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I MSC [2017-2019]

SEMESTER I

CORE: MOLECULAR BIOLOGY AND GENETICS - 158C

Multiple Choice Questions.

1. Rods, spheres and spirals are shapes of cells observed in _____

- A. plants
- B. animals
- C. fungi
- D. bacteria

ANSWER: D

2. The two sugars found in nucleic acids are _____.

- A. sucrose and ribose.
- B. glucose and fructose.
- C. deoxyribose and ribose.
- D. deoxyribose and glucose.

ANSWER: C

3. The number of adenine bases in a DNA molecule equals the number of thymine bases because _____ bonds to thymine on the other strand.

- A. DNA contains equal number of all four bases.
- B. thymine always follows adenine on each DNA strand.
- C. DNA is made of alternating adenine and thymine bases.
- D. adenine on one strand.

ANSWER: D

4. Which of the following would not occur during complementary base pairing?

- A. A-T.
- B. U-G.
- C. C-G.
- D. A-U.

ANSWER: B

5. Which of the following describes a DNA molecule?

- A. Double helix of glucose sugars and phosphates.
- B. Ladder-like structure composed of fats and sugars.
- C. Double helix containing nucleotides joined by hydrogen bonds.
- D. A chain of alternating phosphates and nitrogenous bases.

ANSWER: C

6. DNA replication involves the splitting of bonds between _____.

- A. bases.
- B. sugars and bases.
- C. phosphates and bases.
- D. sugars and phosphates.

ANSWER: D

7. Which of the following statements best describes DNA replication?

- A. tRNA, by complementary base pairing with mRNA, produces proteins.
 - B. RNA nucleotides, by complementary base pairing with DNA, produce DNA.
 - C. DNA nucleotides, by complementary base pairing with DNA, produce DNA.
 - D. RNA nucleotides, by complementary base pairing with DNA, produce tRNA.
- ANSWER: C

8. The base found in RNA but not in DNA is _____.
- A. uracil (U).
 - B. adenine (A).
 - C. guanine (G).
 - D. cytosine (C).
- ANSWER: A

9. The product of transcription is _____.
- A. DNA.
 - B. protein.
 - C. RNA.
 - D. a ribosome.
- ANSWER: C

10. The mRNA is produced in the process called _____.
- A. respiration.
 - B. translation.
 - C. replication.
 - D. transcription.
- ANSWER: D

11. Which of the following best describes the function of mRNA?
- A. It stays in the nucleus and is copied by DNA.
 - B. It carries amino acids to the growing polypeptide chain.
 - C. It makes up the ribosomes and provides the site for protein synthesis.
 - D. It is transcribed from the DNA and carries the information to the ribosome.
- ANSWER: D

12. A polypeptide found in the cytoplasm of a cell contains 12 amino acids. How many nucleotides would be required in the mRNA for this polypeptide to be translated?
- A. 4.
 - B. 12.
 - C. 24.
 - D. 36.
- ANSWER: D

13. If the nucleotide sequence of an anticodon was AUC, then the DNA triplet codon would be _____.
- A. ATC.
 - B. TAG.
 - C. AUC.
 - D. UAG.
- ANSWER: B

14. Who proposed the cell-theory?
- A. M.Scleiden.
 - B. Theodore Schwann.
 - C. Louis Pasteur.
 - D. James D Watson.
- ANSWER: B

15. For a substance to be classified as a mutagen, it must cause _____.
- A. a change in DNA.

- B. enzymes to denature.
- C. hydrolysis of proteins.
- D. mRNA to be produced.

ANSWER: A

16. The ground material of nucleus is referred as _____.

- A. cytoplasm.
- B. matrix.
- C. karyoplasm.
- D. nucleoplasm.

ANSWER: D

17. Which of the following is considered as the smallest prokaryotic cell?

- A. Mycoplasma sp.
- B. Cyanobacteria sp.
- C. Yeast cells.
- D. E.coli cells.

ANSWER: A

18. Two functions of rough endoplasmic reticulum are to _____.

- A. detoxify and transport drugs.
- B. modify and activate hormones.
- C. synthesize and transport enzymes.
- D. join with and hydrolyze food vacuoles.

