

QCM

1. What is the main structural role of the cytoskeleton in eukaryotic cells?

- A) Protects the DNA from mutations
- B) Provides shape and anchors organelles
- C) Regulates the cell cycle
- D) Aids in photosynthesis

2. Which type of cytoskeletal filament has a diameter of approximately 7 nm and is primarily made of actin?

- A) Microfilaments
- B) Intermediate filaments
- C) Microtubules
- D) Centrioles

3. Where are intermediate filaments most notably found in the cell?

- A) In the cell membrane
- B) Surrounding the nucleus (lamina)
- C) Inside the mitochondria
- D) In the Golgi apparatus

4. Which of the following best describes the structure of microtubules?

- A) Double helix
- B) Twisted strands of actin
- C) Hollow tubes made of 13 protofilaments
- D) Bundles of keratin filaments

5. What function do microfilaments serve under the cell membrane?

- A) Structural support and contractile functions
- B) Formation of the mitotic spindle

- C) Binding to DNA
- D) Energy production

6. Which cytoskeletal component is involved in the movement of cellular structures, such as vesicles and mitochondria?

- A) Intermediate filaments
- B) Microtubules
- C) Cell membrane lipids
- D) DNA strands

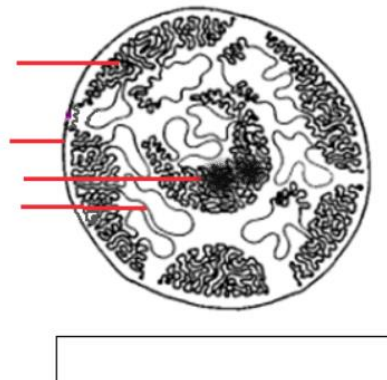
7. What is the role of actin in microvilli?

- A) Forms a flexible outer coating
- B) Reinforces the internal structure with parallel filaments
- C) Engages in cellular respiration
- D) Transports proteins across membranes

8. What specific structure within the cytoskeleton aids in the movement of flagella and cilia?

- A) Centrosome
- B) Actin bundles
- C) Axoneme
- D) Lamina

Exercise 1. Label and give a title to the following diagram:



Exercise 2. Complete the following table:

| Characteristic | Euchromatin | Heterochromatin |
|--------------------------------------|-------------|-----------------|
| Condensation | | |
| Localization | | |
| Other name | | |
| Gene content | | |
| Appearance under electron microscope | | |
| Percentage of chromatin | | |
| Genetic activity | | |

Exercise 3. Label and give a title to each of the following two structures, indicating the difference between them.

