

1. Please describe the nerve circuit responsible for the knee-jerk reflex which is initiated by striking the patella ligament with a rubber mallet. (10%)
2. Describe how pancreatic enzymes become activated in the lumen of the intestine. Why are these mechanisms needed. (10%)
3. Describe the chemical and electrical events when eyes receive the light. (10%)
4. Describe the carotid and aortic bodies in terms of their nature, function and mode of action. (10%)
5. Please describe the changes of the venous plasma concentration of FSH, LH, estrogen and progesterone during the menstrual cycle. (10%)
6. Discuss the short-term maintenance of the normal blood pressure when there is a blood loss. (10%)
7. Please describe the causes of the P, QRS and T waves of an ECG (electrocardiograph) and indicate when each of these waves occurs in the cardiac cycle. (10%)
8. List the renal responses during acidosis. (10%)
9. Please describe the glomerular ultrafiltration process of plasma during urine production in the kidney. (10%)
10. Nitric oxide is produced by endothelium cells upon exposure to acetylcholine in the blood stream. Please describe the process of NO production in the endothelium cell and describe how vasodilation response is produced by NO generated in endothelium cells. (10%)