ANSWER: C

19. The process of copying a gene's DNA sequence into a sequence of RNA is called

- A. Replication.
- B. Transcription
- C. Translation
- D. PCR

ANSWER: B

20. Which organelle contains enzyme that digest old cells?

- A. Nucleus.
- B. Ribosome.
- C. Lysosome.
- D. Golgi body.

ANSWER: C

21. Cells which require large amounts of energy would likely contain relatively high numbers of _____.

- A. centrioles.
- B. chloroplasts.
- C. Golgi bodies.
- D. mitochondria.

ANSWER: D

22. The transcribing enzyme is

- A. Ligase
- B. DNA Polymerase
- C. RNA Polymerase
- D. Aminoacyl transferase

ANSWER: C

23. In which one of the following organelles, the light energy used to produce simple sugars?

- A. Lysosomes.
- B. Chloroplasts.
- C. Mitochondria.

D. Endoplasmic reticulum.

ANSWER: B

24. Which of the following structures is found in both bacteria and plant cells?

- A. Cell wall.
- B. Chloroplast.
- C. Mitochondrion.
- D. Nuclear membrane.

ANSWER: A

25. What is the sequence of organelles that a secreted protein would have passed through on its journey out of a cell?

- A. Mitochondria, Golgi apparatus, Cell membrane.
- B. Cell membrane, Mitochondria, Golgi apparatus.
- C. Golgi apparatus, Rough endoplasmic reticulum, Cell membrane.
- D. Rough endoplasmic reticulum, Golgi apparatus, Cell membrane.

ANSWER: D

26. The fluid-mosaic membrane model describes the membrane as having a _____.

- A. sheet of protein.
- B. phospholipid bilayer.
- C. sugar-phosphate backbone.
- D. complementary base template.

ANSWER: B

27. Molecules in the cell membrane that function as receptors are _____.

- A. proteins.
- B. glycerol.
- C. cholesterol.
- D. phospholipids.

ANSWER: A

28. Which molecule contains the genetic code?

- A. DNA.
- B. tRNA.
- C. mRNA.
- D. rRNA.

ANSWER: C

29. Which of the following contains large amount of hydrolytic enzymes?

- A. Centriole.
- B. Ribosome.
- C. Nucleolus.
- D. Lysosome.

ANSWER: D

30. Which of the following organelles is correctly matched with its product?

- A. Nucleolus -DNA.
- B. Mitochondria -ATP.
- C. Golgi apparatus -ATP.
- D. Smooth endoplasmic reticulum- protein.

ANSWER: B

31. Which of these substances cannot pass through cell membranes?

- A. Starch.
- B. Glycerol.
- C. Amino acids.
- D. Monosaccharides.

ANSWER: A

32. Which of the following conditions is required for diffusion to occur?

- A. ATP energy.
- B. A living cell.
- C. A concentration gradient.
- D. A selectively-permeable membrane.

ANSWER: C

33. When put in a hypotonic environment, animal cells will _____.

- A. swell.
- B. shrink.
- C. secrete enzymes.
- D. remain unchanged.

ANSWER: A

34. Which of the following processes moves molecules using cellular energy?

- A. Osmosis.
- B. Diffusion.
- C. Pinocytosis.
- D. Active transport.

ANSWER: D

35. Which strand of DNA is transcribed by RNA polymerase?

- A. Sense strand.
- B. Non-coding.
- C. Antisense.
- D. Template strand.

ANSWER: C

36. Which one of the following is INCORRECT about genetic code?

- A. Degeneracy.
- B. Universality.
- C. Ambiguity.
- D. Non-overlapping.

ANSWER: C

37. According to the Wobble hypothesis of F. Crick, wobbling occurs at which one of the following positions of codons and anticodons?

- A. First position of codon.
- B. Third position of codon.
- C. Second position of codon.
- D. Both b and c.

ANSWER: B

38. Which of the following RNA is present in Shine-Dalgarno sequence?

- A. tRNA.
- B. mRNA.
- C. rRNA.
- D. SnRNA.

ANSWER: B

39. Which of the following type of rRNA is not found in eukaryotic ribosome?

- A. 28S.
- B. 5.8S.
- C. 5S.
- D. 16S.

ANSWER: D

40. RNA polymerase III of eukaryotes synthesizes _____.

- A. tRNA.
- B. 5srRNA.
- C. SnRNA.
- D. mRNA.

