

KATHMANDU UNIVERSITY  
End Semester Examination  
February/March, 2018

Marks Scored:

Level : B.Sc.

Year : II

Course : HBIO 204

Semester: I

Exam Roll No.:

Time: 30 mins.

F.M. : 20

Registration No.:

Date MAR 15 2018

SECTION "A"

[20 Q. × 1 = 20 marks]

1. The 4 cellular layers separating maternal and fetal blood in sequence are:
  - a. spiral artery wall, Nichbaur layer, cytotrophoblast and Hofbaur layer
  - b. syncytiotrophoblast, cytotrophoblast, villi connective tissue and fetal capillary endothelium
  - c. maternal lacuna, trophoblast layer, endothelial and fetal red blood cell
  - d. fetal capillary endothelium, villi connective tissue, cytotrophoblast and syncytiotrophoblast
2. The cell that tear down and remodel bone are the:
  - a. Osteoblasts
  - b. Osteocytes
  - c. Osteoclasts
  - d. Macrophages
3. What is the embryological origin of thymus?
  - a. First endodermal pouch
  - b. Second endodermal pouch
  - c. Third endodermal pouch
  - d. Fourth endodermal pouch
4. The third layer to form in gastrulation is the
  - a. Ectoderm
  - b. Endoderm
  - c. Mesoderm
  - d. Blastocoel
5. Which of the following system is the first organ system to be visually evident in human embryonic development?
  - a. Digestive
  - b. Musculoskeletal
  - c. Circulatory
  - d. Nervous
6. The placenta produces
  - a. Prolactin
  - b. Oxytocin
  - c. Estrogen and Progesterone
  - d. Follicular stimulating hormone
7. At the end of functional life corpus leuteum of menstruation degenerates to form
  - a. Corpus albicans
  - b. Corpus multiplicance
  - c. Corpus leuteum of pregnancy
  - d. Corpus braziliensis
8. Changes in the uterine endometrium are produced in luteal phase mainly by
  - a. Estrogen
  - b. Progesterone
  - c. HCG
  - d. LH
9. Fertilization of ovum takes place in the \_\_\_\_\_ part of the uterine tube.
  - a. Isthmus
  - b. Ampulla
  - c. Fimbria
  - d. Uterotubal junction

10. Indicate the correct statement from below:
- Prochordal plate is a rounded area on the ectodermal side of the embryonic disc where ectoderm and endoderm are not separated by mesoderm
  - Prochordal plate is a rounded area on the endodermal side of the embryonic disc where ectoderm and endoderm are separated by mesoderm
  - Primitive streak is a quadrilateral area on the ectodermal side of the embryonic disc where ectoderm and endoderm are separated by mesoderm
  - Primitive streak is a triangular area on the endodermal side of the embryonic disc where ectoderm and endoderm are separated by mesoderm
11. Cranial end of primitive streak enlarges to form
- Prochordal plate
  - Notochord
  - Notochordal process
  - Primitive knot
12. Sclerotome helps to form
- Dermis of skin
  - Skeletal muscle
  - Vertebral column and ribs
  - Skull
13. \_\_\_\_\_ condition shows nipple fail to form resulting in lactiferous duct opening into a pit.
- Amastia
  - Athelia
  - Polythelia
  - Inverted nipple
14. In the developmental process of vertebral column mesenchyme migrate medially & surrounds
- Notochord
  - Primitive streak
  - Neural pore
  - Somites
15. Ureter develops from
- Pronephros
  - Mesonephros
  - Metanephros
  - Mesonephric duct
16. 4th ventricle is the cavity of the
- Metencephalon
  - Rhombencephalon
  - Telencephalon
  - Diencephalon
17. The alar lamina arises from
- Ventral part of mantle layer
  - Dorsal part of mantle layer
  - Cranial part of mantle layer
  - Medial part of mantle layer
18. Optic vesicle is a
- Out growth of mesencephalon
  - Out growth of prosencephalon
  - Out growth of Rhomb encephalon
  - In growth of proscencephalon
19. The cells resulting from these divisions differs from other cells of the body in that the number of chromosomes is reduced to half the normal number, the genetic information in the various gametes produced is not identical is called
- Meiosis
  - Mitosis
  - Amitosis
  - Diakinesis
20. The spiral sheath which surrounds the axial filament of middle piece of spermatozoa is made up of
- Golgi bodies
  - Lysosome
  - Nucleolus
  - Mitochondria

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Level : B.Sc.  
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F.M. : 55

SECTION "B"

[3 Q. × 7 = 21 marks]  
(Long answer question)

1. Explain the process of formation of optic vesicle. Add note on anomalies of eye development. [7]
2. Describe the process of development of skin and its appendages. Mention the different anomalies of skin. [7]
3. Explain how three germ layers get formed during the time of embryogenesis. Mention the fate of different germ layers. [7]

OR

Describe the process required for the development of spinal cord. Also, show down the subdivision of neural tube and brain. [7]

SECTION "C"

(Short answer question)

4. Write short notes on: (Any SIX) [6×5=30]
  - a. Rotation of gut
  - b. Fate of endodermal pouches
  - c. Formation of limbs with its developmental anomalies
  - d. Placental praevia
  - e. Blood formation
  - f. Development of external genitalis
  - g. Formation of Nerve cells
5. Differences between:
  - a. Spermatogenesis and Oogenesis [2+2=4]
  - b. Endochondral ossification and intramembranous ossification

