Q-1 - 10761409

Select the correct sequence for transport of sperm cells in male reproductive system.

(A) Testis $\rightarrow$ t Epididymis $\rightarrow$ Vasa efferentia $\rightarrow$ Vas deferens $\rightarrow$ Ejaculatory duct $\rightarrow$ Inguinal canal $\rightarrow$ Urethra $\rightarrow$ Urethral meatus

(B) testis $\rightarrow$ Epididymis $\rightarrow$ Vasa efferentia $\rightarrow$ Rete testis-tInguinal canal $\rightarrow$ Urethra

(C) Seminiferous tubules $\rightarrow$ Rete testis $\rightarrow$ Vasa efferentia $\rightarrow$ Epididymis $\rightarrow$ Vas deferens $\rightarrow$ Ejaculatory duct $\rightarrow$ Urethra $\rightarrow$ Urethral meatus

(D) Seminiferous tubules $\rightarrow$ Vasa efferentia $\rightarrow$

Epididymis $\rightarrow$ Inguinal canal $\rightarrow$ Urethra

---

CORRECT ANSWER: C

Q-2 - 14621709

Though the total number of follicles in the ovaries of a nomal young woman is about 4,00,000 the duration between menarche and menopause is limited. This is attributed to the

(A) follicular atresia

(B) liquor folliculi

(C) follicular proliferation

(D) follicular plasticity

CORRECT ANSWER: A

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Q-3 - 14621724

Which of the following layers of the ovum undergoes changes to prevent polyspermy when sperm contacts with it ?

(A) Corona radiata

(B) Plasma membrane

(C) Zona pellucida

(D) Tunica albuginea

CORRECT ANSWER: C

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Q-4 - 14621780

Which one of the following statements about morula in human is

correct ?

(A) It has almost equal quantity of cytoplasm as an uncleaved zygote but much more DNA

(B) It has far less cytoplasm as well as less DNA than in an uncleaved zygote

(C) It has more or less equal quantity of cytoplasm and DNA as in uncleaved zygote

(D) It has more cytoplasm and more DNA than an uncleaved zygote

---

CORRECT ANSWER: A

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Q-5 - 14932343

The nutritive cells found in seminiferous tubules are

(A) Leydig's cells

(B) atretic follicular cells

(C) Sertoli cells

(D) chromaffin cells.

CORRECT ANSWER: C

SOLUTION:

Wall of each seminiferous tubule is formed of a single layered germinal epithelium . Majority of cells in this epithelium are male germ cells and at centain places, there are persent tall Sertoli cells. These cells act as nurse cells providing nutrition to the developing sperms.

The first movements of the fetus and appearance of hair on its head are usually observed during which month of pregnancy?

(A) fourth month

(B) fifth month

(C) sixth month

(D) Third month

CORRECT ANSWER: B

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Q-7 - 14932429

Match column I with column II and select the correct option from the codes given below.

	Column I		Column II
$A.$	Acrosome	(i)	Rudimentary erectile tissue
$B.$	Endometrium	(ii)	Uterus
$C.$	Polar body	(iii)	Oogenesis
$D.$	Clitoris	(iv)	Spermatozoon

(A)

$A-(ii), B-(i), C$

$-(iv), D-(iii)$

(B)

$A-(iv), B-(ii), C$

$-(iii), D-(i)$

(C)

$A-(iv), B-(iii), C$

$-(ii), D-(i)$

(D) A-(iv), B-(iii), C-(i), D-(ii)`

CORRECT ANSWER: B

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Q-8 - 14932539

Level of follicle stimulating hormone (FSH) during infancy and adulthood is the same but spermatogenesis is seen only during adulthood. mRNA levels coding for FSH receptors are also found to be same in testis of both age groups. Which of the following investigations will clarify this paradox a little more?

(A) Culture testicular cells and add LH to see testosterone production.

(B) Culture testicular cells and add testosterone to see comparative rise in FSH mRNA from both age groups.

(C) Culture testicular cells and FSH to see comparative rise in cAMP production by both age groups.

(D) Add both LH and FSH to testicular cells and evaluate cAMP production.

CORRECT ANSWER: A

SOLUTION:

In males, FSH and LH are secreted by hypothalamus. FSH stimulates Sertoli cells of the testes to secrete androgen binding protein (ABP) that concentrates testosterone in seminiferous tubules LH stimulates interstitital cells (Leydig's cells) of the testes to secrete androgens testosterone. Androgens stimulate germinal epithelium to undergo spermatogenesis.

Q-9 - 14932502

Why cannot a woman get pregnant again during pregnancy?

(A) A woman ovulates during pregnancy, but the oviducts are plugged with protective mucus to prevent sperm from entering

(B) High level of hCG in woman's bodies kill sperm.

