

English

1. A biocatalyst that increases the rate of the reaction without being changed is known as.

- (A) Aluminum oxide
- (B) Silicon dioxide
- (C) Hydrogen peroxide
- (D) Enzyme

Correct Option(s): D

English

2. A single strand of nucleic acid tagged with a radioactive molecule is called _____

- (A) Plasmid
- (B) Selectable marker
- (C) Vector
- (D) Probe

Correct Option(s): D

English

3. The human nervous system is capable of a wide range of functions. What is the basic unit of the nervous system?

- (A) Neuron
- (B) Cerebrospinal fluid
- (C) Meninges
- (D) Glial cell

Correct Option(s): A

English

4. Which term represents a pair of contrasting characters?

- (A) Codominant genes
- (B) Allelomorphs
- (C) Homozygous
- (D) Heterozygous

Correct Option(s): B

English

5. Lyase catalyzes one of the following reactions.

- (A) Intramolecular rearrangement of bonds
- (B) Breaking of bonds
- (C) Transfer of group from one molecule to another
- (D) Formation of bonds

Correct Option(s): B

English

6. The first protein sequenced by Frederick Sanger was

- (A) Myoglobin
- (B) Myosin
- (C) Haemoglobin
- (D) Insulin

Correct Option(s): D

English

7. Which ratio is constant for DNA?

- (A) $(A + C) / (U + G)$
- (B) $(A + T) / (G + C)$
- (C) $(A + G) / (T + C)$
- (D) $(A + U) / (G + C)$

Correct Option(s): C

English

8. Which one of the following nucleic acids has a left handed helix?

- (A) Z-DNA
- (B) A-DNA
- (C) T-RNA
- (D) M-RNA

Correct Option(s): A

English

9. Which of the following leads to disruption of nucleosomal structure?

- (A) Phosphorylation
- (B) Methylation
- (C) Acetylation
- (D) Carboxylation

Correct Option(s): B

English

10. The chromosomal DNA complexes with

- (A) Three types of histone as H1, H2A and H4
- (B) five types of histone as H1, H2A, H2B, H3 and H4
- (C) four types of histone as H1, H2A, H3 and H4
- (D) two types of histone as H1 and H4

Correct Option(s): B

English

11. 1 pico moles/ml is equal to

- (A) 1 nano molar
- (B) 1 micro molar
- (C) 1 milli molar
- (D) 1molar

Correct Option(s): A

English

12. The major interaction responsible for stabilizing plasma membrane is.....

- (A) Hydrophilic interactions
- (B) Hydrophobic interactions
- (C) Ionic bonds
- (D) Covalent bonds

Correct Option(s): B

English

13. Which structure does tend to vanish always during meiosis and mitosis?

- (A) Plasma membrane
- (B) Plastids
- (C) Nucleolus and nuclear membrane
- (D) All of these

Correct Option(s): C

English

14. Balbiani rings are found in..

- (A) Autosome
- (B) Polytene chromosome
- (C) Lampbrush chromosome
- (D) Heterosome

Correct Option(s): B

English

15. Conserved gene order can be termed as

- (A) Ortholog
- (B) Synteny
- (C) Paralog
- (D) Microarray

Correct Option(s): B

English

16.

If lactose and glucose are provided in the growth medium of a culture of E. coli, then _____

- (A) Lactose operon is not transcribed
- (B) Lactose metabolism is favored
- (C) Both lactose and glucose are metabolized at same rate
- (D) Adenylate cyclase is activated

Correct Option(s): A

English

17. Protein-coding genes can be identified by

- (A) Transposon tagging
- (B) ORF scanning
- (C) Zoo-blotting
- (D) Nuclease S1 mapping

Correct Option(s): B

English

18. Expression of genes can be analyzed by

- (A) Northern analysis
- (B) Southern analysis
- (C) Comparative genomics
- (D) RNA interference

Correct Option(s): A

English

19. Which of the following is a chemical nucleotide sequencing method?

- (A) Sanger method
- (B) Maxam- Gilbert method
- (C) Edmans method
- (D) Automated sequencing method

Correct Option(s): B

English

20. Which of the following is the first completed and published gene sequence?

- (A) Φ X174
- (B) T4 phage
- (C) M13 phage
- (D) Lambda phage

Correct Option(s): A

English

21.

During which phase of growth of *Penicillium chrysogenum* maximum antibiotic production takes place ?

- (A) during the first phase
- (B) during the second phase
- (C) during the third phase
- (D) same in all the phases

Correct Option(s): B

English

22.

PCR that allows a researcher to amplify several genes in one reaction is called as _____

- (A) Nested
- (B) Real-time
- (C) Multiplex
- (D) Reverse transcriptase

Correct Option(s): C

English

23. Termination of replication in prokaryotes is triggered by....

- (A) Primase
- (B) Tus protein
- (C) SSB
- (D) DNA polymerase

Correct Option(s): B

English

24. RNA polymerase activity is associated to....

- (A) DNA dependent RNA synthesis
- (B) DNA dependent DNA synthesis
- (C) RNA dependent DNA synthesis
- (D) RNA dependent RNA synthesis

Correct Option(s): A

English

25. Name the site where upstream sequences are located?

- (A) After the start point
- (B) Prior to start point
- (C) In the middle of DNA
- (D) Right border of DNA

Correct Option(s): B

English

26. The selection of translation initiation site on the mRNA is assisted by which of the rRNA molecule?

- (A) 16S rRNA
- (B) 28S rRNA
- (C) 5S rRNA
- (D) 5.8S rRNA

Correct Option(s): A

English

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

- (A) Regulatory RNA sequences
- (B) Regulatory DNA sequences
- (C) Promoter portions of genes
- (D) Enzymes of cells

Correct Option(s): B

English

28.

