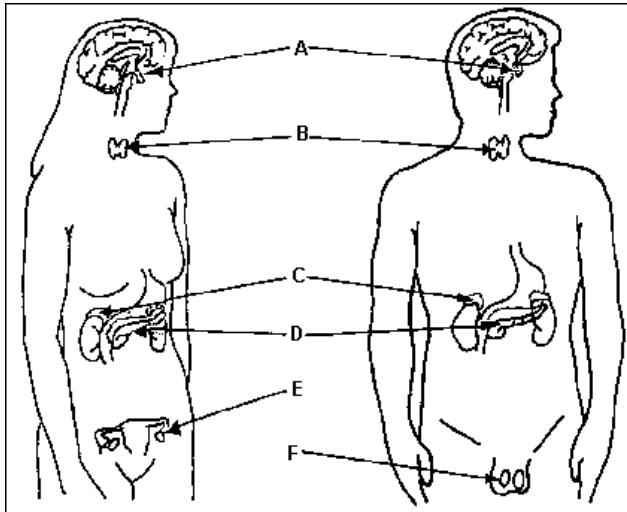


Reproductive System & Development: Practice Questions #1

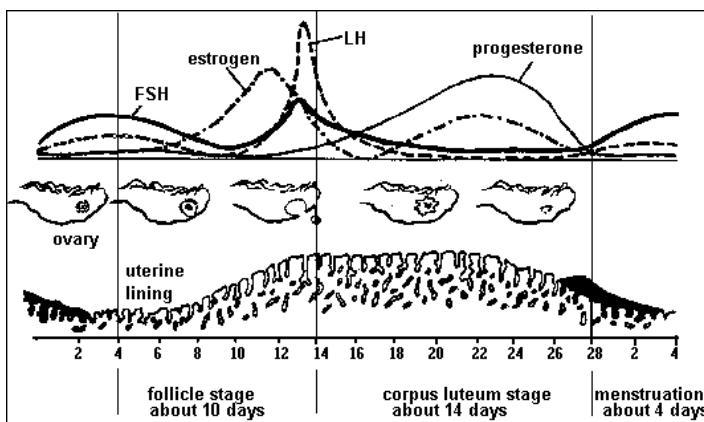
1.



Which two glands in the diagram produce gametes?

- A. glands *A* and *B*
- B. glands *B* and *E*
- C. glands *C* and *F*
- D. glands *E* and *F*

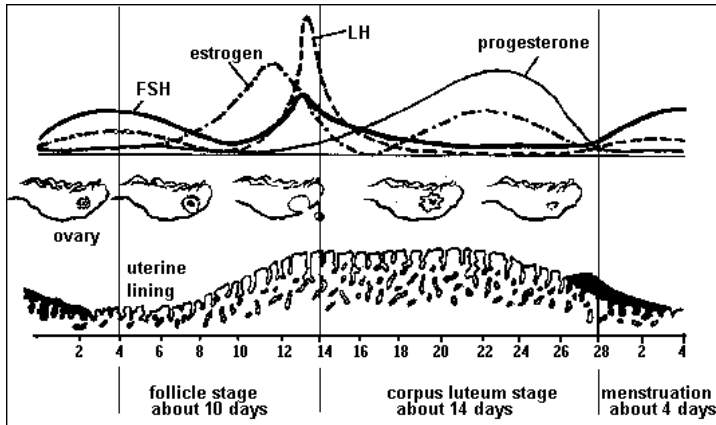
2.



Base your answer on the diagram of some of the events of the human female reproductive cycle and on your knowledge of biology. During which part of this cycle does the shedding of the thickened uterine lining occur?