(C) A woman cannot have intercourse during pregnancy due to the presence of a protective mucus plug that develops in the cervix.

(D) High levels of estrogen and progesterone, secreted by the corpus luteum or placenta during pregnancy. Inhibit the secretion of gonadotropins and prevent ovulation.

CORRECT ANSWER: D

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Q-10 - 10761410

Colostrum, the yellowish fluid, secreted bymother during the initial days of lactation is very essential to impart immunity to the new born infants because it contains:

(A) Immunoglobulin A

(B) Natural killer cells

(C) Monocytes

(D) Macrophages

CORRECT ANSWER: A

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Q-11 - 14932372

Milk secreted from the cells of alveoli of mammary lobes reaches nipple through lactiferous duct (L), mammary duct (M), mammary tubule (T) and mammary ampulla (A) in the following order

(A) TMAL

(B) MTLA

(C) MTAL

(D) ATML.

CORRECT ANSWER: A

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Q-12 - 34596673

Capacitation of of sperm occurs in:

(A) rate testis

(B) epididymis

(C) vas deferens

(D) female reproductive tract'

CORRECT ANSWER: D

SOLUTION:

(D) Capacitation is a process, where the spermatozoa

acquire the capacity to fertilise the eggs. It occurs in female reproductive tract.

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Q-13 - 14932471

At menopause there is rise in urinary exretion of

(A) FSH

(B) STH

(C) MSH

(D) none of these.

CORRECT ANSWER: A

SOLUTION:

Duuring menopause, the level of estrogen in the blood

decreases. Thus, estrogen can no longer inhibit the producction of FSH and LH. Therefore, FSH and LH (mainly FSH) are produced after menopause in large quantities and these (mainly FSH) are excreted out in urine.

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Q-14 - 34596683

Changes in GnRH pulse frequency in females is controlled by circulating levels of:

(A) osestrogen and ihibin

(B) progesterone only

(C) progesterone and inhibin

(D) oestrogen and progesterone

CORRECT ANSWER: D

SOLUTION:

(d) High levels of oestrogen and progesterone give negative feedback to hypothalamus for the release of GnRH. Thus, inhibiting the gonadotropin release.

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Q-15 - 14932425

Which part of ovary in mammals acts as an endocrine gland after ovulation?

(A) Strona

(B) Germinal epithelium

(C) Vitelline membrane

(D) Graafian follicle

CORRECT ANSWER: D

SOLUTION:

Release of ovum from the ovary is called ovulation The Graafian follicle rises to the surface sends out a protuberance or stigma and everts to release the ovum into peritonearl cavity. The empty Graafian follicle contains. A blood continue to proliferate develop yellow carotene pigment or lutein and get converted into lutein cells. This converts the ruptured follicle into yellow body called corpus luteum. it becomes terprory endocrine gland secreting progesterone with small quantity of estrogen.

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Q-16 - 34596691

Ectopic pregnencies are referred to as:

(A) pregnancies with genetic abnormality

(B) implantation of embryo at site other than uterus

(C) implantation of defective embryo in the uterus

(D) pregnancies terminated due to the hormonal imbalance

CORRECT ANSWER: B

SOLUTION:

(b) Ectopic pregnancy develops when an embryo implants somewhere other than the uterus, such as in one pf Fallopian tube. It is also known as eccysis or tubal pregnany.

Q-17 - 14932472

Which of the following statements concerning menopause is correct?

(A) Menopause occurs because all of the female's follicles become hormone-producing corpus luteum at once.

(B) Menopausal symptoms are a result of decrease in the production of FSH and LH.

(C) The onset of menopause is primarly due to follicle atresia.

(D) All of these

CORRECT ANSWER: C

SOLUTION:

Follicular atresia means degeneration of follicles. Thus, if all follicles get degenerated at the age of 45-50 years, there will be no ovulation and hence no menstruation which leads to menopause.

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Q-18 - 34596702

The main function of mammalian corpus luteum is to produce:

(A) oestrogen only

(B) progesterone

(C) human chorionic gonadotropin

(D) relaxin only

CORRECT ANSWER: B

SOLUTION:

(b) The main function of mammalian corpus luteum is the secretion of progesterone which is essential for the maintenance of endometrium. Endometrium is necessary for implanatation of the fertilised ovum and other events of pregnancy.

Corpus luteum also secretes some amount of estrogen to maintain pregnancy. hCG (human Chorionic Gonadotropin) is secreted by placenta for maintaining the corpus luteum.

Relaxin is secreted by corpus luteum during the end of gestation period.

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Q-19 - 14932521

The early stage human embryo distinctly possesses

(A) gills

(B) gill silts

(C) external ear (pinna)

(D) eyebrows

CORRECT ANSWER: B

SOLUTION:

Early human embryo possesses a dorsal hollow nerve cord, a well developed notochord and a series of gill slits, which represent th e fundamental chordate characters.