ANSWER: A

41. Which one of the following is not the upstream sequence element of the promoter region of RNA Pol II?

- A. Enhancer.
- B. GC box.
- C. CAAT box.
- D. Octamer.

ANSWER: D

42. The termination of protein synthesis is catalysed by _____.

- A. a special type of tRNA that binds at termination codon.
- B. a special type of protein release factor that binds at termination codon.
- C. the activity of ribosome itself.
- D. the activity of trailer region of mRNA.

ANSWER: B

43. which of the following enzymes are used to join bits of DNA ?

- A. DNA ligase
- B. DNA polymerase
- C. Primase
- D. Endonuclease

ANSWER: A

44. Which enzyme unwinds DNA strands for replication process?

- A. DNA helicase.
- B. DNA polymerase.
- C. Topoisomerase.
- D. Primase.

ANSWER: A

45. Which type of DNA polymerase enzyme is responsible for the synthesis of RNA primer in eukaryotes?

- A. Primase.
- B. DNA Pol III.
- C. Ligase.
- D. Helicase.

ANSWER: A

46. During the course of DNA replication, the proof reading function is carried out by the enzyme DNA polymerase type _____.

- A. IV.
- B. III.
- C. II.
- D. I.

ANSWER: B

47. The DNA damage caused by deamination is an example of _____.

- A. single base alteration.
- B. two base alteration.
- C. chain breaks.
- D. cross linkage.

ANSWER: A

48. The proteins that is associated with the transition of one phase of cell cycle to another are _____.

- A. cyclins.
- B. nuclins.
- C. phospins.
- D. isophospins.

ANSWER: A

49. Name the DNA sequence that prevents the continuous loss of DNA at the end of the chromosome during the course of replication?

- A. Okazaki.
- B. Telomere.
- C. Octomere.
- D. Heteromere.

ANSWER: B

50. The mobile segments of DNA are called _____.

- A. retroposons.
- B. transposons.
- C. introns.
- D. exons.

ANSWER: B

51. The total DNA contained in an organism is referred to as _____.

- A. gene.
- B. genome.
- C. hereditary unit.
- D. DNA.

ANSWER: B

52. True replication of DNA is possible due to _____

- A. Hydrogen Bonding
- B. Phosphate backbone
- C. Complementary base pairing rule
- D. None of the above

ANSWER: C

53. The enzyme used to catalyse the synthesis of complementary DNA from mRNA is

- A. transcriptase.
- B. reverse transcriptase.
- C. helicase.
- D. gyrase.

ANSWER: B

54. Mitosis results in two _____ cells, while meiosis results in _____ haploid cells. Need a Hint?

- A. haploid/four
- B. diploid/two
- C. diploid/four
- D. haploid/two

ANSWER: B

55. The number of genes found in human genome is around _____.

- A. 10,000-20,000.
- B. 20,000-30,000.
- C. 30,000-40,000.
- D. 40,000-50,000.

ANSWER: C

56. The genes responsible for the production of proteins that are required all the time in a cell are regarded as _____ gene.

- A. constitutive.
- B. suppressive.
- C. dominative.
- D. substitute.

ANSWER: A

57. The structural lac Z gene of lactose operon is responsible for the synthesis of the enzyme _____.

- A. beta galactosidase.
- B. permease.
- C. acetylase.
- D. all the above.

ANSWER: A

58. Which of the following is added to 3'-end of eukaryotic mRNAs during post transcriptional modification?

- A. Introns.
- B. Poly A tail.
- C. A cap structure.
- D. The trinucleotide CCA.

ANSWER: B

59. Methylation of DNA results in _____.

- A. activation of genes.
- B. inactivation of genes.
- C. no effect on genes.
- D. inactivation of protein motifs.

ANSWER: B

60. What is the important function of restriction enzymes?

- A. Enzymes that add methyl group.
- B. Enzymes that degrade ribose sugar.
- C. They are plasmids.
- D. Enzymes that cleave DNA at specific site.

ANSWER: D

61. When DNA opens up y shaped structures are called _____

- A. replication forks
- B. single strands
- C. parent strand
- D. none of above

ANSWER: A

62. The function of single-strand binding proteins in DNA replication is to _____.

- A. break the hydrogen bonds linking complementary bases.
- B. prevent the replication fork from unwinding too fast.
- C. hold the unwound single strands apart.
- D. attach to the lagging strand so that it does not get too far behind.

