

1. Please describe the process of oogenesis in detail, including the morphological changes of follicle/oocyte and the process of meiosis and mitosis before birth and at puberty. (10 %)
2. Describe the process of neurulation and include definitions for terms "neural folds", "neural tube", and "neural tube closure". Where is neural tube closure initiated and how does it proceed? What week in gestation is the process completed? What happens if neural tube closure fails cranially? Caudally? How can the neural tube defect (NTD) be prevented? (10 %)
3. Please describe the formation of placenta, including its origin, structure, circulation and functions. (10 %)
4. Please describe the molecular regulation of nerve differentiation in the spinal cord. (10 %)
5. A man complains about having difficulty swallowing. What vascular abnormality or abnormalities might produce this complaint? What is its embryological origin? (10 %)

以下 6 至 10 題請回答有關胚胎之器官發育時受何種基因或因子或蛋白所決定？(22%)

6. What is the testis determining gene? (2%)
7. What is a transcriptional regulator that can also induce testes differentiation? (2%)
8. What gene and factor can stimulate branching and growth of the ureteric buds? (6%)
9. What is to determine and to form the dorsal pancreatic bud ? (6%)
10. What is to determine and to form the ventral pancreatic bud and what is the downstream effectors ? (6%)
11. If a new born infant happened vomiting after eating food, please explain and distinguish the obstruction happened in the pylorus of the stomach from the duodenum. And explain the induced mechanism of the digestive canal obstruction happened. (10%)
12. What is a cranioschisis? How do to form the teratology of cranioschisis? And what is the final result of this disease? (8%)
13. Please explain and distinguish the happed reasons of the omphalocele from the gastroschisis. (10%)

試題隨卷繳回