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Q-20 - 14932401

The principal tail piece of human sperm shows the microtubular

arrangement of

(A) $7 + 2$

(B) $9 + 2$

(C) $11 + 2$

(D) $13 + 2$

CORRECT ANSWER: B

SOLUTION:

The axial filament in the tail of human sperm has $9 + 2$ microtubular arrangement like that of flagella and cilia.

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Q-21 - 34596707

Select the correct option decribing gonadotropin activity in a

normal pregnant female:

(A) High level of FSH and LH stimulates the thickening of endometrium

(B) High level of FSH and LH facilitate implantation of the embryo

(C) High level of hCG stimulates the synthesis of estrogen and progesterone

(D) High level of hCG stimulates the thickening of endometrium

---

CORRECT ANSWER: C

SOLUTION:

(c) hCG (human Chorionic Gonadotropin) secretion occurs about 48-72 hours after implantation. Its level increases and excess of hCG leaks into urine which is

the indication of pregnancy.

This hormone like LH stimulates the corpus luteum to secrete high levels pf progesterone and some estrogen to maintain pregnancy. there steroids are required to maintain the development of placenta, initiate the development of mammaryglands and in hibit ovulation.

Q-22 - 14932467

Withdrawal of which of the following hormones is the immediate cause of menstruation?

(A) progesterone and estrogen continue the hypertrophy of endometrial lining

(B) Estrogen

(C) FSH

(D) FSH-RH

CORRECT ANSWER: A

SOLUTION:

Progesterone is required for the maintenance of the endometrial lining of the uterus. As soon as the production of LH from anterior lobe of the pituitary. The endometrium of the uterus breaks donw and menstruation begins.

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Q-23 - 34596714

Menstrual flow occurs due to lack of:

(A) progesterone

(B) FSH

(C) oxytocin

(D) vasopressin

CORRECT ANSWER: A

SOLUTION:

Menstrual flow occurs due to the lack of progesterone. Progesterone is secreted by corpus luteum and is essential for the maintenance of endometrium. This endometrium is responsible for implanation of the festilised is responsible for implanation of the festilised ovum, i.e. pregnancy.

FSH Stimulates gonadal activity and also called as gonadotrophins.

Oxytocin Stimultates contraction in uterus during childbirht.

Vasopressin Stimulate resorption of water and

electrolytes by the distal tubules, also called as

Antidiuretic Hormone (ADH).

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Q-24 - 14932560

Urethral meatus refers to the

(A) urinogential duct

(B) opening of vas deferens into urethra

(C) external opening of the uriogenital duct.

(D) muscles surrounding the urinogenial duct.

CORRECT ANSWER: C

SOLUTION:

Meatus' means natural body opening or canal. Urethral

meatus refers to the external opening of urinogential duct, through which, in males, urine and semen both exits from the body.

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Q-25 - 14932352

Seminal plasma in humans is rich in

(A) fructose and calcium but has no enzymes

(B) glucose and certain enzymes but has no calcium

(C) fructose and certain enzymes but poor in calcium

(D) fructose, calcium and certain enzymes.

CORRECT ANSWER: D

SOLUTION:

Secretion of seminal vesicles, prostate gland and bulbourethral gland constitute seminal plasma which is rich in fructose, calcium and certain enzymes.

Q-26 - 34596727

The leydig cells as found in the human body are the secretory source of

(A) progesterone

(B) intestinal mucus

(C) glucagon

(D) androgens

CORRECT ANSWER: D

SOLUTION:

(d) Interstitial ells or cells of Leydig are present in the connective tissue lying in between seminiferous tubules. These cells secrete oestradiol-steroid androgens, e.g. testosterone. Androgens stimulate male characters, influence male sexual behaviour (libido) and regulate the development, maturation and functions of male accessory sex organs.

Q-27 - 14932517

Gastrula is the embryonic stage in which

(A) cleavage occurs

(B) blatocoel form

(C) germinal layers

(D) villiform.

CORRECT ANSWER: C

SOLUTION:

Transformation of the blastocyst into gastrula with primary germ layers by rearrangement of the cells is called gastrulation.