ANSWER: C

63. Which is not an activity of DNA polymerase?

- A. Continuous 5' to 3' DNA synthesis of the leading strand.
- B. Discontinuous 5' to 3' DNA synthesis of the lagging strands.
- C. 3' to 5' proofreading and 5' to 3' correction of errors.
- D. 5' to 3' synthesis of RNA primer.

ANSWER: D

64. The regions of DNA in a eukaryotic gene that encode a polypeptide product are called _____.

- A. hnRNAs.
- B. exons.
- C. enhancers.
- D. tRNAs.

ANSWER: B

65. Which of the following occurs during anaphase I?

- A. Chromosomes cluster at the two poles of the cell.
- B. Crossing over occurs.
- C. Chromosomes align down the center of the cell.
- D. One version of each chromosome moves toward a pole.

ANSWER: D

66. Which of the following is not a feature of eukaryotic gene expression?

- A. Polycistronic mRNAs are very rare.
- B. RNA synthesis and protein synthesis are coupled.
- C. Many genes are interrupted by noncoding DNA sequences.
- D. mRNA is often extensively modified before translation.

ANSWER: B

67. In the classical model of transcriptional control described by Jacob and Monod, a repressor protein binds to a (an) _____.

- A. enhancer.
- B. TATA box.
- C. operator.
- D. ribosome binding site.

ANSWER: C

68. The completion of the S phase of the cell cycle of a mammalian cell is marked by all of the following EXCEPT _____.

- A. histone content per cell is double that of cells in G1.
- B. in replicated DNA, newly incorporated bases are paired with parental bases.
- C. each replicated chromosome has four telomeres.
- D. sister chromatids disjoin from one another.

ANSWER: D

69. Common lesions found in DNA after exposure to ultraviolet light are _____.

- A. pyrimidine dimers.
- B. purine dimers.
- C. single strand breaks
- D. base deletions.

ANSWER: A

70. If a cell is in G2 phase of cell cycle, _____.

- A. it has twice the amount of DNA present in a telophase nucleus.
- B. it has visibly distinct chromosomes.
- C. it lacks a visible nuclear membrane.
- D. it is in mitosis.

ANSWER: A

71. Single base substitutions are called _____.

- A. mutations
- B. point mutations
- C. replication
- D. recombination

ANSWER: B

72. The mitotic spindle is made of _____.

- A. collagen.
- B. condensin.
- C. histones.
- D. microtubules.

ANSWER: D

73. _____ contains identical DNA sequences and is held together during mitosis.

- A. Daughter chromosomes.
- B. Daughter chromatids.
- C. Sister chromosomes.
- D. Sister chromatids.

ANSWER: D

74. Which of the following represents the sequence of events during mitosis?

- A. prophase, metaphase, anaphase, telophase.
- B. interphase, metaphase, anaphase, telophase.
- C. anaphase, telophase, metaphase, interphase.
- D. interphase, prophase, anaphase, metaphase.

ANSWER: A

75. Increase in number of copies of genes is called _____

- A. gene duplication
- B. gene amplification
- C. gene cloning
- D. gene location

ANSWER: B

76. Chromosomes are condensed to their greatest extent during _____ of mitosis.

- A. metaphase.
- B. prophase.
- C. telophase.
- D. interphase.

ANSWER: A

77. Cytokinesis in plant cell occurs initially by the formation of a (an) _____.

- A. aster.
- B. mitotic spindle
- C. cell wall.
- D. cell plate.

ANSWER: D

78. Transcription occurs along a _____ template forming an mRNA in the _____ direction.

- A. 5' to 3'; 5' to 3'.
- B. 5' to 3'; 3' to 5'.
- C. 3' to 5'; 5' to 3'.
- D. 3' to 5'; 3' to 5'.

ANSWER: C

79. Homologous chromosomes undergo synapsis during _____.

- A. anaphase I.
- B. prophase I.
- C. anaphase II.
- D. prophase II.

ANSWER: B

80. During which phase does crossing-over occur?

- A. Interphase.

- B. Prophase I.
- C. Metaphase I.
- D. Prophase II.

ANSWER: B

81. During prophase I of meiosis, homologous chromosomes lie side by side is known as _____.
- A. chromatid pairing.
 - B. divalent formation.
 - C. tetrad formation.
 - D. parental pairing.

