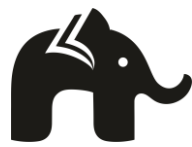


PRACTICE MCQS

CLASS 12 BIOLOGY (TERM - I)
HUMAN REPRODUCTION

BY
learn-o-hub
learning simplified





Question 1:

Which of the following statements are correct with respect to hormones secreted by placenta?

- (i) Placenta secretes relaxin during later stage of pregnancy.
- (ii) Placenta secretes high amount of FSH during pregnancy.
- (iii) Placenta secretes relaxin during initial stage of pregnancy.
- (iv) Placenta secretes hCG and hPL during pregnancy.

- (a) (i) and (iv)
- (b) (i), (ii) and (iv)
- (c) (iii) and (iv)
- (d) (ii), (iii) and (iv)

Answer: (a) (i) and (iv)

Placenta is basically a temporary endocrine organ during pregnancy. Relaxin is produced by ovary and placenta to relax the ligaments in the pelvis and softens and widens the cervix.

hCG is made only during pregnancy and its higher levels in first trimester causes nausea.

Question 2:

Figure A shows the front view of the human female reproductive system and Figure B shows the development of a fertilized human egg cell.



Figure A

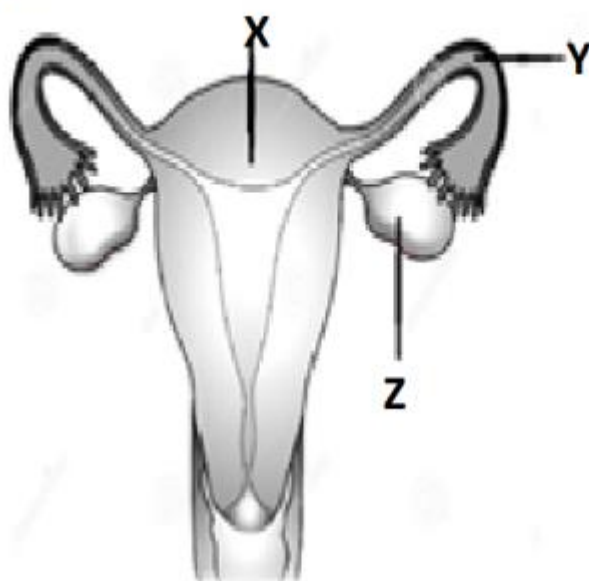
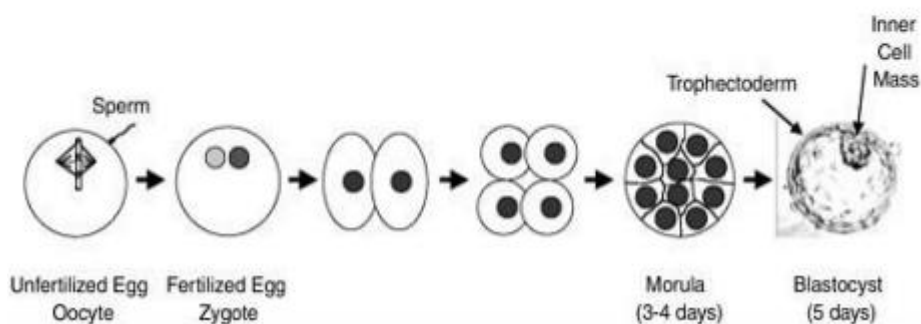
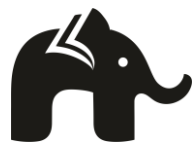


Figure B.



Identify the correct stage of development of human embryo (Figure B) that takes place at the site X, Y and Z respectively in the human female reproductive system (Figure A). Choose the correct option from the table below:

	X	Y	Z
(a)	Morula	Fertilized egg	Blastocyst
(b)	Unfertilized egg	Fertilized egg	Morula
(c)	Blastocyst	Fertilized egg	Unfertilized egg
(d)	Fertilized egg	Morula	Blastocyst



Answer: (c) Blastocyst, Fertilized egg, Unfertilized egg

Unfertilized egg is released by ovary. Egg is fertilized by sperm in fallopian tube and as it moves further and divide to form blastocyst which is implanted in uterus wall.

Question 3:

Penetration of the sperm in the ovum is followed by

- (a) formation of first polar body.
- (b) completion of meiosis II.
- (c) first meiosis.
- (d) dissolution of zona pellucida.