- A. ovulation
- B. corpus luteum stage
- C. menstruation
- D. follicle stage

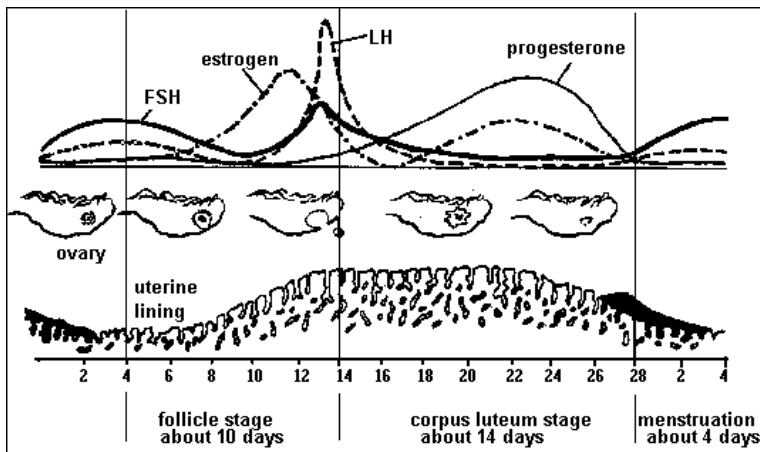
3.



Base your answer on the diagram of some of the events of the human female reproductive cycle and on your knowledge of biology. On or about which day does ovulation occur?

- A. 8th day
- B. 14th day
- C. 20th day
- D. 28th day

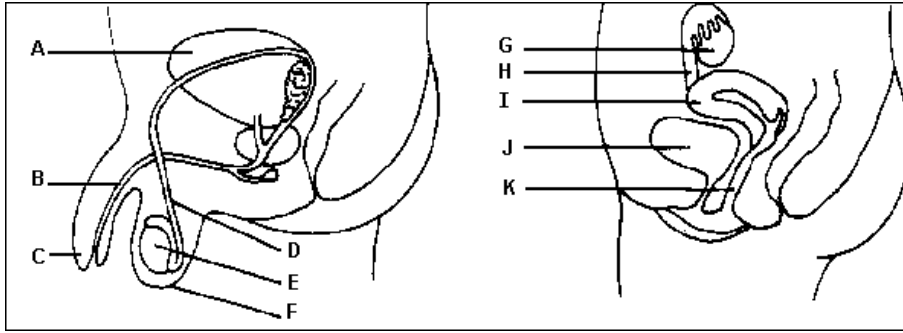
4.



Base your answer on the diagram of some of the events of the human female reproductive cycle and on your knowledge of biology. What is the average length of this reproductive cycle?

- A. 32 days
- B. 28 days
- C. 14 days
- D. 4 days

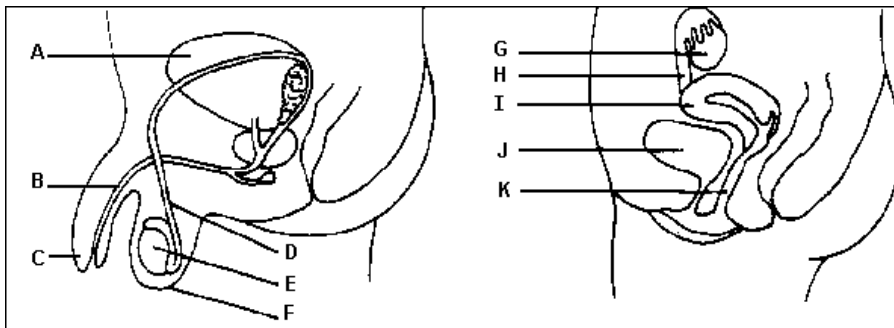
5.



Base your answer on the diagram and your knowledge of biology. Which structure provides the optimum temperature for sperm production?

- A. structure *A*
- B. structure *F*
- C. structure *G*
- D. structure *D*

6.



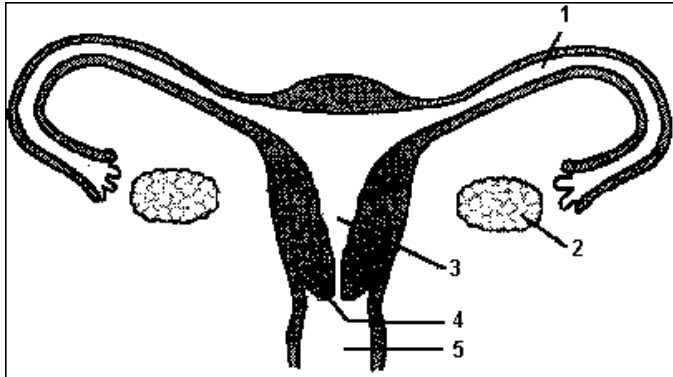
Base your answer on the diagram and your knowledge of biology. Gamete cells are produced within

- A. structures *A* and *J*
- B. structures *E* and *G*
- C. structures *B* and *I*
- D. structures *D* and *H*

7. In humans, the number of sperm cells required to produce a pair of identical twins is

- A. 1
- B. 2
- C. 3
- D. 4

8.