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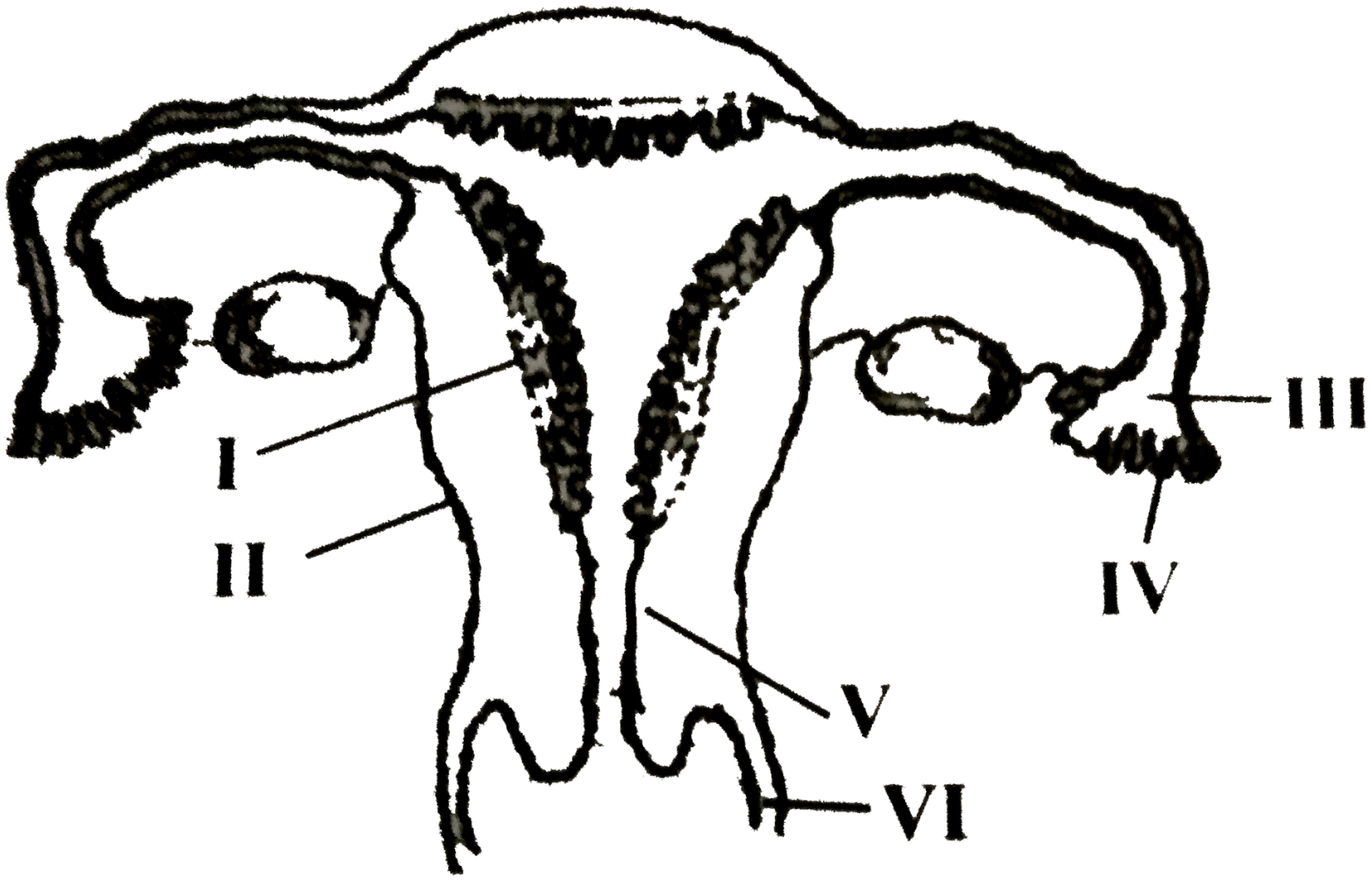
Q-28 - 34596735

The given figure depicts a diagrammatic sectional view of the human female reproductive system. Which set of three parts out of $I - Vi$ have been correctly identified?



(A) C-Infundibulum, D-Fimbriae, E-Cervix

(B) D-Oviducal funnel, E-Uterus, F-Cervix

(C) A-Perimetrium, B-Myometrium, C-Fallopian tube

(D) B-Endometrium, C-Infundibulum, D-Fimbriae

CORRECT ANSWER: A

SOLUTION:

(a) The Fallopian tube is about 10-20 cm long and

extendes from the periphery of each ovary to the uterus.

The part closer to the ovary is funnel shaped and is called infundibulum. The edges of the infundibulum posses finger-like projwections called fimbriae, which help in collection of the ovum after ovulation. the uterus opens into vagina through a narrow cervix.

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Q-29 - 34596750

Seminal plasma in human males is rich in:

(A) fructoes and calcium

(B) glucose and calcium

(C) DNA and testosterone

(D) ribose and potassium

CORRECT ANSWER: A

SOLUTION:

(a) Seminal plasma is composed of the fluid and sperms from the vasa deferens (about 10% of the total), fluid from the seminal vesicles (almost 60 percent), fluid from the prostate gland (about 30 percent) and small amount of mucous glands, especially the bulbourethral glands.

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Q-30 - 14932421

In oogensis, egg is fertilised by sperm at which stage?