Answer: (b) completion of meiosis II

Sperm penetration into the oocyte triggers the oocyte to complete meiosis by rapid progression from metaphase II to telophase II.

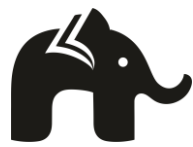
Question 4:

The correct sequence of hormone secretion from beginning of menstruation is

- (a) FSH, progesterone, estrogen.
- (b) Estrogen, FSH, progesterone.
- (c) FSH, estrogen, progesterone.
- (d) Estrogen, progesterone, FSH.

Answer: (c) FSH, estrogen, progesterone

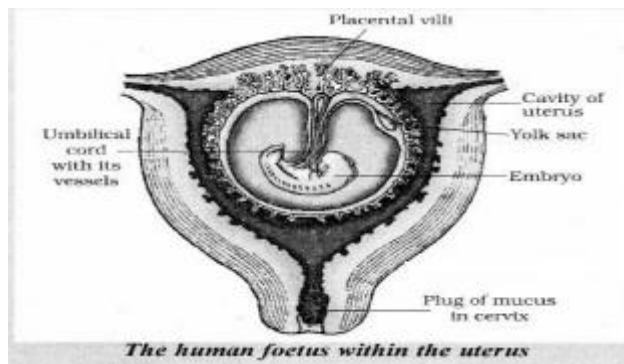
Before the start of menstruation, estrogen and progesterone levels are low. This stimulates pituitary gland to produce FSH. FSH begins to mature and follicles produce more estrogen. Increased levels trigger a sharp rise in LH which causes release of egg from follicle. Corpus luteum secretes more



progesterone and estrogen and prepares for pregnancy. If egg is not fertilized, estrogen and progesterone levels drop and menstruation begins.

Question 5:

Concentration of which of the following substances will decrease in the maternal blood as it flows from embryo to placenta through the umbilical cord?



- i. Oxygen
- ii. Amino Acids
- iii. Carbon dioxide
- iv. Urea

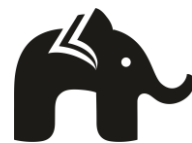
- (a) i and ii
- (b) ii and iv
- (c) iii and iv
- (d) i and iv

Answer: (a) i and ii

Concentration of oxygen and amino acids decrease in maternal blood as it flows from embryo to placenta through the umbilical cord.

Question 6:

During parturition, a pregnant woman is having prolonged labour pains and child birth has to be fastened. It is advisable to administer a hormone that can



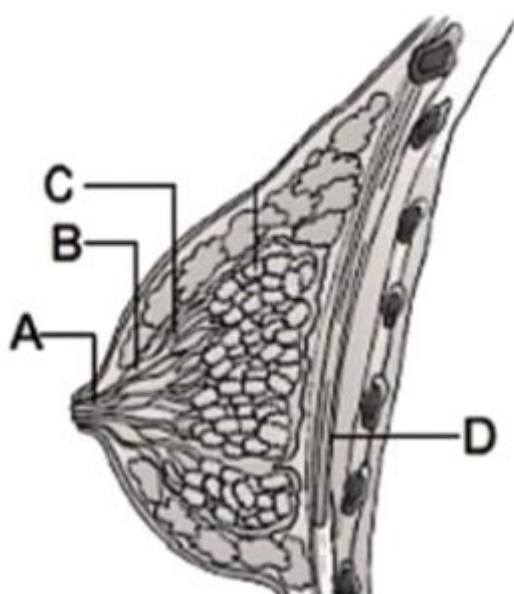
- (a) increase the metabolic rate.
- (b) release glucose in the blood.
- (c) stimulate the ovary.
- (d) activate smooth muscles

Answer: (d) activate smooth muscles

To fasten the childbirth, it is advisable to administer the hormone that stimulates uterine smooth muscle contraction i.e. oxytocin.

Question 7:

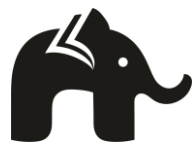
Choose the correct marking.



- (a) A
- (b) B
- (c) C
- (d) D

Answer: (a) A

Several mammary ducts join to form a wider mammary ampulla which is connected to lactiferous duct through which milk is sucked out.



Question 8:

The process of release of embedded sperm head in Sertoli cells is called

- (a) spermiation
- (b) spermatogenesis
- (c) spermatogonia
- (d) spermiogonia

Answer: (a) spermiation

After spermiogenesis, sperm heads become embedded in the Sertoli cells, and are finally released from the seminiferous tubules by the process called spermiation.