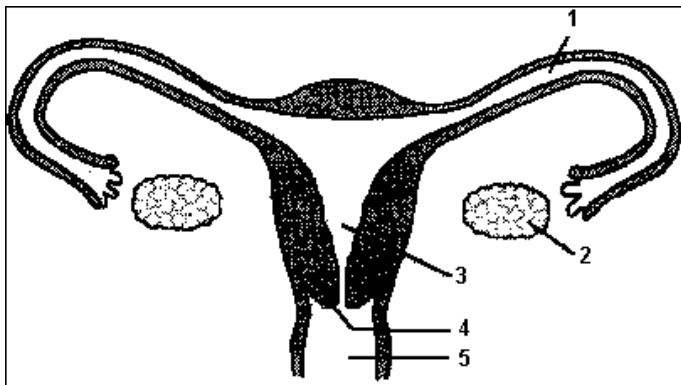


Select the number of the part of the human female reproductive tract, chosen from the diagram, that is best described in the following statement:

The process of meiotic cell division begins within this structure.

- A. structure 1
- B. structure 2
- C. structure 3
- D. structure 4
- E. structure 5

9.

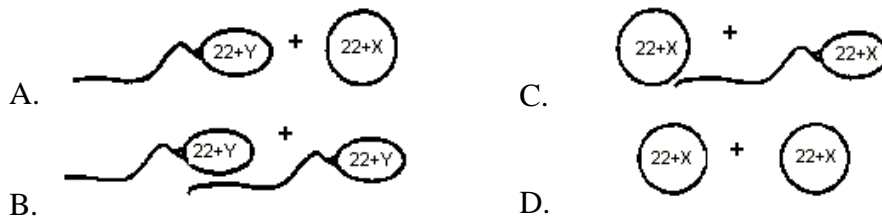


Select the number of the part of the human female reproductive tract, chosen from the diagram, that is best described in the following statement:

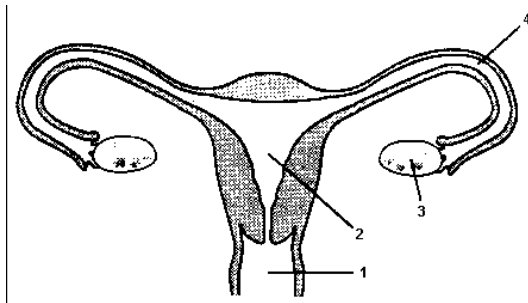
This structure releases estrogen into the circulatory system.

- A. structure 1
- B. structure 2
- C. structure 3
- D. structure 4
- E. structure 5

10. Which pair of gametes, shown in the diagram, can unite to produce a zygote that will develop into a normal human male embryo?



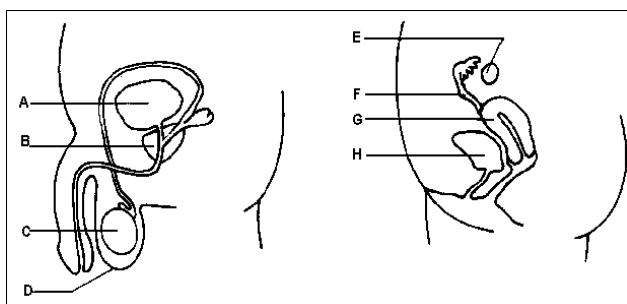
11.



Select the part of the human female reproductive system, indicated in the diagram, that is most closely associated with the statement: The process of embryo implantation normally occurs within this structure.

