

Histology MCQs/General Embryology

1 All but one of following statements about the **cleavage** are true. Which of them is false?

- Cleavage occurs when the embryo travels through the Fallopian tube
- During cleavage, the amount of DNA inside the embryo increases
- Embryo is closed inside zona pellucida during cleavage
- Cleavage continues after implantation

2 All but one of the following statements are true. Which of them is false?

- Number of oogonia grows especially during puberty
- Common fate of oogonia is death by apoptosis
- Oogonia are able undergo mitotic division
- Oogonia are diploid cells

3 What is an **allantois**? (Possible formulation is also: "Allantois:")

- Finger-like protrusion in the site of pharyngeal membrane
- Finger-like protrusion in the site of syncytiotrophoblast
- Finger-like protrusion in the site of cloak membrane
- Finger-like protrusion in the site of cytotrophoblast

4 Which statement about the **amniotic sac** is true? (Possible formulation is also: "Amniotic sac:")

- It is lined up by cells of ectoderm from its beginning
- It is lined up by cells of endoderm from its beginning
- It is composed of cells derived from the epiblast
- It disappears completely during the second week

5 Which structures form the **bilaminar germ disk**?

- Mesoderm and mesenchyme
- Epiblast and hypoblast
- Endoderm and ektoderm
- Laurel and Hardy

6 Which embryonic structure gives rise to cells in our bodies? (note: you can assume "the majority of cells" instead of "all cells" as the application of the rule "the best-fitting answer is correct")

- Both epiblast and hypoblast
- Hypoblast
- Epiblast

7 **Chorda dorsalis** (dorsal chord) is a source of signaling molecules driving the development of: (note: Instead of "driving", words like "controlling" or "checking" can be used in the same meaning)

- Axial structures
- Umbilical cord
- Placenta
- Hearth

8 **Chorda dorsalis** (dorsal chord):

- Completely disappears during prenatal life
- Is fully preserved nearly till the birth
- Is a solid chord composed of cells
- Is the tubular structure

9 When start differentiation of somites (**somitogenesis**)?



Calf embryo about 1 month in the amniotic sac.

- In 3rd week
- In 4th week
- In 5th week
- In 6th week

10 Does the **morula** change its volume in the Fallopian tube?

- Yes, the volume undergoes three to five cycles of changes
- Yes, the volume decreases
- Yes, the volume increases
- No, the volume does not change

11 Ductus venosus (Arantii): (*note: This short formulation means: "Select correct or best-fitting statement about the structure"*)

- Originates as the connection of anterior and posterior cardinal veins
- Connects umbilical vein with inferior caval vein
- Is the venous side of the primitive heart tube
- Gives rise to the portal vein

12 Which statement about '*formation of somites*' is correct?

- Formation of somites is gradual: Cranial somites start, caudal somites continue later on
- Formation of somites is gradual: Caudal somites start, cranial somites continue later on
- Timing of formation of somites is less or more chaotic
- All somites are formed at the same time

13 When can be recognized **germ line for gametes**?

- In the 4th week of embryonic development
- In the 4th month of embryonic development
- In the 4th month after birth
- In the 4th year after birth

14 How to describe the origin of the **intraembryonic mesoderm**?

- Cells from the primitive node (node of Hensen) migrate between ectoderm and endoderm
- Cells from the wall of the amniotic sac migrate between ectoderm and endoderm
- Cells from the wall of the yolk sac migrate between ectoderm and endoderm
- Cells from primitive streak migrate between ectoderm and endoderm

15 When starts the implantation?

- Immediately after fertilization
- 3rd day after fertilization
- 6th day after fertilization
- 9th day after fertilization

16 Journey of the **morula** through the Fallopian tube takes usually:

- 1 to 2 days
- 3 to 4 days
- 5 to 7 days
- 8 to 10 days

17 Only one statement about '*origin of gametes*' is true. Which one?

- They originate from different type of cells, which is not mentioned here
- They originate from either spermatogonia or oogonia
- They originate from spermatogonia only
- They originate from oogonia only