Question 9:

The increased level of GnRH which is also called as _____ hormone acts at the _____ gland to stimulate LH and FSH secretion.

- (a) pancreatic, anterior pituitary
- (b) hypothalamic, anterior pituitary
- (c) pancreatic, posterior pituitary
- (d) hypothalamic, posterior pituitary

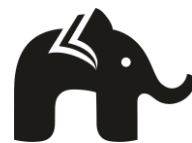
Answer: (b) hypothalamic, anterior pituitary

The increased levels of GnRH then acts at the anterior pituitary gland and stimulates secretion of two gonadotropins – luteinising hormone (LH) and follicle stimulating hormone (FSH).

Question 10:

Which of the following hormones is responsible for both the milk ejection reflex and foetal-ejection reflex?

- (a) Oestrogen
- (b) Prolactin

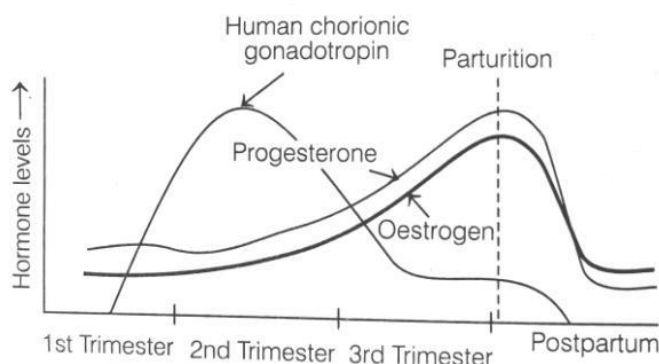


- (c) Oxytocin
- (d) Relaxin

Answer: (c) Oxytocin

Oxytocin hormone is responsible for both the milk ejection reflex and foetal-ejection reflex.

Question 11:



The following statements are drawn as conclusions from the above data.

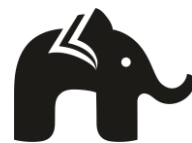
- I. High level of hCG stimulates the synthesis of oestrogen and progesterone.
- II. High level of hCG stimulates the thickening of endometrium.
- III. The level of oestrogen and progesterone becomes high during pregnancy.

Choose from above the correct conclusions.

- (a) I and II
- (b) II and III
- (c) I and III
- (d) I, II and III

Answer: (c) I and III

Statement II is incorrect as high levels of oestrogen stimulate the thickening of the endometrium.



Question 12:

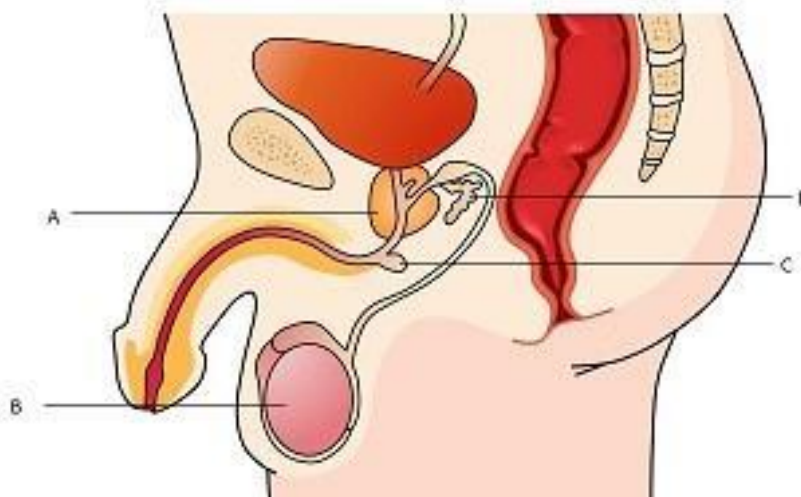
Incorrect the correct sequence in which the various stages of parturition take place.

- (a) Shedding of placenta --> Dilation of cervix --> Delivery of baby
- (b) Dilation of the cervix --> Shedding of placenta --> Delivery of baby
- (c) Dilation of the cervix --> Delivery of the baby --> Shedding of placenta
- (d) None of the above

Answer: (c) Dilation of the cervix --> Delivery of the baby --> Shedding of placenta

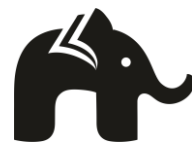
Question 13:

Choose the incorrect statement related to the marked organs.