- A. structure 1
- B. structure 2
- C. structure 3
- D. structure 4

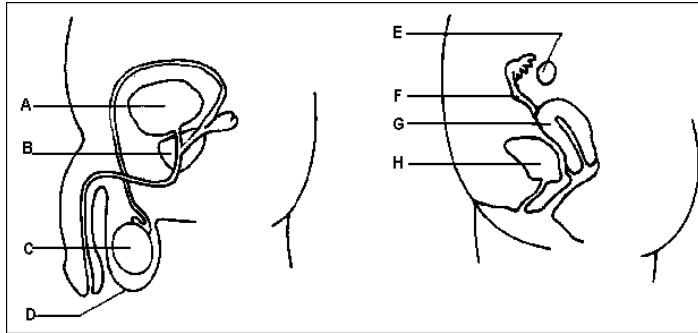
12.



Base your answer on your knowledge of biology and on the diagrams. Which structure provides a cooler environment for sperm production?

- A. structure A
- B. structure B
- C. structure C
- D. structure D

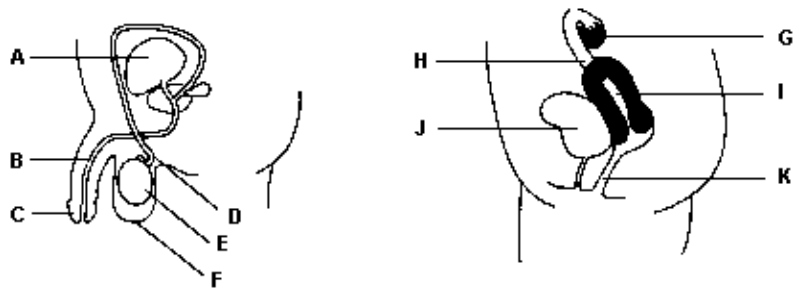
13.



Base your answer on your knowledge of biology and on the diagrams. Testosterone is produced by

- A. structure *A*
 - B. structure *B*
 - C. structure *C*
 - D. structure *D*
14. The hormone FSH stimulates the development of a follicle in the human female. As the follicle develops, it secretes estrogen. A high level of estrogen decreases the secretion of FSH. This mechanism is an example of
- A. cell differentiation
 - B. in vitro fertilization
 - C. positive tropism
 - D. negative feedback
15. Hormones produced by the testes control the expression of traits for
- A. hair color and eye color
 - B. beard development and number of fingers
 - C. hair color and voice quality
 - D. voice quality and beard development

16.



Which structures in the diagrams are directly affected by hormones involved in the menstrual cycle?

- A. *C* and *E*
- B. *A* and *D*
- C. *G* and *I*
- D. *I* and *J*

17. When a pregnant woman ingests toxins such as alcohol and nicotine, the embryo is put at risk because these toxins can

- A. diffuse from the mother's blood into the embryo's blood within the placenta
- B. enter the embryo when it eats
- C. transfer to the embryo since the mother's blood normally mixes with the embryo's blood in the placenta
- D. enter the uterus through the mother's navel

18. Within which structure in the human body does specialization of parts of the developing baby take place?

- A. ovary
- B. uterus
- C. testis
- D. pancreas

19. Heavy cigarette smoking and the use of alcohol throughout pregnancy usually increase the likelihood of

- A. the birth of twins
- B. the birth of a male baby
- C. a baby being born with a viral infection
- D. a baby being born with medical problems

20. Base your answer to the question on the information in the reading passage and on your knowledge of biology.

Stem Cells

If skin is cut, the wound closes within days. If a leg is broken, the fracture will usually mend if the bone is set correctly. Almost all human tissue can repair itself to some extent. Much of this repair is due to the activity of stem cells. These cells resemble those of a developing embryo in their ability to reproduce repeatedly, forming exact copies of themselves. They may also form many other different kinds of cells. Stem cells in bone marrow offer a dramatic example. They can give rise to all of the structures in the blood: red blood cells, platelets, and various types of white blood cells. Other stem cells may produce the various components of the skin, liver, or intestinal lining.

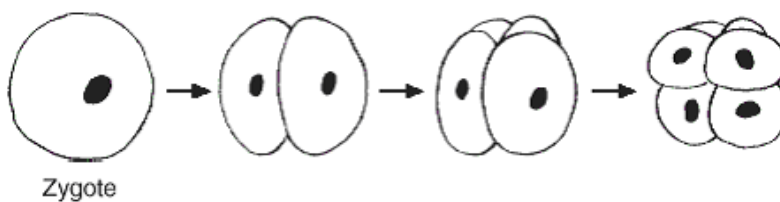
The brain of an adult human can sometimes compensate for damage by making new connections among surviving nerve cells (neurons). For many years, most biologists believed that the brain could not repair itself because it lacked stem cells that would produce new neurons.

