

試題十題共一頁, 總分 100 分。請依題號順序於答案卷作答; 未依序作答者不予計分。

1. Describe the structure and biological function of the (a) endoplasmic reticulum (b) Golgi. (10%)
2. Describe the structure and function of (a) nucleoli and (b) peroxisome. (10%)
3. Describe the alteration of (a) cyclin and CDKs (b) nuclear envelope (c) microtubule (d) centromere during cell cycle G2/M transition. (10%)
4. Describe the complex formed at "focal adhesion." (10%)
5. Describe the endocytosis pathway commonly employed in epithelial cell. (10%)
6. Please compare the detailed structure of prokaryotic (bacterial cell) and eukaryotic cells (including animal and plant cells). (10%)
7. Please describe the differences of targeting proteins into mitochondrion and peroxisome, and the targeting mechanism of peroxisomal proteins. (10%)
8. Please describe the stages of spermatogenesis and oogenesis in mammalian systems, and the processes of mammalian fertilization. (10%)
9. Please give the definition of following terms and their biological functions.
 - a. Morphogens. (5%)
 - b. Maternal effect genes. (5%)
 - c. Germ cells and somatic cells. (5%)
 - d. Embryonic stem cells and stem cells. (5%)