- (a) Produce the fluid that nourishes and transports sperm.
- (b) Produce testosterone and sperm.
- (c) Provide testosterone.
- (d) Produce secretion which is important for semen coagulation, sperm motility, and stability of sperm chromatin.

Answer: (c) Provide testosterone.



The primary function of prostate gland is to produce the fluid that nourishes and transports sperm (seminal fluid).

The testes are responsible for making testosterone and for producing sperm.

Bulbourethral glands are also known as Cowper glands, provide mucus proteins that lubricate the urethra and counteract the acidity of any urine leftover in the urethra.

Seminal vesicular secretion is important for semen coagulation, sperm motility, and stability of sperm chromatin and suppression of the immune activity in the female reproductive tract.

Question 14:

I – Endometrium

II – Isthmus

III – Infundibulum

IV – Ampulla

V – Cervix

VI – Vagina

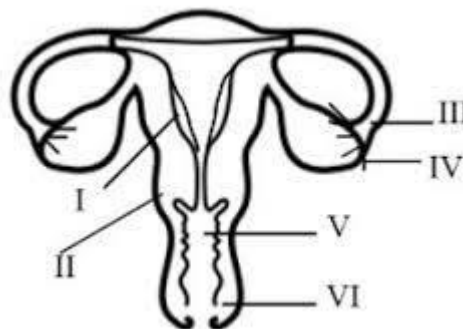
Choose the correct option.

(a) I, II, V

(b) I, III, V, VI

(c) II, IV, V

(d) I, II, III, IV, V, VI



Answer: (b) I, III, V, VI

I – Endometrium

II – Myometrium

III – Infundibulum

IV – Fimbriae

V – Cervix

VI – Vagina



Question 15:

Choose the incorrect statement.

- (a) The endometrium undergoes cyclical changes during menstrual cycle while the myometrium exhibits strong contraction during delivery of the baby.
- (b) The glandular tissue of breast is divided into 15-20 mammary lobes containing clusters of cells called alveoli.
- (c) Isthmus and ampulla are the only parts of fallopian tube.
- (d) Ovary is about 2 to 4 cm in length and is connected to the pelvic wall and uterus by ligaments

Answer: (c) Isthmus and ampulla are the only parts of fallopian tube.

[Isthmus, ampulla and infundibulum together make up fallopian tube.](#)

Question 16:

Immediately after ovulation, the mammalian egg is covered by a membrane known as

- (a) chorion
- (b) zona pellucida
- (c) corona radiata
- (d) vitelline membrane.

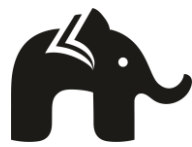
Answer: (c) corona radiate

[Immediately after ovulation, the mammalian egg is covered by a membrane known as corona radiate.](#)

Question 17:

Which one of the following events is correctly matched with the time period in a normal menstrual cycle?

- (a) Release of egg: 7th day
- (b) Endometrium regenerates : 5 – 10 days



- (c) Endometrium secretes nutrients for implantation: 11 – 13 days
- (d) Rise in progesterone level : 1 – 15 days

Answer: (b) Endometrium regenerates: 5 – 10 days

During normal menstrual cycle, approximately between 5 to 10 days endometrium regenerates.

Question 18:

How many sperms are formed from 4 primary spermatocytes?

- (a) 4
- (b) 1
- (c) 16
- (d) 32

Answer: (c) 16

Each primary spermatocyte divides and forms 2 secondary spermatocyte and each secondary spermatocyte and finally forms two sperms. Hence, four primary spermatocytes will form 16 sperms.

Question 19:

1st polar body is formed at which stage of oogenesis?

- (a) 1stmeiosis
- (b) 2ndmitosis
- (c) 1stmitosis
- (d) Differentiation

Answer: (a) 1stmeiosis

During oogenesis, oogonia divide mitotically and produce primary oocyte. These primary oocytes get surrounded by layers of granulosa cells and new



