Attenuator
- UTR
- ORF

53. 45. Which of these is the 1st event to take place during transcription initiation?

Mark only one oval.

- Formation of a closed initiation complex
- Formation of open initiation complex
- Formation of absorptive transcript
- Promoter clearance

54. 46.Which of the following transcription termination technique has RNA dependent ATPase activity?

Mark only one oval.

- Intercalating agents
- Rho dependent
- Rho independent
- Rifampcin

55. 47. Protein synthesis in bacteria takes place on which of the following organelles?

Mark only one oval.

- Endoplasmic Reticulum
- Golgi body
- Ribosomes
- Mitochondria

56. 48. During translation, proteins are synthesized

Mark only one oval.

- by ribosomes using the information on DNA
- by lysosome using the information on DNA
- by ribosomes using the information on mRNA
- by ribosomes using the information on rRNA

57. 49. The enzyme involved in amino acid activation is

Mark only one oval.

- ATP synthetase
- aminoacyl tRNA synthetase
- aminoacyl mRNA synthetase
- aminoacyl rRNA synthetase

58. 50. Why recombinational repair system is called double strand break repair?

Mark only one oval.

- Both strands are broken
- One strand is broken
- No strand is broken
- Both strand act as template

59. 51. Which enzyme is activated during double stranded break?

Mark only one oval.

- DNA polymerase
- Translesional polymerase
- RNA polymerase
- Klenow fragment

60. 52. In mismatch repair mechanism, which of the following protein recognize DNA

Mark only one oval.

- MutH
- MutS
- MutL
- UvrD

61. 53.The transfer of genes from one cell to another by a bacteriophage is known as _____

Mark only one oval.

- Recombination
- Conjugation
- Transduction
- Transformation

62. 54. Bacterial recombination causes transformation of the recipient cell to _____

Mark only one oval.

- donor cell
- merozygote
- zygote
- recipient cell

63. 55.Transfer of genes between cells that are in physical contact with one another is known as transformation.

Mark only one oval.

- Complete true
- complete false
- neither true
- neither false

64. 56. The transfer of naked DNA from one cell to another is referred to as _____

Mark only one oval.

- Transduction
- Lysogeny
- Transformation
- Conjugation

65. 57. What are bacteriocins?

Mark only one oval.

- proteins
- toxins
- plasmid
- sex factor

66. 58. Common vegetative reproduction in bacteria is by

Mark only one oval.

- conjugation
- budding
- oidia
- binary fission

67. 59. Genetic recombination between bacterial cells is first demonstrated by

Mark only one oval.

- Ochoa and Kornberg
- Har Gobind Khorana
- H. J. Muller
- Lederberg and Tatum

68. 60. Which of the following gene helps in identifying transformed cells?

Mark only one oval.

- plasmid
- selectable marker
- structural gene
- vector