ANSWER: B

82. A zygote contains the _____ complement of chromosomes.
- A. haploid.
 - B. diploid.
 - C. polyploidy.
 - D. spermatogenesis.

ANSWER: B

83. During which of the following stages of meiosis do the sister centromeres separate?
- A. Metaphase I.
 - B. Anaphase I.
 - C. Metaphase II.
 - D. Anaphase II.

ANSWER: D

84. Which of the following events does not occur in prophase II?
- A. Formation of the spindle.
 - B. Condensation of chromatin into chromosomes.
 - C. Formation of chiasmata.
 - D. Removal of the nuclear membrane.

ANSWER: B

85. During which stage of meiosis does crossing over occur?
- A. prophase I
 - B. anaphase I
 - C. prophase II
 - D. telophase II

ANSWER: A

86. The first mRNA codon to specify an amino acid is always
- A. TAC.
 - B. UAA.
 - C. UAG.
 - D. AUG.

ANSWER: D

87. Which of the following is not a characteristic of prokaryotes?
- A. DNA
 - B. cell membrane
 - C. cell wall
 - D. endoplasmic reticulum

ANSWER: D

88. The cell cytoskeleton is made up of _____ and _____.
- A. actin filaments and microtubules.
 - B. DNA and protein.
 - C. RNA and protein.

D. chromosome and spindle fibres.

ANSWER: A

89. Which one of the following is not involved in the processing of mRNA precursors in eukaryotic cells?

- A. Capping of the 5 prime end.
- B. Transport of the pre mRNA to the cytoplasm.
- C. Excision of introns.
- D. Splicing of exons.

ANSWER: D

90. All biological DNA synthesis occurs from the

- A. 3' end to 5' end
- B. 5' end to 3' end
- C. both A and B
- D. none of above

ANSWER: B

91. Replication occurs once every cell generation during _____

- A. S phase
- B. T phase
- C. C phase
- D. A phase

ANSWER: A

92. Which of the following cells lacks cytoskeleton _____

- A. Eukaryotic plant cell
- B. Prokaryotic bacterial cells
- C. both a and b
- D. Prokaryotic cells and Eukaryotic animal cells

ANSWER: B

93. The enzyme that replaces the nucleotides of the RNA primer with the appropriate DNA nucleotides is

- A. DNA Polymerase II
- B. RNA Polymerase
- C. DNA Ligase
- D. DNA Gyrase

ANSWER: A

94. The first mRNA codon to specify an amino acid is always _____ structure.

- A. primary.
- B. secondary.
- C. tertiary.
- D. quaternary.

ANSWER: A

95. Site of transcription by RNA polymerase II is _____.

- A. nuclear envelope.
- B. nucleolus.
- C. euchromatin.
- D. nucleus.

ANSWER: D

96. Of the _____ different possible codons, _____ specify amino acids and _____ signal stop.

- A. 20, 17, 3.
- B. 180, 20, 60.
- C. 64, 61, 3.
- D. 61, 60, 1.

ANSWER: C

97. The genetic code operates through _____.

- A. the protein moiety of DNA.
- B. cistron of DNA.
- C. nucleotide sequence of mRNA.
- D. the anticodons of tRNA.

ANSWER: C

98. Centromeres are of _____

- A. 2 types
- B. 3 types
- C. 4 types
- D. 5 types

ANSWER: A

99. From DNA the genetic message is transcribed into _____.

- A. mRNA.
- B. rRNA.
- C. protein.
- D. tRNA.

ANSWER: A

100. RNA does not contain _____.

- A. adenine.
- B. hydroxymethyl cytosine.
- C. deoxyribose.
- D. uracil.

ANSWER: C

101. When DNA polymerase meets an adenine nucleotide on template strand then at 3' end it adds

- A. cytosine
- B. guanine
- C. uracil
- D. thymine

ANSWER: D

102. Transcription is the formation of _____.

- A. DNA from a parent DNA.
- B. mRNA from pre mRNA.
- C. pre-mRNA from DNA.
- D. protein through mRNA.

ANSWER: C

103. RNA required for the protein synthesis _____

- A. mRNA
- B. tRNA
- C. rRNA
- D. All of these

ANSWER: D

104. Sigma and Rho factors are required for _____.

- A. translation.
- B. replication.
- C. transcription.
- D. polymerisation.