18 **Paraxial mesoderm** give rise:

- Both somatopleura and splanchnopleura
- Intermediate mesoderm

- Chordal plate
- Somits

19 What is a **prechordal plate**?

- Ventral thickening of endoderm
- Ventral thickening of ectoderm
- Dorsal thickening of endoderm
- Dorsal thickening of ectoderm

20 Which structure delineates the **primary yolk sack**?

- Heuser's membrane
- Splanchnopleura
- Trophoblast
- Mesoderm

21 **Primitive node** (node of Hensen) takes place:

- On the anterior (cranial) end of the primitive streak
- On the posterior (caudal) end of the primitive streak
- In the middle of the primitive streak
- Outside of primitive streak

22 Primitive streak originates:

- In lateral parts of hypoblast
- In lateral parts of epiblast
- In the medial line of hypoblast
- In the medial line of epiblast

23 Two haploid gametes form together one cell which is called:

- Diploid gamete
- Embryoblast
- Zygote
- This question is wrong, gametes are diploid

24 Which are three parts of the intraembryonic mesoderm?

- Paraxial, transitional and superficially located
- Paraxial, intermediate and lateral plate
- Mesial, intermediate and profundus
- Paraxial, aboral and adoral

25 What is a **capacitation**?

- Capacitation is a process in which the glycoprotein layer over the acrosome is dissolved
- Capacitation is a process in which sperm penetrates zona pellucida
- Capacitation is a process in which the tail of the sperm is inactivated
- Capacitation is a process in which the tail of the sperm is activated

26 Where the **fertilization** occurs usually?

- In the infundibular part of the Fallopian tube
- In the ampullary part of the Fallopian tube
- Horn of the uterus (*cornua uteri*)
- Cavity of the uterus

27 Where originates the **extraembryonic mesoderm**?

- It is a result of the migration of cells from the neuroectoderm
- In a site between trophoblast and embryoblast
- In a site between hypoblast and epiblast
- In a site between endoderm and ectoderm

28 Where originates **gonocytes**?

- In the extraembryonic mesenchyme

- In the endoderm of the yolk sack
- In the ectoderm of yolk sack
- In the dorsal mesentery

29 Which statement about the **neural plate** is true?

- Neural plate forms itself between the node of Hensen and cloacal membrane
- Neural plate is the basic structure for neural tube and neural crests
- Neural plate originates at the ventral side of the germ disc
- Neural plate is of endodermal origin

30 Which statement is true about the **trophoblast**?

- It differentiates into outer cytotrophoblast and inner syncytiotrophoblast
- It differentiates into inner cytotrophoblast and outer syncytiotrophoblast
- Structure called "trophoblast" does not exist during the development of human
- It does not differentiate further

31 Which statement about the **neural crest** is not true?

- Some kind of mesenchyme can develop from the neural crest
- Neural crest give rise to the medula of the suprarenal gland
- Neural crest gives rise to the cortex of the suprarenal gland
- Melanocytes originate from the neural crest

32 Which statement about the **primitive streak** is true?

- It takes place between primitive node (node of Hensen) and cloacal membrane
- It sits perpendicular to the long axis of the germ disc
- It is the main structure-forming channel of Lieberkühn
- It is the main material for the formation of neural tube

33 Which statement about the **zona pellucida** is true?

- Zona pellucida is a membrane surrounding the oocyte, it is composed mainly of glycoproteins
- Zona pellucida is a membrane surrounding the oocyte, it is composed mainly of glycolipids
- Zona pellucida is on the border between theca folliculi interna and externa
- Zona pellucida is another name for Slavjanski's membrane

34 Which structure does not take place in the late blastocyst?

- Zona pellucida
- Trophoblast
- Embryoblast
- Cavity

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