

26 Multiple choice questions

1. radiation or substances which cause a mutation
 - a. mutation
 - b. mitosis
 - c. meiosis
 - d. mutagens

2. the effect of a gene which can be seen or measured; the result of decoding information in the DNA sequence of a gene to produce a protein
 - a. transcription
 - b. DNA replication
 - c. gene mutation
 - d. gene expression

3. organelles in the cytoplasm of cells that are responsible for protein synthesis
 - a. meiosis
 - b. ribosomes
 - c. mitosis
 - d. genome

4. a vehicle of amino acid transport in protein synthesis
 - a. messenger RNA (mRNA)
 - b. transfer RNA (tRNA)
 - c. RNA polymerase
 - d. transcription

5. changes in the nucleotide sequence of genetic material which can be passed on to offspring
 - a. somatic mutations
 - b. gene mutation
 - c. induced mutations
 - d. gametic mutations

6. a sequence of three bases on DNA or mRNA that codes for a single amino acid
 - a. anticodon
 - b. meiosis
 - c. genome
 - d. codon

7. the process by which amino acids are arranged in sequence to form proteins, coded for by the DNA and involving mRNA, transfer RNA and various enzymes
 - a. protein synthesis
 - b. ribosomes
 - c. meiosis
 - d. mitosis

8. alterations in the arrangement of a whole chromosome or a large section of a chromosome (multiple genes)
 - a. somatic mutations
 - b. induced mutations
 - c. chromosome mutations
 - d. gametic mutations

9. the process of cell division whereby somatic (body) cells undergo a single nuclear division, giving rise to two genetically identical daughter cells
 - a. mitosis
 - b. meiosis
 - c. ribosomes
 - d. mutation

10. a molecule consisting of a single chain of amino acids joined together by peptide bonds
 - a. RNA polymerase
 - b. mutation
 - c. polypeptide
 - d. genome

11. a structural change in genetic material that usually arises during DNA replication and that may give rise to new heritable characteristics
 - a. mutation
 - b. gene mutation
 - c. mitosis
 - d. mutagens

12. the total genetic material within a cell or an individual
 - a. codon
 - b. meiosis
 - c. genome
 - d. mitosis

13. able to be passed on to the next generation and future generations due to its genetic basis
 - a. helicase
 - b. genome
 - c. mitosis
 - d. heritable

14. changes in DNA sequences that occur in somatic (non-sexual) cells
 - a. gene mutation
 - b. induced mutations
 - c. somatic mutations
 - d. gametic mutations

15. an enzyme which functions in DNA replication to break the hydrogen bonds holding the two strands of the DNA molecule together
 - a. helicase
 - b. heritable
 - c. meiosis
 - d. genome

16. an alteration in the nucleotide arrangement in DNA as a result of exposure to an environmental agent such as a chemical or radiation
 - a. gametic mutations
 - b. gene mutation
 - c. somatic mutations
 - d. induced mutations

17. a protein molecule that catalyses the synthesis of DNA from nucleotides
 - a. DNA replication
 - b. DNA polymerase enzyme
 - c. polypeptide
 - d. genome

18. a sequence of three bases on tRNA which is complementary to the codon on mRNA
 - a. anticodon
 - b. meiosis
 - c. codon
 - d. mutation

19. the DNA strand that is complementary to mRNA and acts as a template during transcription
 - a. spontaneous mutations
 - b. transfer RNA (tRNA)
 - c. protein synthesis
 - d. non-coding strand or sense strand

20. the alteration in the DNA sequence of genetic material resulting in a change in a single gene
 - a. mutation
 - b. gene mutation
 - c. gametic mutations
 - d. gene expression

21. the synthesis of RNA from a DNA template
 - a. gene mutation
 - b. DNA replication
 - c. transcription
 - d. anticodon

22. a protein molecule that catalyses the synthesis of DNA from nucleotides
 - a. RNA polymerase
 - b. polypeptide
 - c. ribosomes
 - d. helicase

23. the process whereby DNA makes an identical copy of itself in preparation for cell division
 - a. gene expression
 - b. transcription
 - c. gene mutation
 - d. DNA replication

24. a process of cell division that is considered to be a reduction division because it halves the number of chromosomes in the resulting gametes that it produces
 - a. meiosis
 - b. mutation
 - c. mitosis
 - d. genome

25. a single-stranded molecule of RNA that is made in the nucleus from a DNA template and then moves to the cytoplasm, where its genetic code determines the amino acid sequence in protein synthesis
- gene expression
 - messenger RNA (mRNA)
 - gene mutation
 - transfer RNA (tRNA)
26. changes in the DNA sequences that arise randomly as a result of an error in a natural process, such as DNA replication in cells
- spontaneous mutations
 - induced mutations
 - gametic mutations
 - somatic mutations