A recent discovery, however, indicates that a mature human brain does produce neurons routinely at one site, the hippocampus, an area important to memory and learning. This discovery raises the prospect that stem cells that make new neurons in one part of the brain might be found in other areas. If investigators can learn how to cause existing stem cells to produce useful numbers of functional nerve cells, it might be possible to correct a number of disorders involving damage to neurons such as Alzheimer's disease, Parkinson's disease, stroke, and brain injuries.

Stem cells may be similar to the cells of a developing embryo because both cell types can

- A. produce only one type of cell
- B. help the brain to learn and remember things
- C. divide and differentiate
- D. cause Alzheimer's and Parkinson's diseases

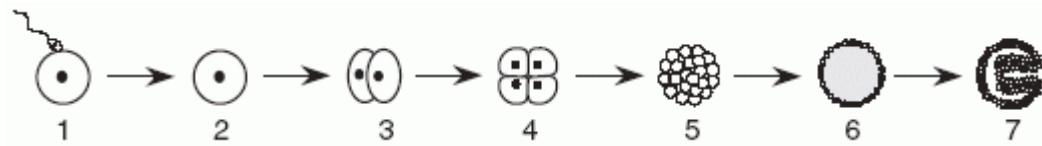
21. The diagram below represents some stages of early embryonic development.



Which process is represented by the arrows in the diagram?

- A. meiosis
- B. fertilization
- C. mitosis
- D. evolution

22. The sequence of diagrams below represents some events in a reproductive process.



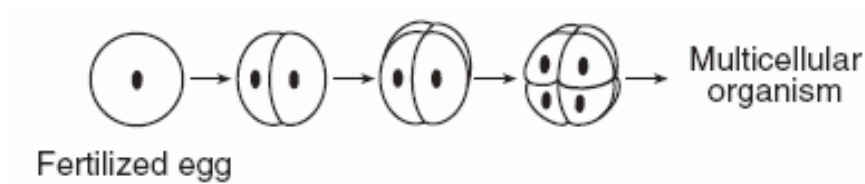
To regulate similar events in human reproduction, what adaptations are required?

- A. the presence of genes and chemicals in each cell in stages 1 to 7
- B. an increase in the number of genes in each cell in stages 3 to 5
- C. the removal of all enzymes from the cells in stage 7
- D. the elimination of mutations from cells after stage 5

23. Which process normally occurs at the placenta?

- A. Oxygen diffuses from fetal blood to maternal blood.
- B. Materials are exchanged between fetal and maternal blood.
- C. Maternal blood is converted into fetal blood.
- D. Digestive enzymes pass from maternal blood to fetal blood.

24. Which phrase best describes a process represented in the diagram below?

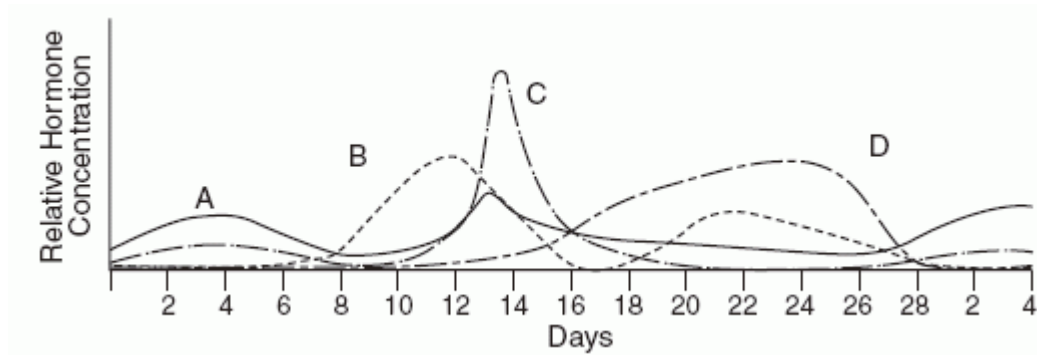


- A. a zygote dividing by mitosis
- B. a zygote dividing by meiosis
- C. a gamete dividing by mitosis
- D. a gamete dividing by meiosis

