

2007 Avian Bowl Questions\*EMBRYOLOGY\*page 187-188

Page 187

1) The development of a chick begins in the single cell formed by the union of 2 parental cells. What are the names of the 2 parental cells?

Ovum and Spermatozoon

2) What is the name of the process, by which the ovum cell and spermatozoon cell unite?

Fertilization

3) In birds, how long before the egg is laid does fertilization take place?

24 hours

4) When a fertilized egg is laid, the natural cooling stops the division of the cells. True or false?

True

5) True or false. Cooling of the egg at ordinary temperatures does not result in the death of the embryo?

True

7) Development of the chick may resume after several days of rest if it is again heated by the hen or an incubator. True or false?

True

8) As soon as the fertilized egg is heated again, the cluster of cells in the \*BLANK\* begin to multiply by successive divisions. What is BLANK?

The blastoderm

9) As the division of the cells progressive, various cells acquire specific characteristics of structure and cell grouping. What are 2 of the 3 cell groupings?

Ectoderm,mesoderm and endoderm

10) List 3 things that may develop from the ectoderm.

Skin, feathers, beak, toes, nervous system, lense, retina of eye, linings of mouth and vent

11) The mesoderm develops into bone and what else?

Muscle, blood, and the reproductive and excretory organs

12) The endoderm produces the linings of the digestive tract and what else?

The secretory and respiratory organs

13) There are 4 physiological processes that take place during the transformation of the embryo from chick to egg. What are 2 processes?

Respiration, excretion, nutrition and protection

14) Spell embryology

15) What is the purpose of the “extra-embryonic” membranes?

Enables the embryo to develop without an anatomical connection to the hen,OR (enables the embryo to use all the parts of the egg fro growth and development)

16) What are considered 2 of the 4 “extra-embryonic membranes”?

1) Yolk sac 2) amnion 3) chorion and 4) allantois

17) In the egg, the yolk sac is a layer of tissue that grows where?

The tissue grows over the surface of the yolk

PAGE 188

18) True or false? The yolk sac is completely reabsorbed by the embryo at hatching. True

19) What is the transparent sac filled with a colorless fluid that serves as a protective cushion during embryonic development?

The amnion

20) True or false? The amnion fluid prevents the chick from movement and exercise? False (page 188) the embryo is free to change shape and position

21) What serves as a container for both the amnion and yolk sac?

The chorion

22) On what day of incubation, is the residual yolk sac surrounded by the abdominal wall? On the 19<sup>th</sup> and 20<sup>th</sup> day of incubation

23) During incubation, how many sets of embryonic blood vessels are there?

2 Sets

24) Name 1 of the 2 sets of embryonic blood vessels.

The vitelline and the allantoic vessels

25) What set of embryonic blood vessels are concerned with the respiration of the embryo? The allantoic vessels

26) The vitelline vessels are concerned with what function, for the embryo?

Carrying the yolk materials to the growing embryo

27) At hatch time, the neck muscle forces the egg tooth through the air cell. The chick takes its 1<sup>st</sup> breath. What term is used to describe this?

Internal pipping

28) What part of the chick initially breaks the shell, at hatch time?

The egg tooth

29) How much time can the hatching process normally take, before the chick completely emerges from the shell?

4-12 hours

30) After hatching, the egg tooth will remain on the chick for the 1 year of life. True or false? False (It is lost after a few days)

### BONUS QUESTION

TEAM BONUS The allantois has 4 functions. Name 2 of them

It serves as an embryonic respiratory organ (2)It receives the excretions of the embryonic kidneys (3)It absorbs albumen, which serves as protein for the embryo (4)It absorbs calcium from the shell for the structural needs of the embryo

TEAM BONUS IN the Embryonic membranes, how does the allantois differ from the amnion and the chorine?

It differs in that it arises from within the body of the embryo.