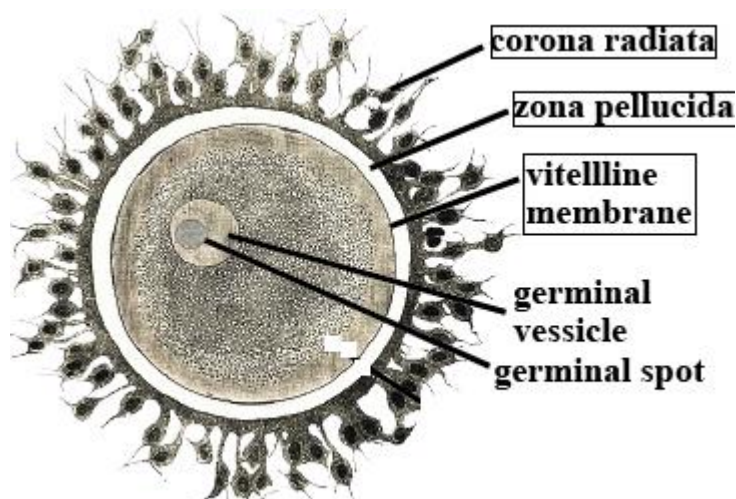
theca (secondary oocyte). When primary oocyte divide by meiosis-I, it produces secondary oocyte and first polar body.

Question 20:

Layers of an ovum from outside to inside is

- (a) corona radiata, zona pellucida and vitelline membrane
- (b) zona pellucida, corona radiata and vitelline membrane
- (c) vitelline membrane, zona pellucida and corona radiata
- (d) zona pellucida, vitelline membrane and corona radiata.

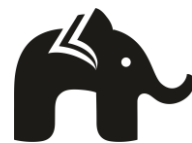
Answer: (a) corona radiata, zona pellucida and vitelline membrane



Assertion Reason based questions:

Answer these questions selecting the appropriate option given below:

- (a) Both A and R are true and R is the correct explanation of A
- (b) Both A and R are true and R is not the correct explanation of A
- (c) A is true but R is false
- (d) A is False but R is true



Question 21:

A: Lactational amenorrhea is the natural method of contraception.

R: It increases the phagocytosis of sperm.

Answer: (c) A is true but R is false

Lactational amenorrhea is the temporary postnatal infertility that occurs when a woman is amenorrheic and fully breastfeeding.

Question 22:

A: Parturition is induced by a complex neuro-endocrine mechanism.

R: At the end of gestation period, the maternal pituitary releases prolactin which causes uterine contractions.

Answer: (c) A is true but R is false

The average duration of human pregnancy is about 9 months is called gestation period.

Vigorous contraction of the uterus at the end of pregnancy causes expulsion/delivery of the foetus. This process of delivery of the foetus (childbirth) is called parturition. Parturition is induced by a complex neuro-endocrine mechanism. The signals for parturition originate from the fully developed foetus and the placenta which induces mild uterine contractions called foetal ejection reflex. This triggers release of oxytocin from the maternal pituitary.

Question 23:

A: In humans, the gamete contributed by the male determines whether the child produced will be male or female.

R: Sex in humans is a polygenic trait depending upon a cumulative effect of some genes on X-chromosome and some on Y-chromosomes.



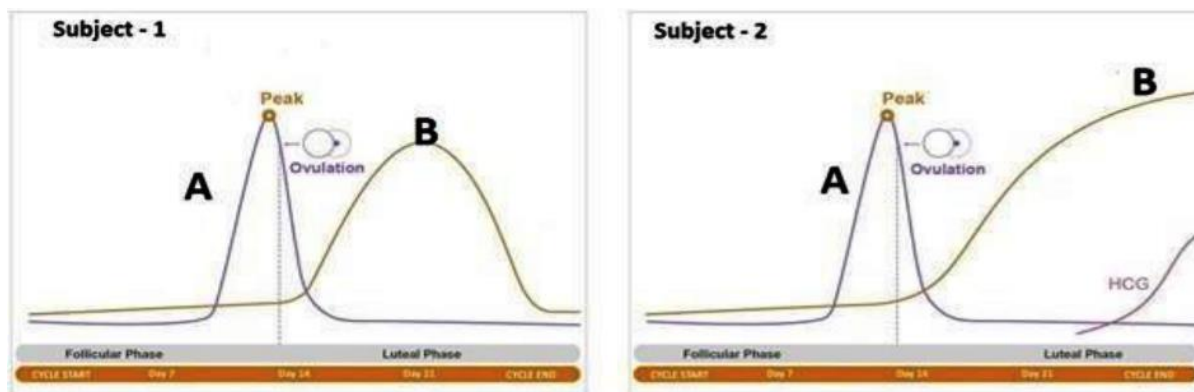
Answer: (c) A is true but R is false

In humans, sex is determined by sex-chromosomes. Sex chromosomes in human female are XX and in human male are XY. Human male produces X and Y chromosomes containing gametes while human females produce only X-containing gametes. Therefore, males determine the sex of offspring. Sex in humans is a monogenic trait.