25. Research has shown that certain body cells, known as stem cells, can develop into a variety of specialized cells. Various factors can cause stem cells to develop into different types of mature cells. These different types of mature cells result from

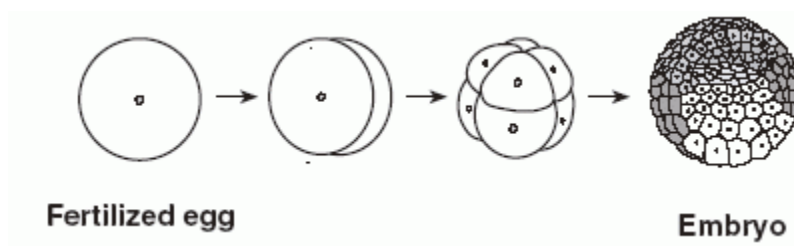
- A. different antibodies and mitotic cell division
- B. identical genetic codes and meiotic cell division
- C. different environments of the cells and the functioning of different parts of the genetic code
- D. similar steps in the development of the cells and a reduction in the number of chromosomes in each cell

26. The graph shows the different concentrations of female reproductive hormones *A*, *B*, *C*, and *D* over a 28-day cycle.



Although the data used to make this graph was originally entered in a data table, most scientists prefer to see the information in the form of a graph because

- A. the information in a graph is more accurate than the information in a data table
 - B. it is easier to see relationships between variables in a graph than in a data table
 - C. it is possible to put more information in a graph than in a data table
 - D. only graphs can be used to predict future trends
27. Part of embryonic development in a species is illustrated in the diagram.

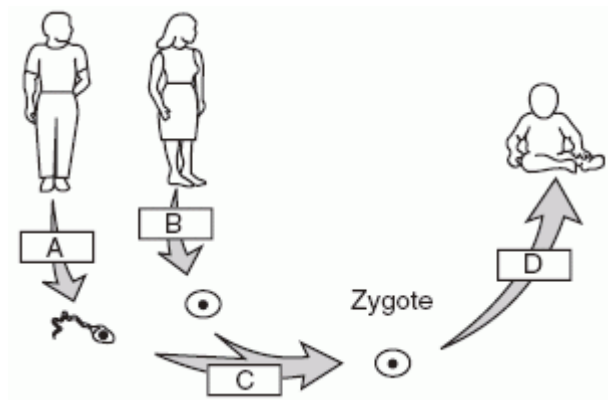


Which set of factors plays the most direct role in controlling the events shown in the diagram?

- A. genes, hormones, and cell location
 - B. antibodies, insulin, and starch
 - C. ATP, amino acids, and inorganic compounds
 - D. abiotic resources, homeostasis, and selective breeding
28. The human reproductive system is regulated by

- A. restriction enzymes
- B. antigens
- C. complex carbohydrates
- D. hormones

29. The diagram represents processes involved in human reproduction.



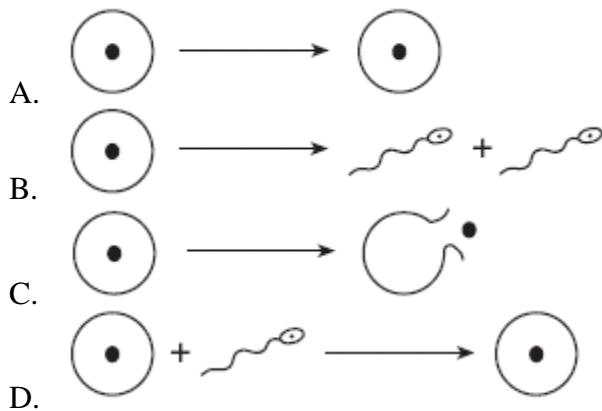
Which row in the chart below correctly identifies the processes represented by the letters in the diagram?

