

系所組別： 細胞生物與解剖學研究所

考試科目： 組織學

考試日期： 0308，節次： 1

※ 考生請注意：本試題 可 不可 使用計算機

1. The tissues in our body are classified into four major types: epithelium, connective tissue, muscle, and nervous tissue. How do you distinguish between these four types of tissues in sections stained with hematoxylin and eosin? (15%)
2. Intercellular junctions, categorized as occluding junction (tight junctions), anchoring junction (zonula adherens, desmosomes and hemidesmosomes), and communicating junction (gap junctions), distribute unevenly and function differently in the tissues. Please answer the following questions.
  - (1) What are the structural characteristics and functional roles of these junctional complexes ? (20%)
  - (2) Where are these junctional complexes located in the epithelial tissue? How does their distribution in the muscle, nerve, and connective tissues differ from that in the epithelium? (10%)
3. The structural features are closely linked to the functions of any given tissue or organ. In your view, how does the structure of three different muscle types, i.e. skeletal, cardiac and smooth muscles, reflect their distinct functions in the body? (20%)
4. The structural features of the digestive tract provide an excellent example to reflect their functions. Please compare the segments of the esophagus, the stomach, the small intestine, and the large intestine for their structural features and correlate these features with functional differences. (20%)
5. Many important cellular features can not be detected in tissue sections stained with hematoxylin-and-eosin. Please list three methods and describe how they can further clarify the structural characteristics of cells, tissues, and organs. (15%)