ANSWER: C

105. Okazaki fragments are small bits of _____.

- A. RNA.
- B. DNA.
- C. RNA with DNA heads.
- D. DNA with RNA heads.

ANSWER: D

106. Which mode of information transfer usually does not occur?

- A. DNA to DNA.
- B. DNA to RNA.
- C. DNA to protein.
- D. All occur in all cell.

ANSWER: C

107. The mitochondrial DNA is _____.

- A. like the nuclear DNA.
- B. ss, linear.
- C. ds, circular.
- D. ss, circular.

ANSWER: C

108. A synthetic RNA having the sequence of UUUUUU will give a protein having poly _____.

- A. alanine.
- B. phenyl alanine
- C. glycine.
- D. methionine

ANSWER: C

109. Lac operon of E. coli contains _____ genes in continuity.

- A. regulator and operator.
- B. operator and structural.
- C. regulator and structural.
- D. both a and b.

ANSWER: D

110. An mRNA of eukaryotes can code for _____ polypeptide.

- A. one.
- B. two.
- C. three.
- D. five.

ANSWER: A

111. RNA synthesis requires _____.

- A. RNA primer.
- B. RNA template.
- C. DNA template.
- D. DNA primer.

ANSWER: C

112. The codon for phenyl alanine is _____.

- A. AAA.
- B. CCC.
- C. GGG.
- D. UUU.

ANSWER: D

113. The blue print for genetic information resides in _____.

- A. mRNA.
- B. tRNA.
- C. rRNA.
- D. DNA.

ANSWER: D

114. Genes holds _____.

- A. DNA.
- B. RNA.
- C. lipoproteins.
- D. chromoproteins.

ANSWER: A

115. Codons are in _____.

- A. DNA.
- B. mRNA.
- C. tRNA.
- D. rRNA.

ANSWER: B

116. The genetic code operates via the _____.

- A. protein moiety of DNA.
- B. base sequence of DNA.
- C. nucleotide sequence of mRNA.
- D. base sequence of tRNA.

ANSWER: C

117. Anticodons are present in _____.

- A. DNA.
- B. mRNA.
- C. tRNA.
- D. rRNA.

ANSWER: C

118. One amino acid being coded by more than one triplet is due to _____ of code.

- A. universality.
- B. colinearity.
- C. overlapping.
- D. degeneracy.

ANSWER: D

119. Kornberg enzyme is _____.

- A. DNA polymerase I.
- B. DNA polymerase III.
- C. RNA polymerase.
- D. DNA polymerase II.

ANSWER: A

120. The replisome which carries the synthesis of DNA has _____.

- A. DNA polymerase.
- B. RNA primase.
- C. helicase.
- D. all the above.

ANSWER: D

121. Eukaryotic RNA polymerase II is located in _____.

- A. spliceosome.
- B. nucleoplasm.

- C. nucleolus.
 - D. cytosol.
- ANSWER: B

122. Promoter binding function is assigned to which subunit of RNA polymerase in E.coli?

- A. Alpha.
- B. Beta.
- C. Omega.
- D. Sigma.

ANSWER: D

123. An antibiotic interferes with the ability of the ribosome to move. What affect would exposure to this chemical have on a bacterial cell?

- A. protein synthesis will be affected.
- B. the protein synthesized will be shorter than normal.
- C. the protein synthesized will be longer than normal.
- D. no proteins will be produced.

ANSWER: D

124. The CCA at 3prime end of tRNA is _____.

- A. the anticodon stem.
- B. amino acid attachment site.
- C. DHU loop.
- D. T stem.

ANSWER: B

125. In the wobble pairing, wobble position is in _____.

- A. the 3rd base of the codon.
- B. the 1st base of the codon.
- C. unusual base.
- D. the whole of anticodon.

ANSWER: A

126. Eukaryotic cells can control gene expression by which of the following mechanisms?

- A. histone acetylation of nucleosomes
- B. DNA acetylation
- C. RNA induced modification of chromatin structure
- D. repression of operons

ANSWER: A

127. Which enzyme is used to synthesize a short RNA for initiation of DNA?

- A. Helicase.
- B. Primase.
- C. DNA ligase .
- D. Exonuclease.

ANSWER: B

128. Which of the following experiment gave proof that replication and formation of new phase is dependent on DNA and not on protein?

- A. Transformation.
- B. Conjugation.
- C. Blender.
- D. All the above.