Row	A	B	C	D
A.	mitosis	meiosis	fertilization	differentiation
B.	meiosis	meiosis	fertilization	differentiation
C.	meiosis	mitosis	differentiation	fertilization
D.	mitosis	mitosis	differentiation	fertilization

30. Estrogen has a direct effect on the

- A. formation of a zygote
- B. changes within the uterus
- C. movement of an egg toward the sperm
- D. development of a placenta within the ovary

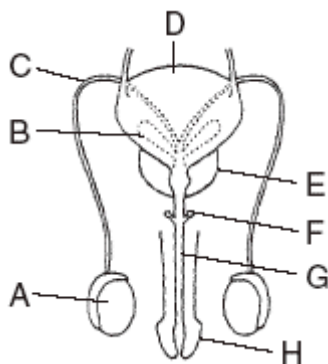
31. Which diagram best illustrates an event in sexual reproduction that would most directly lead to the formation of a human embryo?



32. Which substance usually passes in the greatest amount through the placenta from the blood of the fetus to the blood of the mother?

- A. oxygen
- B. carbon dioxide
- C. amino acids
- D. glucose

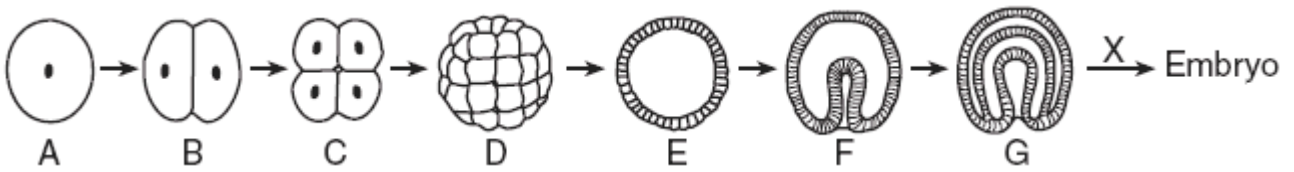
33. Base your answer to the question on the diagram below, which represents systems in a human male, and on your knowledge of biology.



Which sequence represents the path of sperm leaving the body?

- A. $A \rightarrow C \rightarrow G$
- B. $A \rightarrow C \rightarrow B$
- C. $E \rightarrow F \rightarrow H$
- D. $D \rightarrow F \rightarrow G$

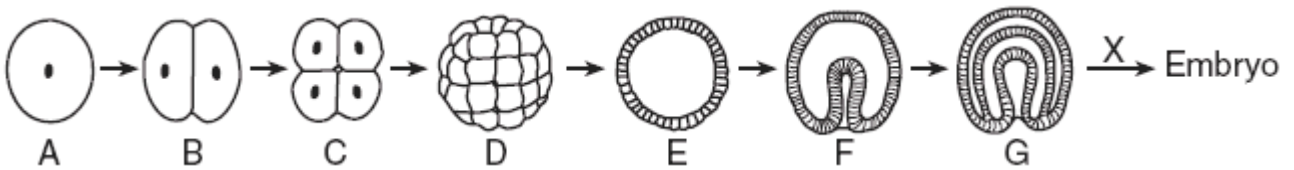
34. Base your answer to this question on the diagram below, which represents some stages in the development of an embryo, and on your knowledge of biology.



If cell A has 46 chromosomes, how many chromosomes will most likely be found in each cell of stage G?

- A. 23
- B. 46
- C. 69
- D. 92

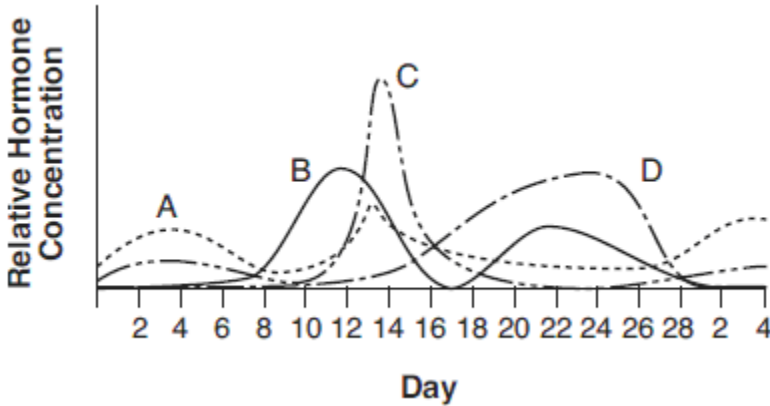
35. Base your answer to this question on the diagram below, which represents some stages in the development of an embryo, and on your knowledge of biology.



