Organelles of Animal Cells: The Cytoskeleton

1. List the 3 types of filamentous structures that form the cytoskeleton, then do the following:

   • For each type, list one role that it plays in cell structure.

   • Indicate which type is composed of actin and which type is composed of tubulin proteins.

   • Draw each type, indicating their basic shape and size, relative to one another.

   • Draw a cell and indicate where each type of filamentous structure is located.

2. Explain why microfilaments and microtubules are said to have a dynamic structure.

3. Compare the role of motor proteins in moving a microfilament vs. moving a cargo.
4. Give 3 examples that illustrate the role of microfilaments in cell motility.

5. Describe how vesicles are moved through the cytoplasm, including the roles of microtubules and motor proteins.

6. Regarding cilia and flagella:
   - Distinguish between flagella and cilia based on their length and beating pattern.
   - Describe the interior of flagella and cilia (include a labeled diagram).
   - Explain how microtubules and motor proteins interact to generate motion.

7. Distinguish between the terms centrosome, centriole, and basal body.