(A) Primary oocyte

(B) Secondary oocyte

(C) Oogonium

(D) Ovum

CORRECT ANSWER: B

SOLUTION:

In human beings, ovum is released from the ovary in the secondary oocyte stage. The ovary in the secondary oocyte stage. The maturation of secondary oocyte is completed in the mother's oviduct (Fallopian tube) usually after the sperm has entered the secondary oocyte for fertilisation.

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Q-31 - 34596742

Sertoli cells are found to

(A) ovaries and secrete progesterone

(B) adrenal cortex and secrete adrenaline

(C) seminiferous tubules and provide nutrition to germ cells

(D) pancreas and secrete cholecystokinin

CORRECT ANSWER: C

SOLUTION:

(c) the epithelium of seminiferous tubule is made up of two typed of cells, i.e sertoli cells and spermatogenic cells. Sertoli cells are enlongated and pyramidal which partially envelope the spermatogenic cells. These nourish spermatoza, act as nurse cells for differentiating spermatozoa. These secrete a glycoprotein hormone, called inhibin which is involved in the negative feed back control of sperm production.

Q-32 - 14932451

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

(A) Release of egg 5th day

(B) Endometrium regenerates 5-10 days

(C) Endometrium secretes nutrients for implantation 11-18 days

(D) Rise in progesterone level 1-15 days

CORRECT ANSWER: B

SOLUTION:

The endometrium of the uterus breaks down during menstrual cycle. It regenerates after 5-10 days.

Q-33 - 34596756

The first movements of the fetus and appearance of hair on its head are usually observed during which month of pregnancy?

(A) Fourth month

(B) Fifth month

(C) Sixth month

(D) Third month

CORRECT ANSWER: B

SOLUTION:

(b) During development of foetus in human by week 20, hair begin to grow including eyebrows and eyelashes, fingerprints develop. Fingernails and toe nails grow. Firm hand grip. Between 16 and 20 weeks the first

movements of the foetus are observed.

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Q-34 - 34596760

The part of Fallopian tube closest to the ovary is:

(A) isthmus

(B) infundibulum

(C) cervix

(D) ampulla

CORRECT ANSWER: B

SOLUTION:

(b) The Fallopian tubes, uterus and vagina constitute the female accessory ducts. Each Fallopian tube extends

from the periphery of each ovary to the uterus. The part closer to the ovary is funnel-shaped infundibulum, which help in collection of the ovum after ovulation.

Q-35 - 14932376

How many sperms are formed from 4 primary spermatocytes?

(A) 4

(B) 1

(C) 16

(D) 32

CORRECT ANSWER: C

SOLUTION:

One primary spermatocyte produces four spermatozoa, therefore, four primary spermatocytes will produce 16 spermatozoa.

Q-36 - 34596759

Which one of the following statements about morula humans is correct?

(A) It has almost equal quantity of cytomplasm as an uncleaved zygote but much more DNA

(B) It has far less cytoplasm as well as less DNA than in an uncleaved zygote

(C) It has more or less equal quantity of cytoplasm and DNA

(D) It has more cytoplasm and more DNA than an

uchleaved zygote

CORRECT ANSWER: A

SOLUTION:

(a) Cleavage divvisions are mitotic division, in which the single-celled zygote is converted into a multicellualr morula. But during cleavage divisions, there is no growth of resultant daughter cells/blastomeres. So, the DNA content will increase, but there is no increase or insignificant increase in amount of protoplasm.

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Q-37 - 14932485

Preparation of sperm before penetration of ovum is

(A) spermiation

(B) cortical reaction

(C) spermiogenesis

(D) capacitation.

CORRECT ANSWER: D

SOLUTION:

The secretions of the female genitaltract remove coating substances dceposited on the surface of the sperms particulary those on the acrosome. Thus, the receptor sites on the acrosome are exposed and sperm becomes active to penetrate the egg. This phenomennon of sperm activation in mammals is known as capacitation.

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Q-38 - 34596768

Which one of the following is the correct matching of the events occurring during mentrual cycle?

(A)

(a) Ovulation — LHand FSH attain peak and sharp fall in the secre of progesterone

(B)

(b) Proliferative phase — Rapid regeneration of myometrium and maturation Graafian follicle

(C)

(c) Development of corpus luteum — secretory phase an increased secretion progesterone

(D)

(d) Menstruation — Breakdown of myome and ovum not fertil

CORRECT ANSWER: B

SOLUTION:

(b) In secretory phase during ovulation, the follicle breaks and collapes under the continuous influence of Luteinising Hormone (LH). It begins to enlarge and forms a yellowish structure, called the corpus luteum. The corpus luteum plays an important role in the preparation of the endometrium for the implanatation of the fertilised egg by secreting oestrogens and progesterone.

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Q-39 - 34596762

A change in the amount of yolk and its distribution in the egg will affect.