The arrow labeled X represents the process of

- A. meiosis
- B. recombination
- C. differentiation
- D. cloning

36. The graph below shows the relative concentrations of certain hormones in the blood during the human female reproductive cycle.



Which hormone has the lowest concentration on which day?

- A. hormone A on day 4
- B. hormone B on day 2
- C. hormone C on day 12
- D. hormone D on day 20

37. The data table below shows an effect of secondhand smoke on the birth weight of babies born to husbands and wives living together during pregnancy.

Effect of Secondhand Smoke on Birth Weight

	Wife: Nonsmoker Husband: Nonsmoker	Wife: Nonsmoker Husband: Smoker
Number of Couples	837	529
Average Weight of Baby at Birth	3.2 kg	2.9 kg

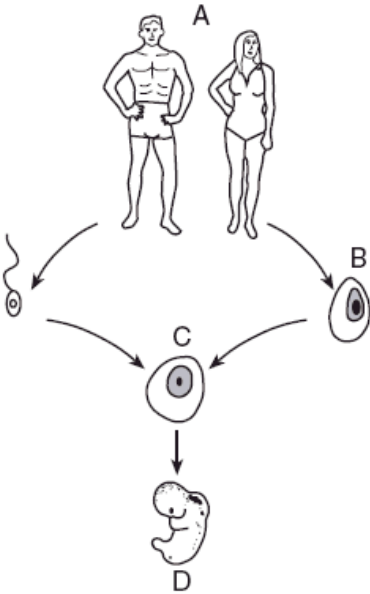
Based on these data, a reasonable conclusion that can be drawn about secondhand smoke during pregnancy is that secondhand smoke

- A. is unable to pass from the mother to the fetus
- B. slows the growth of the fetus
- C. causes mutations in cells of the ovaries
- D. blocks the receptors on antibody cells

38. Which situation involves a risk to a fetus due to the mother smoking during pregnancy?

- A. decreased digestive activity in the stomach of the fetus
- B. a decrease in the amount of oxygen in the ovary of the mother
- C. inhalation of secondhand smoke by the fetus
- D. toxins in the bloodstream of the mother

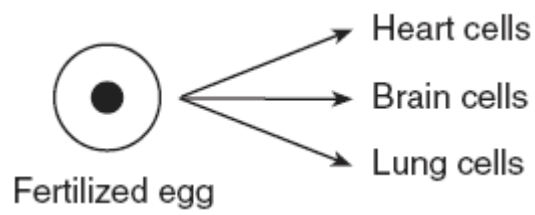
39. The diagram below shows stages of human reproduction.



The direct result of fertilization is represented at

- A. *A*
- B. *B*
- C. *C*
- D. *D*

40. The diagram below represents a process that occurs during normal human development.



Which statement is correct regarding the cells and DNA?

- A. All the cells have identical DNA.
- B. The DNA of the fertilized egg differs from the DNA of all the other cells.
- C. The DNA of the fertilized egg differs from some, but not all, of the other cells.
- D. Only the fertilized egg contains DNA.

Answer Key

- | | | | |
|-----|---|-----|---|
| 1. | D | 36. | B |
| 2. | C | 37. | B |
| 3. | B | 38. | D |
| 4. | B | 39. | C |
| 5. | B | 40. | A |
| 6. | B | | |
| 7. | A | | |
| 8. | B | | |
| 9. | B | | |
| 10. | A | | |
| 11. | B | | |
| 12. | D | | |
| 13. | C | | |
| 14. | D | | |
| 15. | D | | |
| 16. | C | | |
| 17. | A | | |
| 18. | B | | |
| 19. | D | | |
| 20. | C | | |
| 21. | C | | |
| 22. | A | | |
| 23. | B | | |
| 24. | A | | |
| 25. | C | | |
| 26. | B | | |
| 27. | A | | |
| 28. | D | | |
| 29. | B | | |
| 30. | B | | |
| 31. | D | | |
| 32. | B | | |
| 33. | A | | |
| 34. | B | | |
| 35. | C | | |

