

1. Compare the differences of morphology and function between the erythrocyte and leukocyte? (10%)
2. (a) Name the elements of the heart's conducting system in order, beginning with the pacemaker.  
(b) What are the functions of this conducting system ? (10%)
3. Describe the effect and its mechanism of transection or other insults on the peripheral nerve in immature and mature animals. (10%)
4. Define and distinguish between phototaxis and chemotaxis. (10%)
5. To our knowledge, the insects have better adaptability in nature competition with other species. Please list all five possible factors to explain the reason! (10%)
6. Please compare and contrast the digestive adaptation of a carnivore and herbivore! (10%)
7. Please compare and contrast the osmoregulatory problems and adaptation between marine and freshwater bony fishes! (10%)
8. Explain why menstruation and ovulation do not occur during pregnancy! (10%)
9. What is allosteric regulation of enzyme activity? (10%)
10. Please describe how hydrophobic and hydrophilic ligands activate intracellular signals! (10%)