(A) formation of zygote

(B) pattern of cleavage

(C) number of blastomeres produced

(D) fertilisation

CORRECT ANSWER: B

SOLUTION:

(b) Patterns of cleavage are based on amount of yolk and its distribution in the eggs. Any change in amount and distribution pf yolk directly affects the pattern of cleavage.

As holoblastic cleavage is found in microlecithal, mesolecithal or telolecithal types of eggs. meroblastic cleavage is found in macrolecithal and highly telocithal eggs of reptiles, birds and monotreme mammals.

Q-40 - 14932423

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.

CORRECT ANSWER: A

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Q-41 - 34596777

Which part of ovary in mammals acts as an endocrine gland after ovulation?

(A) graafian follicle

(B) stroma

(C) germinal epithelium

(D) vitelline membrane

CORRECT ANSWER: A

SOLUTION:

(a) During ovulation, the mature follicle or Graafian follicle bursts and the ovum is released. This is named as corpus luteum which serves as a temporary endocrine gland by releasing prigestrone and oestrogen.

Q-42 - 14932486

The sex of the fetus will be decided at

(A) fertilisation by male gamete

(B) implantation

(C) fertilisation by female gamete

(D) the start of cleavage

CORRECT ANSWER: A

Q-43 - 34596746

Vasa efferentia are the ductules leading from:

(A) testicular lobules to rete testis

(B) rete testis to vas deferens

(C) vas deferens to epididymis

(D) epididymis to urethra

CORRECT ANSWER: B

SOLUTION:

(b) Rete testis is connected to epididymis by 12-20 fine tubules called vasa efferentia or ductuli efferens. These collecct sperms from inside the testis and transfer them to the epididymis. Vasa deferens arises from caudal epididymis, conduts sperms from epididymis to urethra.

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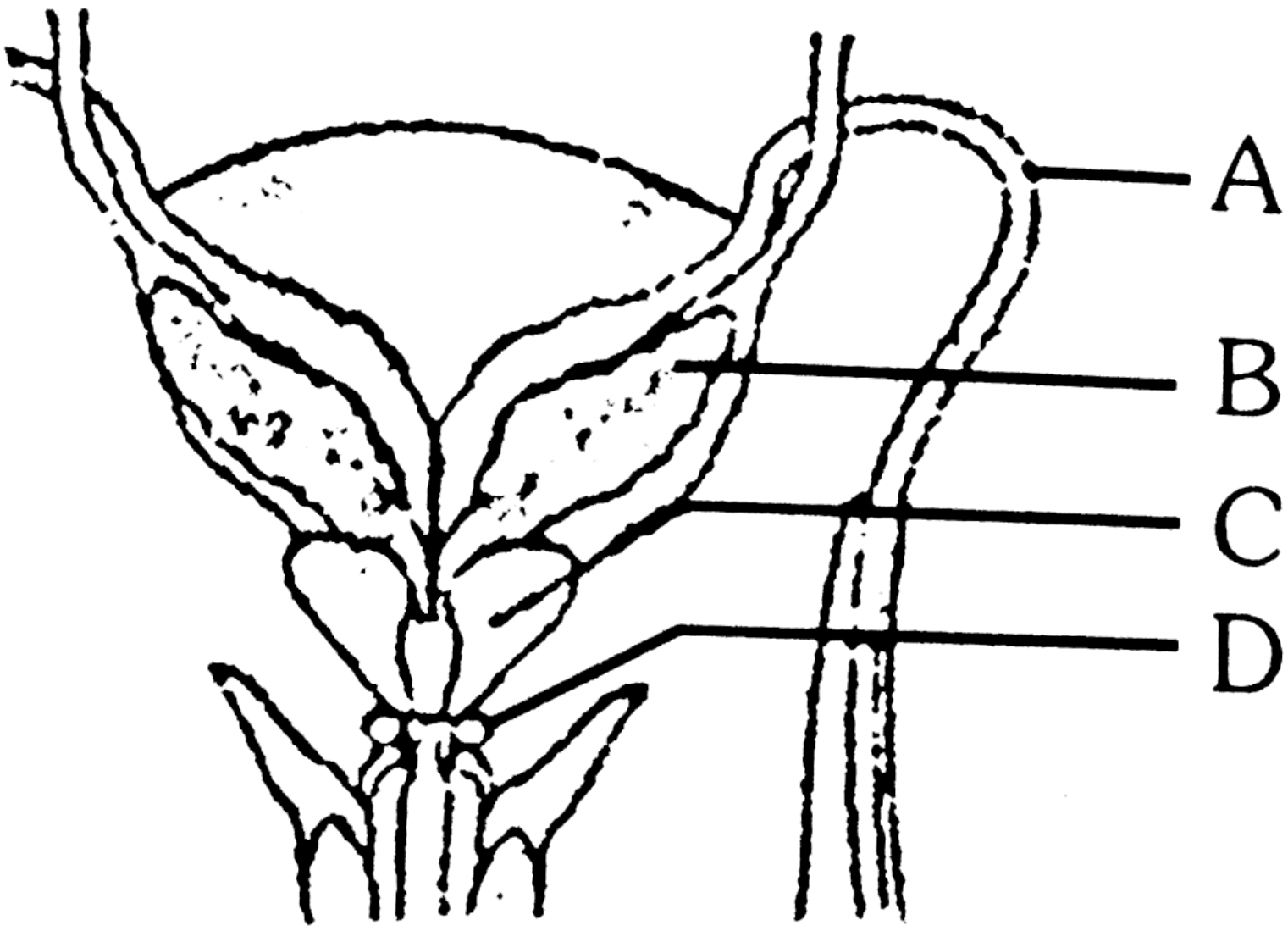
Q-44 - 34596765