ANSWER: D

129. The proteins for DNA replication in E.coli associate to form _____.

- A. primosome.
- B. spliceosome.

- C. replisome.
 - D. autosome.
- ANSWER: C

130. Binding of holoenzyme to promoters involved local melting of DNA to form _____ complex.

- A. open promoter.
- B. closed promoter.
- C. stem and loop.
- D. termination.

ANSWER: A

131. An enzyme (used by all retroviruses) that transcribes genetic information of the virus from RNA into DNA, is : Add Question to Review List Reverse transcriptase Right!

- A. Reverse transcriptase
- B. RNA polymerase
- C. Restriction nuclease
- D. Methylase

ANSWER: A

132. During elongation of a polypeptide _____.

- A. an amino acyl tRNA enters P site.
- B. an amino acyl tRNA synthetase acts.
- C. ribosomes, tRNA & protein dissociates.
- D. an amino acyl tRNA enters A site.

ANSWER: A

133. Complementary RNA bases to 3' ends of DNA strand are added by _____

- A. polymerase
- B. telomerase
- C. gyrase
- D. helicase

ANSWER: B

134. DNA that is located between genes and is not used to specify a product but is discarded during RNA processing is known as _____.

- A. intron.
- B. exon.
- C. spacer.
- D. regulatory.

ANSWER: A

135. What is the chemical basis of gene imprinting?

- A. Phosphorylation of DNA.
- B. Methylation of DNA.
- C. Oxidation of DNA.
- D. Glycosylation of DNA.

ANSWER: B

136. Spliceosomes consists of 4 different _____.

- A. small nuclear ribonucleo protein particles (SnRNPs).
- B. signal sequence receptors (SSRs).
- C. signal recognition particles (SRPs).
- D. signal recognition particles receptors (SRPRs).

ANSWER: A

137. Lac operon expresses genes whose products catabolize _____

- A. maltose
- B. phosphate

- C. sucrose
 - D. lactose
- ANSWER: D

138. How many base pairs are there in the structural genes of bacteria?

- A. 50.
- B. 100.
- C. 500.
- D. 1000.

ANSWER: C

139. When more number of genes are transcribed as one mRNA, the mRNA is said to be _____.

- A. polycistronic.
- B. polyclonal.
- C. multimeric.
- D. polymeric.

ANSWER: A

140. The maximal rate of protein synthesis in bacterial cells (amino acid per second) is _____.

- A. 12-15.
- B. 3-4.
- C. Approximately 0.5.
- D. 75-100.

ANSWER: A

141. Which of the following amino acid is specified by only one codon?

- A. Glutamine.
- B. Tryptophan.
- C. Asparagine.
- D. Isoleucine.

ANSWER: B

142. The drug chloramphenicol blocks the process of _____.

- A. polypeptide chain elongation.
- B. cell wall formation.
- C. transcription.
- D. polypeptide chain initiation.

ANSWER: A

143. What percentage of mRNA is in most bacterial cells?

- A. Less than 5.
- B. 10-15.
- C. 35-40.
- D. 50-60.

ANSWER: D

144. An antibiotic that resembles the 3prime end of a charged tRNA molecule is _____.

- A. puromycin.
- B. tetracycline.
- C. streptomycin.
- D. penicillin.

ANSWER: B

145. How many polypeptide chains can be formed simultaneously by a given ribosome?

- A. One.
- B. About a dozen.
- C. Upto 30.
- D. Variable, depending on the length of mRNA.

ANSWER: D

146. Which histone protein is not a part of nucleosome?

- A. H1.
- B. H2a.
- C. H2b.
- D. H3.

ANSWER: A

147. In which form heterochromatin is present in DNA?

- A. Looped solenoid.
- B. Naked DNA.
- C. Extended nucleosome.
- D. Solenoid.

ANSWER: D

148. Every polypeptide chain formed in translation starts with the amino acid

-
- A. lysine
 - B. serine
 - C. alanine
 - D. methionine

ANSWER: D

149. The term plasmid was first coined by the scientist_____.

- A. Lederberg.
- B. M.Olson.
- C. Boyer.
- D. Cohen.

ANSWER: A

150. The base thymine is always paired with _____.

- A. adenine.
- B. guanine.
- C. cytosine.
- D. thymine.

ANSWER: A

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