Development
(There are a lot of questions to get you ready for the exam)

1. Epithelial linings of the digestive tract, respiratory tract, urinary bladder, and urethra all form from the ______________ layer of the gastrula.
   A) ectoderm
   B) mesoderm
   C) endoderm
   D) chorionic villi

2. The portion of the placenta contributed by the embryo is the _____________.
   A) chorion
   B) allantois
   C) amnion
   D) yolk sac

3. Which structure diverts some blood away from the lungs and into the systemic circulation?
   A) fossa ovalis
   B) ductus arteriosus
   C) ductus venosus
   D) ligamentum arteriosum

4. Which of these substances is/are not teratogenic?
   A) viruses
   B) certain drugs
   C) most water-soluble vitamins
   D) certain fat-soluble vitamins

5. What is the major distinguishing factor that separates the embryonic stage from the fetal stage?
   A) All major organ systems form during the embryonic stage; the fetal stage consists mainly of rapid growth.
   B) The brain forms late in the fetal stage; all other organ systems form earlier.
   C) The skeletal system is laid down during the fetal stage, otherwise organ systems form during the embryonic stage.
   D) The major event of the embryonic stage is implantation in the uterus; all development occurs during the fetal stage.

6. Which vessel transports blood rich in oxygen and nutrients to the fetus?
   A) ductus venosus
   B) umbilical vein
   C) umbilical artery
   D) ductus arteriosus

7. Within the fetus, much of the circulating blood bypasses the lungs and flows through the _____________.
   A) ductus venosus
   B) umbilical vein
   C) umbilical artery
   D) ductus arteriosus
8. The period immediately after birth to four weeks of age is called the _______________ period.
A) senescent
B) adolescent
C) neonatal
D) infancy

9. The period immediately after fertilization, continuing until birth, is called the _______________ period.
A) senescent
B) gestation
C) fetal
D) developmental

10. ALSO: how long does this period last (normally) in women?

11. Many changes occur in the newborn infant as it adapts to a life apart from its mother. What happens to the umbilical vein?
A) It continues to transport blood from the navel to the vena cava.
B) It closes off to become the ligamentum teres.
C) It closes off to become the superior vesical artery.
D) It becomes the ligamentum arteriosum.

12. Something that crosses the placenta and causes harm to the developing conceptus:
A) Teratogen
B) Kinase
C) hGC
D) BPG

13. What normally prevents the expulsion of an embryo by a menstrual flow?
A) the enzymes around the embryo
B) hCG
C) the thickness of the endometrium
D) FSH

15. The structure which implants in the endometrium is correctly termed a _____.
A) embryo
B) blastocyst
C) morula
D) zygote

16. When can the term fetus be correctly used?
A) at three weeks
B) at 12 weeks
C) when body systems become completed
D) when organs become distinguishable

17. Which embryonic membrane is closest to the embryo?
A) allantois
B) yolk sac
C) chorion
D) amnion
18. What is the origin of red blood cells?
A) yolk sac
B) chorion
C) fetal bone marrow
D) amnion

19. Which membrane plays the greatest role in nutrient and wastes exchanges?
A) amnion
B) chorion
C) allantois
D) yolk sac

20. Which hormone prevents a second pregnancy during gestation?
A) FSH
B) LH
C) progesterone
D) HCG

21. In which process do the cells remain the same size?
A) differentiation
B) cleavage
C) growth
D) morphogenesis

22. Which is the first system to become visibly most completely differentiated?
A) circulatory
B) excretory
C) nervous
D) integumentary

23. When is it first possible to distinguish the sex of a fetus?
A) one month
B) second month
C) third month
D) fourth month

24. What event usually occurs about 6-7 days after ovulation?
A) Implantation
B) Fertilization
C) Block to polyspermy
D) Zygote formation

25. What event happens as soon as a sperm enters an egg?
A) Implantation
B) Fertilization
C) Block to polyspermy
D) Zygote formation

26. What event happens when the 2 pronuclei merge?
A) Implantation
B) Fertilization
C) Block to polyspermy
D) Zygote formation
27. Damage to the uterine tubes may cause the pre-embryo to implant in a site other than the uterus. This occurrence is called
   A) an ectopic pregnancy.
   B) a hydatic pregnancy.
   C) an amniotic pregnancy.
   d) a uterine pregnancy.

28. What hormone induces labor, increases the force of contractions during labor, and causes milk “letdown”?
   A) Prolactin
   B) Oxytocin
   C) hCG
   D) Estrogen
   e) ADH

29. The correct order of the three stages of labor are:
   A) expulsion - dilation – placental.
   B) dilation - placental-expulsion.
   C) placental - dilation – expulsion.
   D) dilation - expulsion – placental.

30. Where does capacitation take place?
   A) ductus deferens.
   B) ejaculatory duct.
   C) female reproductive tract.
   D) seminiferous tubules.

   ALSO: know what capacitation is, be able to define it.

31. Which of the following is not a function of the placenta?
   A) Provide nutrients
   B) Remove waste products
   C) Move the blood
   D) Provide oxygen
   E) Remove carbon dioxide

32. Which fetal vessel contains the highest concentration of oxygen?
   A) Umbilical artery
   B) Umbilical vein
   C) Aorta
   D) Inferior vena cava
   E) Pulmonary vein

33. Which of the following is FALSE?
   A) “Gestation” refers to the period during which the fetal reproductive structures are formed
   B) Teratogens are substances that show up in mother’s milk.
   C) The decidua capitis of the endometrium is part of the mother’s contribution to the placenta.
   D) Very little fetal blood is sent to the respiratory tract.
   E) all of the above are false
34. Put the following stages of the Milk Letdown Reflex in order:
   1. Stimulation of hypothalamic nuclei
   2. Receptors in nipple are stimulated.
   3. Oxytocin is released by the posterior pituitary
   4. Milk is ejected.
   5. Myoepithelial cells of breast contract

35. Structure whose function is to surround and cushion the developing embryo:
   A) Chorion.
   B) Allantois.
   C) Yolk sac.
   D) Amnion.

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Match the following:

A) Fertilization
B) Cleavage
C) Implantation
D) Gastrulation

36. Leads to the formation of the zygote.

37. Process by which the fertilized egg splits several times, leading to the development of a morula.

38. The process by which a haploid egg is formed from a gamete.

39. Embedding of the blastula in the uterine wall.

40. The process by which the 3 germ layers are formed.

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41. Sperm are destroyed by changes in the zona pellucida of a fertilized zygote in what is known as:
   A) the cortical reaction.
   B) lysis.
   C) meiosis.
   D) capacitation.

42. It is impossible for sperm to be functional (to be able to fertilize the egg) until after:
   A) they have been stored in the uterus for several days.
   B) their tail disappears.
   C) they undergo capacitation.
   D) they become spermatids.

43. Human gestation lasts _____.
   A) 280 days.  
   B) 9 months
   C) 270 days.  
   D) 6 weeks
44. Which of the following is false regarding the placenta and placentation?
A) The process of placentation begins within the fallopian tubes.
B) The placenta begins to form immediately after fertilization occurs.
C) The decidua basalis of the endometrium is part of the mother's contribution to the placenta.
D) The placenta is derived from the allantois of the fetus.
E) All of the above are false.

45. Which of the following is not an embryonic germ layer?
A) ectoderm
B) mesoderm
C) epiderm
D) endoderm

46. Place these in correct sequence after fertilization occurs:
1. Blastocyst
2. Embryo
3. Morula
4. Fetus
5. Zygote