Given below is a diagrammatic sketch of a portion of human male

reproductive system . Select the correct set of the names of the parts labelled . A , B , C, D:-



(A)

	A	B	C	D
(a)	Ureter	Prostate	Seminal vesicle	Bulbourethra

(B)

	A	B	C	
(a)	Vas deferens	Seminal vesicle	Prostate	Bulbou

(C)

	A	B	C
(a)	Vas deferens	Seminal vesicle	Bulbourethral gla

(D)

	A	B	C	
(a)	Ureter	Seminal vesicle	Bulbourethral gland	F

CORRECT ANSWER: B

SOLUTION:

Option (b) is correct, A = Vas deferens.

B = Seminal vesicle, C = Prostrate and

D = Bulbourethral gland.

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Q-45 - 14932391

Spermatogenesis is induced by

(A) FSH

(B) ICSH

(C) STH

(D) ATH.

CORRECT ANSWER: A

SOLUTION:

FSH acts on the Sertoli cells and stimulate secretion of some factors which help in the process of spermatogenesis.

Q-46 - 14932449

Which one of the following is the correct matching of the events occurring during mentrual cycle?

(A) Proliferative phase: Rapid regeneration of myometrium and maturaton of Graafian follicle

(B) Secretory phase: Development of corpus luteum and increased secretion of progesterone

(C) Menstruation: Breakdown of myometrium and ovum not fertilised

(D) Ovulation: LH and FSH attain peak level and sharp fall in the secretion of progesterone

---

CORRECT ANSWER: B

Q-47 - 34596780

If mammalian ovum fails to get fertilised, which one of the following is unlikely?

(A) Corpus luteum will disintegrate

(B) Estrogen secretion further decreases

(C) Primary follicle starts developing

(D) Progesterone secretion rapidly decline

CORRECT ANSWER: B

SOLUTION:

(b) If mammalian ovum fails to get fertilized, the estrogen secretion does not decrease further, while corpus luteum will disintegrate. Primary follicles starts developing and progestrone secretion rapidly declines.

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Q-48 - 14932488

Cleavage differes from mitosis in lacking

(A) synthetic phse

(B) growth phase

(C) both a and b

(D) none of these.

CORRECT ANSWER: B

SOLUTION:

Refer to answer 107.

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Q-49 - 34596770

Which one of the following statements is incorrect about menstruation?

(A) During normal menstruation about 40 ml blood is lost

(B) The menstrual fluid can easily clot

(C) At menopause in the female, there is especially

abrupt increase in gonadotropic hormones

(D) The beginning of the cycle of menstruation is called menarche

---

CORRECT ANSWER: B

SOLUTION:

(b) During normal menstruation approximately 40 mL of blood and an additional 35 mL of serous fluids are lost. The menstrual fluid is normally non-clotting because a fibrinolysin is released alongwith necrotic endometrial material.

Q-50 - 14932411

A human female is born with a million of eggs (primary oocyte) at the time of birth but only some 500 eggs get a chance of maturiy.

What is the destiny of rest of the eggs?

(A) Rest of the eggs differrentiate back to thecal and granulosa cells.

(B) Rest of the eggs nurture the dominant follicular cell.

(C) Rest of the eggs move out of the ovary and are destroyed by leucocytes.

(D) Rest of the eggs break down and are abosorbed i.e., degenerative follicular atresia.

CORRECT ANSWER: D

SOLUTION:

The total numbe of follicles in two ovaries of a normal young adult woman is about four lakhs but only about 500 eggs reach maturity because many ovarian follicles (during primary oocyte stage) undergo degeneration.

This degenerative process of follicles is called follicular atresia and such follicles are known as atretic follicles.