Case Study Based Questions

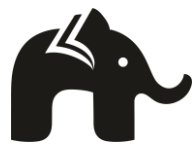
Question 24:

To answer the questions, study the graphs below for Subject 1 and 2 showing different levels of certain hormones.



1. The peak observed in Subject 1 and 2 is due to
 - (a) estrogen
 - (b) progesterone
 - (c) luteinizing hormone
 - (d) follicle stimulating hormone

2. Subject 2 has higher level of hormone B, which is
 - (a) estrogen
 - (b) progesterone



- (c) luteinizing hormone
- (d) follicle stimulating hormone

3. If the peak of Hormone A does not appear in the study for Subject 1, which of the following statement is true?

- (a) Peak of Hormone B will be observed at a higher point in the graph
- (b) Peak of Hormone B will be observed at a point lower than what is given in the graph
- (c) There will be no observed data for Hormone B
- (d) The graph for Hormone B will be a sharp rise followed by a plateau

4. Which structure in the ovary will remain functional in subject 2?

- (a) Corpus Luteum
- (b) Tertiary follicle
- (c) Graafian follicle
- (d) Primary follicle

5. For subject 2 it is observed that the peak for hormone B has reached the plateau stage. After approximately how much time will the curve for hormone B descend?

- (a) 28 days
- (b) 42 days
- (c) 180 days
- (d) 280 days

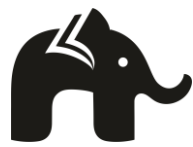
Answer:

1. (c) luteinizing hormone

2. (b) progesterone

3. (c) There will be no observed data for Hormone B

4. (a) Corpus Luteum



5. (d) 280 days

Question 25:

The human pregnancy lasts for about 9 months. During this embryo undergoes various development changes. In human beings, after one month of pregnancy, the embryo heart is formed. The first sign of growing foetus may be noticed by listening to the heart sound carefully. By the end of the second month of pregnancy, the foetus develops limbs and digits. By the end of the 12 weeks, most of the major organ systems are formed. For example: the limbs and external genital organs are well developed. The first movement of the foetus and appearance of hair on the head are usually observed during the fifth month. By the end of 24 weeks, the body is covered with fine hair, eyelids separate and eyelashes are formed.

By the end of the nine months, foetus is fully developed and is ready for delivery.

1. Gastrulation comprises

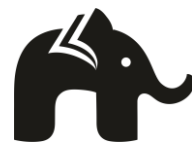
- (a) morphogenetic movements
- (b) differentiation of archenteron
- (c) differentiation of three germ layers
- (d) all of the above

2. During the development of embryo these occurs first,

- (a) differentiation of organs
- (b) differentiation of tissues
- (c) differentiation of organ system
- (d) differentiation of cells

3. The third stage of parturition is called 'after birth'. In this stage

- (a) excessive bleeding occurs
- (b) foetus is born and cervix and vagina contraction to normal condition happens
- (c) foetus born and contraction of uterine wall prevents excessive condition



(d) placenta is expelled out

4. In human adult female, oxytocin the major hormone produced during pregnancy to

- (a) stimulate pituitary to secrete vasopressin
- (b) cause uterine contractions during parturition
- (c) secrete hormone from anterior pituitary
- (d) stimulate growth of mammary glands

5. Meiotic division of the secondary oocyte is completed

- (a) at the time of copulation
- (b) after zygote formation
- (c) at the time of fusion of a sperm with an ovum
- (d) prior to ovulation

Answer:

1. (d) All of the above

Gastrulation comprises of morphogenetic movements, differentiation of archenteron and differentiation of three germ layers.

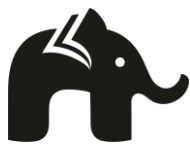
2. (d) differentiation of cells

After fertilization, the zygote undergoes the process of cleavage to form a number of cells which ultimately undergo the process of differentiation and then form tissues, organs and lastly organ system.

3. (d) placenta is expelled out

Third stage of parturition is the time after the delivery until the placenta is expelled by powerful uterine contractions. Umbilical cord is cut close to the body's navel. It lasts for 10-15 minutes after the birth of child.

4. (b) cause uterine contractions during parturition



In human adult female, oxytocin is a hormone released by the pituitary gland that causes contraction of the uterine muscles during parturition.

5. (c) at the time of fusion of a sperm with an ovum
