SLE132 Week 2
Tissues and Organ Systems
Animal Development

MULTIPLE CHOICE. Choose the one alternative that best completes the statement or answers the question.

1) In animals, individual cells are grouped into _____. 1) _____
A) organ systems B) organisms C) organs D) tissues

2) Bone is a type of _____. 2) _____
A) extracellular matrix B) adipose tissue
C) connective tissue D) epithelial tissue

3) A main function of most types of epithelial tissue is _____. 3) _____
A) support B) absorption
C) sensation D) covering surfaces

4) Connective tissue is different from the other major tissue types in that _____. 4) _____
A) the cells are sparsely scattered through an extracellular matrix
B) it is not made up of cells
C) it is made up of cells
D) it is found only in humans

5) Which one of the following types of tissue stores fat in the body? 5) _____
A) adipose tissue B) bone
C) fibrous connective tissue D) cartilage

6) What kind of connective tissue has a matrix that is strong and flexible? 6) _____
A) loose connective tissue B) bone
C) cartilage D) adipose tissue

7) Which of the following generally makes skeletal muscle different from both smooth and cardiac muscle? 7) _____
A) Skeletal muscle cells have nuclei.
B) Skeletal muscle cannot be contracted voluntarily.
C) Skeletal muscle can be contracted voluntarily.
D) Skeletal muscles are made of cells called "fibers."

8) The basic unit of nervous tissue is the _____. 8) _____
A) dendrite B) neuron C) axon D) brain

9) Which type of tissue forms an electrical communication system within the body? 9) _____
A) muscle B) connective C) nervous D) blood

10) Of the following choices, the epithelium with the shortest diffusion distance is _____. 10) _____
A) pseudostratified ciliated columnar epithelium
B) simple squamous epithelium
C) simple columnar epithelium
D) stratified squamous epithelium

11) Most of the exchange surfaces of multicellular animals are lined with _____. 11) _____

A) smooth muscle cells B) connective tissue
C) neural tissue D) epithelial tissue

12) Blood is best classified as connective tissue because _____. 12) _____

A) its cells can move from place to place
B) it is found within all the organs of the body
C) its cells are separated from each other by an extracellular matrix
D) it contains more than one type of cell

13) Cardiac muscle cells are both _____. 13) _____

A) smooth and under involuntary control
B) striated and interconnected by intercalated disks
C) striated and under voluntary control
D) smooth and under voluntary control

14) The type of muscle tissue surrounding the intestines and blood vessels is _____. 14) _____

A) skeletal muscle B) smooth muscle
C) intercalated cells D) cardiac muscle

15) Which one of the following is the earliest event in the process of fertilization? 15) _____

A) The sperm head plasma membrane fuses with the egg plasma membrane.
B) Enzymes from the acrosome are released.
C) The sperm nucleus enters the cytoplasm of the egg.
D) Sperm contact the jelly coat around the egg.

16) Which of these events occurs first? 16) _____

A) cleavage B) gastrulation
C) implantation D) formation of the placenta

17) Which of the following results from cleavage? 17) _____

A) segmentation B) formation of the notochord
C) formation of the nervous system D) formation of more cells

18) The liver, pancreas, and lining of the digestive tract come from _____. 18) _____

A) endoderm B) endometrium C) ectoderm D) mesoderm

19) Gastrulation _____. 19) _____

A) changes the blastocyst into an embryo that has three tissue layers
B) produces a solid ball of cells
C) changes a gastrula into a blastocyst
D) changes the fertilized egg into a blastocyst

20) Mesoderm gives rise to the _____. 20) _____

A) nervous system and thyroid B) liver and pancreas
C) brain and skin D) heart and kidneys

21) The formation of the fertilisation envelope requires an increase in the availability of _____. 21) _____

A) hydrogen ions B) sodium ions C) calcium ions D) potassium ions

22) Contact of a sea urchin egg with signal molecules on sperm causes the egg to undergo a brief _____. 22) _____

A) membrane depolarisation B) mitosis
C) vitellogenesis D) acrosomal reaction

23) During fertilisation, the acrosomal contents _____. 23) _____

A) help propel more sperm toward the egg
B) digest the protective jelly coat on the surface of the egg
C) trigger the completion of meiosis by the sperm
D) prevents cleavage

24) In a newly fertilised egg, the vitelline layer _____. 24) _____

A) lifts away from the egg and hardens to form a fertilisation envelope
B) reduces the loss of water from the egg and prevents desiccation
C) secretes hormones that enhance steroidogenesis by the ovary
D) provides most of the nutrients used by the zygote

25) In sea urchins, the "fast block" and the longer lasting "slow block" to polyspermy, respectively, are _____. 25) _____

A) the cortical reaction and the formation of yolk protein
B) the jelly coat of the egg and the vitelline membrane
C) the acrosomal reaction and the formation of egg white
D) membrane depolarisation and the cortical reaction

26) In a developing frog embryo, most of the yolk is _____. 26) _____

A) found within the cleavage furrow
B) distributed equally throughout the embryo
C) located near the vegetal pole
D) located near the animal pole

27) As cleavage continues during frog development, the size of the blastomeres _____. 27) _____

A) increases as the number of the blastomeres increases
B) decreases as the number of the blastomeres increases
C) increases as the number of the blastomeres decreases
D) decreases as the number of the blastomeres decreases

28) Which of the following correctly displays the sequence of developmental milestones? 28) _____

A) cleavage → blastula → gastrula B) gastrula → blastula → cleavage
C) blastula → gastrula → cleavage D) cleavage → gastrula → blastula

29) Cells move to new positions as an embryo establishes its three germ-tissue layers during _____. 29) _____

A) cleavage B) gastrulation C) induction D) determination

30) The outer-to-inner sequence of tissue layers in a post-gastrulation vertebrate embryo is _____. 30) _____

A) ectoderm → endoderm → mesoderm B) endoderm → ectoderm → mesoderm
C) mesoderm → endoderm → ectoderm D) ectoderm → mesoderm → endoderm

31) The archenteron of the developing sea urchin eventually develops into the _____. 31) _____

A) digestive tract B) heart and lungs
C) brain and spinal cord D) blastocoel

32) From earliest to latest, the overall sequence of early development proceeds in which of the following sequences? 32) _____

A) gastrulation → organogenesis → cleavage
B) gastrulation → blastulation → neurulation
C) preformation → morphogenesis → neurulation
D) cleavage → gastrulation → organogenesis

33) The embryonic precursor to the human spinal cord is the _____. 33) _____

A) neural tube B) archenteron C) notochord D) mesoderm