

※ 注意：請於答案卷內之「選擇題作答區」依序作答。

一、選擇題 (10%)

1. Primary oocytes remain in their 1st meiotic division, diplotene stage, due to the influence of :
 - A) progesterone
 - B) estrogen
 - C) oocyte maturation inhibitor
 - D) human chorionic gonadotropin
 - E) none of the above
2. If the oocyte does not become fertilized, the corpus luteum will degenerate to become a:
 - A) corpus albicans
 - B) corpus luteum of pregnancy
 - C) Trophoblast
 - D) Corpus atreticum
 - E) None of the above
3. At the beginning of each ovarian cycle, 5-15 primordial follicles begin to develop under the influence of FSH. The presence of FSH in the ovary leads to:
 - A) the endometrium to enter the proliferative stage
 - B) directly reduces the thickness of cervical mucus
 - C) stimulates production of estrogen by granulosa cells and thecal cells
 - D) Inhibits the action of growth differentiation factor (GDF-9)
 - E) None of the above
4. The release of LH from the anterior pituitary stimulates all of the following except:
 - A) estrogen release
 - B) prostaglandin production
 - C) stimulation of collagenase activity
 - D) elevates concentration of maturation
 - E) stimulates the production of progesterone
5. Which of the following is responsible for maintaining the endometrium for implantation:
 - A) estrogen
 - B) progesterone
 - C) GnRH
 - D) Chorionic gonadotropin
 - E) None of the above
6. If the oocyte is not fertilized, the corpus luteum degenerates due to which of the following:

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- A) lack of progesterone production
B) increased estrogen
C) absence of GnRH production
D) lack of human chorionic gonadotropin
E) none of the above
7. By the beginning of the fourth week, cells fanning the ventral and medial walls of the somite lose their compact organization, become polymorphous, and shift their position to surround the notochord. These cells are collectively called?
- A) epiblast
B) sclerotome
C) dermomyotome
D) angioblast
E) myotome
8. The ectodermal germ layer gives rise to all of the following except:
- A) central nervous system
B) sensory cells
C) peripheral nervous system
D) enamel of the teeth
E) vascular system
9. Dorsal root ganglia are derived from what type of embryonic cell?
- A) Neuroblasts
B) Astroblasts
C) Neural crest cells
D) Ependymal cells
E) Oligodendroblasts
10. Which of the following descriptions are **CORRECT**? (1). Transcription factors secreted from entire bilaminar germ disc is responsible for establishing the anteroposterior axis (2). OTX2 and LIM 1 are responsible for establishing cephalic region (3). BMP-4 and FGF are responsible for ventralization to form later plate mesoderm and intermediate mesoderm (4). PITX2 is responsible for establishing left sidedness (5). Nodal is a repressor to suppress expression of left-side gene on the right
- A) 1+2+3
B) 1+3+5
C) 1+4+5
D) 2+3+4
E) 3+4+5

※ 注意：請於答案卷上「非選擇題作答區」內依序作答，並應註明作答之大題及其題號。

二、問答題 (40%)

1. Please describe the formation of hypophysis (including all the anatomical parts) and their functions.
2. Please describe the molecular regulation of prosencephalic development.
3. Please describe the molecular regulation of nerve differentiation in the spinal cord.
4. Please describe the formation of teratology as follows and their defects.
 - (1). Double inferior vena cava
 - (2). Tetralogy of Fallot
 - (3). Persistent truncus arteriosus
 - (4). Arnold-Chiari malformation
 - (5). Meningoencephalocele

三、Please describe the two ossification method and different between them.(7%)

四、What is the function of AER in the limb bud?(5%)

五、Please describe the diaphragmatic hernias and final results.(7%)

六、Why does the gastric septum and duplication of gallbladder occur? Please describe its mechanism.(7%)

七、May you describe the occurred reasons of the urorectal fistula , rectovaginal fistura and rectoperineal fistura and their final results?(7%)

八、Where is the uretic bud come from? What is it final growth?(7%)

九、Where is the primordial germ cell come from? How does these cells go to where they want to go? And where is it terminal place?(10%)

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