



KENYATTA UNIVERSITY
UNIVERSITY EXAMINATIONS 2017/2018
FIRST SEMESTER EXAMINATION FOR THE DEGREE OF
BACHELOR OF SCIENCE (NURSING)
HNS 130: EMBRYOLOGY

DATE: Tuesday, 17th February 2018

TIME: 8.00 a.m. - 10.00 a.m.

INSTRUCTIONS:

Answer all the questions in answer booklets provided.

PART I

1. One of the following structures is believed to be a primary organizer or inducer during organogenesis.
 - A. somites
 - B. notochord
 - C. metanephric blastema
 - D. lens placode

2. Almost all of the internal organs are well laid down at how many months?
 - A. One Month
 - B. Two Months
 - C. Four Months
 - D. Five Months

3. One of the following structures does not turn under onto the ventral surface of the embryo during folding of the head.
 - A. heart
 - B. notochord
 - C. pericardial cavity
 - D. septum transversum

4. Closure of the foramen primum results from fusion of the:
- A. septum secundum and the fused endocardial cushions
 - B. septum secundum and the septum primum
 - C. septum primum and the fused endocardial cushions
 - D. septum primum and the septum spurium
5. The mesenchymal cells which aggregate to form blood islands are called:
- A. hemoblasts
 - B. mesoblasts
 - C. fibroblasts
 - D. angioblasts
6. The following events in the development of the abdominal cavity are greatly affected by the rapid growth of the liver:
- A. urorectal septum formation
 - B. dorsal mesentery morphogenesis
 - C. formation of inferior recess of lesser sac
 - D. herniation of midgut loop
7. One of the following duct is NOT associated with urinary system development.
- A. ureteric bud
 - B. paramesonephric duct
 - C. pronephric duct
 - D. mesonephric duct
8. One of the following is/are embryonic origin(s) of the scrotum.
- A. urethral folds
 - B. genital tubercle
 - C. genital swellings
 - D. sinovaginal bulbs
9. One of the following is most closely associated with the cerebrum.
- A. telencephalon
 - B. diencephalon
 - C. mesencephalon
 - D. myelencephalon

10. The structure dividing the cloaca into two parts is the:
- A. transverse septum
 - B. urogenital sinus
 - C. mesencurorectal septum
 - D. cloacal membrane
11. Following ovulation and fertilization of an ovum, a blastocyst develops. Growth and differentiation occurs following implantation. One of the following will develop into the placenta
- A. Neural plate
 - B. Sclerotome
 - C. Trophoblast
 - D. Yolk sac
12. The most important region of the decidua for the nourishment of the conceptus is the decidua _____.
- A. frondosum
 - B. capsularis
 - C. parietalis
 - D. basalis
13. A secondary oocyte is developing normally. At which of the following times does the second maturation division of meiosis become completed
- A. Upon implantation
 - B. During ovulation
 - C. At fertilization
 - D. In the blastocyst
14. The part of the sperm that contains enzymes to digest zona pellucida is
- A. Head
 - B. corona
 - C. acrosome
 - D. cumulus

15. The vessels of the umbilical cord are:
- A. 1 artery, 1 vein
 - B. 2 arteries, 2 veins
 - C. 1 artery, 2 veins
 - D. 2 arteries, 1 vein
16. The following is true about twins EXCEPT:
- A. Risks of chromosomal abnormalities, fetal morbidity and mortality are higher in multiple gestations than in singletons
 - B. Dichorionic twins develop from two zygotes and may be of the same sex or different sexes
 - C. Conjoined twins are due to complete splitting of the inner cell mass
 - D. Monochorionic twins have Monochorionic diamniotic placenta
17. Concerning the first week of development
- A. implantation usually occurs 12 - 24 hours after the morula enters the uterus
 - B. implantation occurs by means of adherence of the zona pellucida to the uterine epithelium
 - C. at the time of implantation, the embryo has reached the blastocyst stage
 - D. the morula forms within the uterine tube and enters the uterine lumen on the 5th day.
18. The primitive streak
- A. is the source of striated muscle cells of the abdominal wall
 - B. consists primarily of proliferating hypoblast
 - C. is the source of most of the body's epidermis
 - D. is induced to form by the underlying notochord.
19. The following event is most closely associated with the fourth week of development
- A. a commencement of blood circulation mesoderm formation
 - B. obliteration of uterine cavity by the expanding chorion
 - C. commencement of HCG (human chorionic gonadotropin) secretion
 - D. neural tube closure.

20. Concerning amniotic fluid

- A. failure of fetal kidneys to develop is one possible cause for an increase in amniotic fluid volume
- B. too much amniotic fluid interferes with proper joint development
- C. failure of the fetus to absorb swallowed amniotic fluid is one factor that might cause its volume to decline
- D. too little amniotic fluid interferes with proper lung development

PART TWO

- 1. List 8 congenital malformation of Gastrointestinal System. (4 marks)
- 2. List four components of pharyngeal arches. (4 marks)
- 3. Explain intramembraneous and endochondral ossification. (8 marks)
- 4. List eight common teratogens. (4 marks)
- 5. Differentiate the process of spermatogenesis and oogenesis. (8 marks)
- 6. Draw a labelled diagram of a mature sperm. (5 marks)
- 7. List eight functions of amniotic fluids. (4 marks)
- 8. Explain significancy of embryology. (4 marks)

PART THREE

- 1. (a) Describe tetralogy of fallot (10 marks)
- (b) Describe the development of the renal system. (10 marks)
- 2. (i) Explain the functions of the placenta. (10 marks)
- (ii) Describe thee process of fertilization in humans and its clinical significance. (10 marks)