One of the following signaling pathway involves physical contact between the cells involved. which is that ?

- (A) Paracrine signaling
- (B) Juxtacrine signaling
- (C) Intracellular signaling
- (D) Autocrine signaling

Correct Option(s): B

English

29. An excised piece of leaf or stem used in micropropagation is called as...

- (A) Scion
- (B) Microshoot
- (C) Explant
- (D) None of the above

Correct Option(s): C

English

30.

Indole-3-acetic acid is the most common naturally occurring plant hormone. It belongs to a class of

- (A) Cytokinin
- (B) Ethylene
- (C) Auxin
- (D) Gibberellin

Correct Option(s): C

English

31. In C₃ and C₄ plants, primary carboxylation takes place with the help of....

- (A) PEP carboxylase and RuBP carboxylase
- (B) PEP carboxylase and pyruvate carboxylase
- (C) RuBP carboxylase and pyruvate carboxylase
- (D) RuBP carboxylase and PEP carboxylase

Correct Option(s): D

English

32. Which of the following reactions is required for proofreading during DNA replication by DNA polymerase III?

- (A) 5' to 3' exonuclease activity
- (B) 3' to 5' exonuclease activity
- (C) 3' to 5' endonuclease activity
- (D) 5' to 3' endonuclease activity

Correct Option(s): B

English

33.

Which of the following is not an example of an inducible operon?

- (A) Lactose operon
- (B) Galactose operon
- (C) Maltose operon
- (D) Tryptophan operon

Correct Option(s): D

English

34. Which of the following play a role in structural support?

- (A) rRNA
- (B) mRNA
- (C) tDNA
- (D) tRNA

Correct Option(s): A

English

35. Bacterial exotoxins are

- (A) Cell wall constituents
- (B) Capsular polysaccharides
- (C) Secreted ribosomes
- (D) Secreted proteins

Correct Option(s): D

English

36. To which sequence or molecule does a repressor bind?

- (A) Promoter
- (B) RNA polymerase
- (C) Operator
- (D) enhancer

Correct Option(s): C

English

37.

Which of the following is not part of core RNA polymerase in prokaryotes?

- (A) alpha subunit
- (B) beta subunit
- (C) both alpha subunit and beta subunit
- (D) sigma subunit

Correct Option(s): D

English

38. Chromosome walking

- (A) is used in genetic mapping
- (B) can be used to close physical sequence gaps
- (C) occurs in mitosis
- (D) requires a genomic DNA library

Correct Option(s): D

English

39. The process of finding the relative location of genes on a chromosome is called

- (A) Gene tracking
- (B) Genome walking
- (C) Genome mapping
- (D) Chromosome walking

Correct Option(s): C

English

40. Which one of the following also acts as a catalyst in a bacterial cell?

- (A) 5S rRNA
- (B) 16S rRNA
- (C) sn RNA
- (D) 23S rRNA

Correct Option(s): D

English

41.

Which of the following characteristics apply to prokaryotes ?

- (A) They reproduce only by mitosis
- (B) They include bacteria
- (C) They lack a nucleus
- (D) They are composed of single cells

Correct Option(s): A

English

42. Name the protein, which is responsible for the formation of RNA primer?

- (A) Topoisomerase
- (B) Gyrase
- (C) Helicase
- (D) Primase

Correct Option(s): D

English

43. DNA molecule of 3000 base pairs will have how many complete turns?

- (A) 30
- (B) 300
- (C) 3000
- (D) 3

Correct Option(s): B

English

44. Which one of the following is NOT a principal component of innate immunity?

- (A) Mucosal epithelia
- (B) Dendritic cells
- (C) Complement system
- (D) Memory B-cells

Correct Option(s): D

English

45. The mutation which will not affect the function of a protein is

- (A) nonsense mutation
- (B) silent mutation
- (C) frameshift mutation
- (D) all of these

Correct Option(s): B

English

46. Which of the following statements is correct about column chromatography?

- (A) Resolution improves as column length increases
- (B) Mobile phase is a porous solid material kept in the column with appropriate chemical characteristics
- (C) Stationary phase is a buffered solution that percolates through the mobile phase
- (D) Large proteins exit the column faster than tiny proteins

Correct Option(s): A

English

47. Which of the following catalyzes the reversible degradation of 2-phosphoglycerate to phosphoenolpyruvate?

- (A) Trypsin
- (B) Enolase
- (C) Chymotrypsin
- (D) Hexokinase

Correct Option(s): B

English

48. Which of the following is an example of epimers?

- (A) Mannose & Glucose
- (B) Glucose & Ribose
- (C) Galactose & Mannose
- (D) Glucose & Galactose

Correct Option(s): D

English

49. Which of the following is a choline-containing lipid?

- (A) Phosphatidylethanolamine
- (B) Phosphatidylserine
- (C) Sphingomyelin
- (D) Phosphatidylglycerol

Correct Option(s): C

English

50. Whenever the cell's ATP supply is depleted, which of the following enzyme's activity is increased?

- (A) Pyruvate kinase
- (B) Phosphofructokinase-1
- (C) Hexokinase
- (D) Glucokinase

Correct Option(s): B