

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

Course Name - --Molecular Biology

Course Code - BBTC401

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Answer all the questions. Each question carry one mark.

9. 1. What is the function of the ω subunit of RNA polymerase?

Mark only one oval.

- Sub unit association
- Promoter binding
- Initiation & elongation
- Cation binding

10. 2. The structural genes of lac operon transcribe mRNA which is

Mark only one oval.

- Polycistronic
- Replicative
- Monokaryotic
- Monocistronic

11. 3. Which protein mentioned below can reverse central dogma?

Mark only one oval.

- Ribosome
- Restriction Endonuclease
- Reverse Transcriptase
- RNA Polymerase

12. 4. The principal for Hershey chase Bacteria and lambda phage experiment explain

Mark only one oval.

- Transduction
- transformation
- transcription
- translation

13. 5. Which of the following is considered as a start codon?

Mark only one oval.

- AUG
- GUG
- UAG
- AGG

14. 6. 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

15. 7. Which mRNA will be translated to a polypeptide chain containing 8 amino acids?

Mark only one oval.

- AUGUAAUAGACGAGUAGCGACGAUGU
- AUGAGACGGACUGCAUUCCCAACCUGA
- AUGCCCAACCGUUAUUCAUGCUAG
- AUGUCGACAGUCUAAAACAGCGGG

16. 8. Which of the following is TRUE for the RNA polymerase activity?

Mark only one oval.

- DNA dependent DNA synthesis
- Direct repair
- DNA dependent RNA synthesis
- RNA dependent RNA synthesis

17. 9. Eukaryotes differ from prokaryote in mechanism of DNA replication due to:

Mark only one oval.

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

18. 10. The major function of RNA polymerase's sigma factor is

Mark only one oval.

- recognition of the translational stop sequence
- recognition of the transcriptional start sequence
- recognition of the transcriptional stop sequence
- recognition of the translational start sequence

19. 11. How many base pairs are there in one full turn of the B-DNA double helix?

Mark only one oval.

4

10

16

64

20. 12. The coding sequences found in split genes are called

Mark only one oval.

Operons

Introns

Exons

Cistrons

21. 13. Recombinational repair is often due to

Mark only one oval.

Incorporation of many incorrect nucleotides by DNA pol

Many cystidine dimer and associated large gaps in a strand

Many thymidine dimer formation and associated large gaps in a strand

All of these

22. 14. Which of the following enzymes are used to join bits of DNA?

Mark only one oval.

- DNA ligase
- DNA polymerase
- primase
- Endonuclease

23. 15. Rho-dependent termination of transcription in E. coli

Mark only one oval.

- requires ATP
- requires about 50 nucleotides of uncomplexed mRNA
- both (a) and (b)
- removes mRNA and holoenzyme from the DNA

24. 16. Pick the right difference between a DNA and RNA

Mark only one oval.

- Sugar and phosphate
- Purines and phosphate
- Sugar and pyrimidines
- Sugar and purines

25. 17. The function of enzyme involved in base excision repair is

Mark only one oval.

- Addition of correct base
- Addition of correct nucleotide
- Removal of incorrect base
- Removal of phosphodiester bond

26. 18. Which enzyme is activated during double stranded break?

Mark only one oval.

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

27. 19. Unwinding of DNA is done by

Mark only one oval.

- Helicase
- ligase
- Exonuclease
- Topoisomerase

28. 20. Which of the following amino acid starts all proteins synthesis?

Mark only one oval.

- Glycine
- Proline
- Thymine
- Methionine

29. 21. Synthesis of RNA from DNA is

Mark only one oval.

- Transcription
- Translation
- Metabolism
- Reduction

30. 22. Which of the following is true about DNA polymerase?

Mark only one oval.

- It can synthesize DNA in the 5' to 3' direction
- It can synthesize DNA in the 3' to 5' direction
- It can synthesize mRNA in the 3' to 5' direction
- It can synthesize mRNA in the 5' to 3' direction

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

Mark only one oval.

- Leader
- Attenuator
- UTR
- ORF

32. 24. In which event Both DNA strands serve as templates

Mark only one oval.

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

33. 25. The direction of amino acid transfer to the growing polypeptide chain is

Mark only one oval.

- from the A (aminoacyl tRNA site) site to the P (peptidyl tRNA site) site on the ribosome
- from the P site to the A site on the ribosome
- from the A site to the E (exit tRNA site) site on the ribosome
- from the P site to the E site on the ribosome

34. 26. 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

35. 27. Genes which are active all the time synthesizing substances needed by the cell are called

Mark only one oval.

- Cellular luxury genes
- Metabolic genes
- House keeping genes
- Control genes

36. 28. 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

37. 29. Inhibition of this enzyme alter symaturation of hnRNA in eukaryotes

Mark only one oval.

