

# Biology and Medicine Quiz

Biology · Answer Key · 33 Questions

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**1. Which field of science studies heredity and variability of organisms?**

- A) Embryology
- B) Genetics**
- C) Physiology
- D) Cytology

**2. What is the study of the structure and shape of organisms and their organs called?**

- A) Anatomy
- B) Anthropology
- C) Morphology**
- D) Physiology

**3. Which branch of medicine deals with the diseases of internal organs and their treatment?**

- A) Pediatrics
- B) Gynecology
- C) Internal Medicine**
- D) Pathology

**4. What is the science of the development of embryos called?**

- A) Embryology**
- B) Gynecology
- C) Psychology
- D) Sociology

**5. Which of the following is NOT a basic property of cellular organisms?**

- A) Metabolism
- B) Autotrophy**
- C) Irritability
- D) Reproduction

**6. What are the simplest cells?**

- A) Viruses
- B) Bacteria
- C) Prokaryotes**
- D) Eukaryotes

7. Which of the following structures is NOT a membrane-bound organelle?

- A) Vacuoles
- B) Golgi apparatus**
- C) Endoplasmic reticulum
- D) Mitochondria

8. What is the main function of lysosomes in animal cells?

- A) Energy production
- B) Breakdown of substances**
- C) Photosynthesis
- D) Synthesis of proteins

9. Which organelle contains its own DNA?

- A) Ribosome
- B) Lysosome
- C) Nucleus**
- D) Golgi apparatus

10. Mitochondria are responsible for:

- A) Protein synthesis
- B) Cellular respiration**
- C) Fat synthesis
- D) Photosynthesis

11. Ribosomes are involved in the synthesis of:

- A) Nucleic acids
- B) Fats
- C) Carbohydrates
- D) Proteins**

12. Protein synthesis on ribosomes uses tRNA molecules to transport:

- A) DNA to the ribosome
- B) Amino acids to the site of synthesis**
- C) Proteins from the ribosome
- D) mRNA from the nucleus

13. Which part of the cell is the primary site of protein synthesis?

- A) Lysosomes
- B) Mitochondria
- C) Smooth ER
- D) Ribosomes**

**14. Which statement about chromosomes in the nucleus of a eukaryotic cell is correct?**

- A) They can be observed throughout the entire life of the cell
- B) They are arranged in a karyotype from longest to shortest**
- C) They are made of pure DNA molecules
- D) They are double-stranded structures with two centromeres

**15. What is the nucleolus?**

- A) Site of DNA synthesis
- B) Site of RNA synthesis**
- C) A nucleus enclosed by its own membrane
- D) Always a single structure in the nucleus

**16. Which organelle is responsible for the synthesis of lipids and carbohydrates?**

- A) Nucleus
- B) Rough ER
- C) Smooth ER**
- D) Golgi apparatus

**17. Microtubules, a component of the cytoskeleton, are involved in:**

- A) Forming a contractile ring during cell division
- B) Aiding in fertilization of the egg by sperm
- C) Localizing organelles within the cell
- D) Creating the mitotic spindle**

**18. Mitosis is described as:**

- A) Indirect cell division**
- B) A process involving two divisions
- C) A process that occurs only in plant cells
- D) A process that is accelerated by cytostatics

**19. Meiosis (reductional division) is a process that:**

- A) Starts with every menstrual cycle in women
- B) Consists of two successive cell divisions**
- C) Is essentially identical to mitosis
- D) Ensures the same chromosomal set in the mother and daughter cells

**20. What is the term for the process where tissues differentiate during embryogenesis?**

- A) Regeneration
- B) Reductional division
- C) Cell cycle
- D) Differentiation**

**21. What does 'genotype' refer to?**

- A) All genes of a cell**
- B) An individual with identical alleles for a trait
- C) An individual with different alleles for a trait
- D) All the traits of an organism

**22. What does 'phenotype' refer to?**

- A) All genes of a cell
- B) An individual with identical alleles for a trait
- C) An individual with different alleles for a trait
- D) All the traits of an organism**

**23. Which statement about human chromosomes is correct?**

- A) Human chromosomes are arranged in a karyotype from longest to shortest. Humans have 22 pairs of autosomes and one pair of sex chromosomes.
- B) Each chromosome at the beginning of cell division consists of two future daughter chromosomes - sister chromatids, connected at a region called the centromere.**
- C) Chromosomes are made of pure DNA molecules.
- D) Chromosomes are double-stranded structures with two centromeres.

**24. Which statement about mutations is correct?**

- A) Mutations are hereditary changes in genes. Factors that cause them are called mutagens. Most mutations are harmful.**
- B) Some human diseases, like diabetes, have polygenic inheritance, meaning they are determined by the influence of many genes.
- C) Mutations are always beneficial.
- D) Mutations only occur in somatic cells.

**25. Which of the following diseases is caused by chromosomal abnormalities?**

- A) Congenital hip dislocation
- B) Color blindness
- C) Cleft lip and palate
- D) Down syndrome**

**26. Which of the following diseases is sex-linked?**

- A) Phenylketonuria
- B) Albinism
- C) Hemophilia**
- D) Inherited deafness

**27. What type of inheritance does luxation of the hip joint have?**

- A) Recessive inheritance
- B) Polygenic inheritance**
- C) Sex-linked inheritance
- D) Dominant inheritance

**28. Which of the following statements about hemophilia is correct?**

- A) Women are more frequently affected by the disease
- B) A carrier woman has significantly reduced blood clotting
- C) An affected man will have carrier daughters**
- D) A woman suffering from hemophilia cannot have healthy children

**29. If a father has hemophilia and the mother is healthy, then:**

- A) Half of his daughters will be affected
- B) Half of his sons will be affected
- C) All of his daughters will be carriers**
- D) He will have daughters suffering from hemophilia and healthy sons

**30. Daltonism (color blindness) is characterized by:**

- A) Primarily affecting women
- B) Being caused by a mutation on the Y chromosome
- C) Being a sex-linked inherited disease**
- D) Always being transmitted from father to son

**31. What is Eugenics?**

- A) It deals with predicting the occurrence of hereditary diseases in families
- B) It aims to improve the gene pool of the human population**
- C) It modifies the phenotype without changing the genotype
- D) It is a modern genetic method dealing with hereditary metabolic disorders

**32. Which of the following is NOT a genetic disease?**

- A) Hemophilia
- B) Color blindness
- C) Cretinism**
- D) Down syndrome

**33. Daltonism (color blindness):**

- A) Is an inherited metabolic disease
- B) Primarily affects women
- C) Is the inability to distinguish red and green colors**
- D) Is not considered a hereditary disease