- RNA polymerase II
- RNA primase
- RNA polymerase III
- RNA polymerase I

38. 30. Name the inhibitor which blocks translation in both prokaryotes as well as eukaryotes?

Mark only one oval.

- Chlorophenicol
- Tetracycline
- Puromycin
- Streptomycin

39. 31. Replication occurs once every cell generation during

Mark only one oval.

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

40. 32. Enzyme which can break and seal the DNA strand

Mark only one oval.

- Topoisomerase II
- Helicase
- Primase
- Restriction endonuclease

41. 33. Which of the following transcription termination technique has RNA dependent ATPase activity?

Mark only one oval.

- Intercalating agents
- Rho dependent
- Rho independent
- Rifampicin

42. 34. Presence of the heparin promotes transcription.

Mark only one oval.

- Completely TRUE
- Completely FALSE
- None
- Both

43. 35. In eukaryotes, there are three different RNA polymerases. The RNA polymerase responsible for transcription of mRNA is

Mark only one oval.

- RNA polymerase II
- RNA polymerase I
- RNA polymerase III
- none of these

44. 36. 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

45. 37. 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

46. 38. The enzyme photolyase is used in what method of repair?

Mark only one oval.

- Base excision
- Photo reactivation
- Nucleotide excision
- None of these

47. 39. When DNA replication starts

Mark only one oval.

- The phosphodiester bonds between the adjacent nucleotides break
- The bonds between the nitrogen base and deoxyribose sugar break
- The leading strand produces Okazaki fragments
- The hydrogen bonds between the

48. 40. Transcription by E. coli polymerase occurs in

Mark only one oval.

- four phases known as initiation, propagation, elongation and termination
- three phases known as initiation, elongation and termination
- two phases known as initiation and termination
- none of the above

49. 41. 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

50. 42. An alteration in a nucleotide sequence that changes a triplet coding for an amino acid into a termination codon is

Mark only one oval.

- Nonsense mutation
- Mutagenesis
- Mutation
- Mutagen

51. 43. In mismatch repair mechanism, which of the following protein recognize DNA

Mark only one oval.

- MutH
- MutS
- MutL
- UvrD

52. 44. The complex of RNA polymerase, DNA template and new RNA transcript is called

Mark only one oval.

- transcription bubble
- replication bubble
- a translation bubble
- none of these

53. 45. The ribosomes are composed of

Mark only one oval.

- proteins
- RNA
- both (a) and (b)
- lipids

54. 46. Process of condensing many small molecules to form one large molecule is called

Mark only one oval.

- Polymerization
- Condensation
- Hydrolysis
- Oxidation

55. 47. DNA replication in eukaryotes occurs only in

Mark only one oval.

- G1 phase
- S phase
- G2 phase
- M phase

56. 48. The enzyme involved in amino acid activation is

Mark only one oval.

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

57. 49. Enzyme which is responsible for stabilization of ssDNA strand

Mark only one oval.

- Topoisomerase II
- Helicase
- Primase
- Restriction endonuclease

58. 50. The pathway of a tRNA during polypeptide elongation on the ribosome is

Mark only one oval.

- A site → P site → E site
- P site → entry site → exit site
- A site → P site → entry site
- P site → A site → E site

59. 51. Process in which sequence of nucleotides of DNA is copied in form of mRNA nucleotides is called

Mark only one oval.

- Denomination
- Translation
- Segregation
- Transcription

60. 52. At the physiological pH, the DNA molecules are;

Mark only one oval.

- Positively charged
- Negatively charged
- Amphipathic
- Neutral

61. 53. RNA required for the protein synthesis

Mark only one oval.

- mRNA
- tRNA
- rRNA
- All of these

62. 54. Roll of helicase enzyme in replication of eukaryotic cell

Mark only one oval.

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

63. 55. On the ribosome, mRNA binds

Mark only one oval.

- between the subunits
- to the large subunit
- to the small subunit
- none of these

64. 56. In Prokaryotes, the ribosomal binding site on mRNA is called

Mark only one oval.

- Hogness sequence
- Shine-Dalgarno sequence
- Pribnow sequence
- TATA box

65. 57. The stretch of codons between AUG and a stop codon is called

Mark only one oval.

- Open reading frame
- TATA box
- Colinearity
- Degenerate

66. 58. Which of the following RNA constitutes 90 percent of the total cellular RNA?

Mark only one oval.

- rRNA
- tRNA
- mRNA
- hnRNA

67. 59. True replication of DNA is possible due to

Mark only one oval.

- Hydrogen bonding
- Phosphate backbone
- Complementary base pairing rule
- None of the above

68. 60. Which of the following conditions would cause the release of the lac repressor protein from the lac operator site on DNA?

Mark only one oval.

- Presence of glucose in the growth media
- Presence of lactose in the growth media
- Presence of IPTG (isopropyl thiogalactoside) in the growth media
- Both (b) and (c)

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