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Q-51 - 10761370

Extrusion of second polar body from egg occurs:

(A) simultaneously with first cleavage

(B) after entry of sperm but before fertilization

(C) after fertilization

(D) before entry of sperm into ovum

CORRECT ANSWER: B

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Q-52 - 14621685

Some important events in the human female reproductive cycle are given below. Arrange the events in a proper squence.

A- Secretion of FSH, B - Growth of corpus luteum,

C- Growth of the follicle and oogenesis, D- Ovulation

E - Sudden increase in the levels of LH.

(A) A $\rightarrow$ D $\rightarrow$ C $\rightarrow$ E $\rightarrow$ B

(B) B $\rightarrow$ A $\rightarrow$ C $\rightarrow$ D $\rightarrow$ E

(C) C $\rightarrow$ A $\rightarrow$ D $\rightarrow$ B $\rightarrow$ E

(D) A $\rightarrow$ C $\rightarrow$ E $\rightarrow$ D $\rightarrow$ B

CORRECT ANSWER: D

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Q-53 - 14621715

Identify the human developmental stage shown here as well as the

related correct place its implantation in a normal pregnant woman,

and select the right option for the two, together

(A)

Developmental stage		Site of implantation
Late morula	-	Middle part of Fallopian tub

(B)

Developmental stage		Site of implantation
Blastula	-	End part of Fallopian tube

(C)

Developmental stage		Site of implantation
Blastocyst	-	Uterine wall

(D)

Developmental stage		Site of implantation
Blastocyst	-	Uterine wall

CORRECT ANSWER: C

Q-54 - 14621791

Shortest phase in the menstrual cycle of women is

(A) menstrual phase

(B) luteal phase

(C) ovulatory phase

(D) follicular phase

CORRECT ANSWER: C

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Q-55 - 14932344

Sertoli cells ar regulated by the pituitary hormone know as

(A) LH

(B) FSH

(C) GH

(D) prolactin.

CORRECT ANSWER: B

SOLUTION:

FSH stimulates Sertoli cells of the testes to secrete an

androgen binding protein that concentrates testosterone

in the seminiferous tubules. Sertoli cells also secrete a harmone called inhibin which suppresses FSH synthesis.

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Q-56 - 14932440

Repair of endometrium is undertaken by

(A) LH

(B) FSH

(C) estrogen

(D) prolactin.

CORRECT ANSWER: C

SOLUTION:

Estrogen secreted from ovarian follicles under the influence of FSH. Causes proliferation of the endometrium of the uterine wall.

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Q-57 - 34596676

A temporary endocrine gland in the human body is

(A) pinela gland

(B) corpus cardiacum

(C) corpus luteum

(D) corpus allatum

CORRECT ANSWER: C

SOLUTION:

(c) corpus luteum is a temporary endocrine gland in the human body. It secretes small amount of estradiol and significant amount of progesterone hormone. In the absence of fertilisation, the corpus luteum degenerates.

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Q-58 - 14932460

Name of hormone that has no role in menstruation.

(A) LH

(B) FSH

(C) estradiol

(D) TSH

CORRECT ANSWER: D

SOLUTION:

TSH or thyroid stimulating hormone has no role in menstruation.

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Q-59 - 34596680

Fertilization in humans is practically feasible only if:

(A) the ovum and sperms are transported simultaneously to ampullary - isthmic junction of the Fallopian tube

(B) the ovum and sperms are transported simultaneously to ampullary - isthmic junction of the cervix

(C) the sperms are transported into cervix with in 48 hrs of release of ovum in uterus

(D) the sperms are transported into vagina just after the release of ovum in Fallopian tube

CORRECT ANSWER: A

SOLUTION:

(a) Fertilisation in humans, is practically feasible only if the sperm and ovum are transported simultaneously at ampullary-isthmic junction of Fallopian tube.

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Q-60 - 14932409

At what stage of life is oogenesis initiated in a human female?

(A) At puberty

(B) During menarch

(C) During menopause

(D) During embryonic development

CORRECT ANSWER: D

SOLUTION:

Oogensis is the process of formation of functional haploid ova from the diploid germinal cells in the ovary. Oogensis begain during embryonic development but is completed only after fertilisation of the secondary oocyte with the sperm.

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Q-61 - 34596681

Identify the correct statement on 'inhibin'.

(A) Is produced by granulosa cells in ovary and inhibits the secretion of FSH

(B) is produced by granulosa cells in ovary and inhibits

the secretion of LH

(C) Is produced by nurse cells in testes and inhibits the secretion of LH

(D) Inhibits the secretion of LH, FSH and prolactin

CORRECT ANSWER: A

SOLUTION:

(a) Inhibin is produced by granulosa cells of ovarian follicles in th ovary and has negative feedback effect on the secretion of FSH.

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Q-62 - 14932456

If mammalian ovum fails to get fertilised, which one of the following is unlikely?

(A) Corpus luteum will disintegrate

(B) progestrone secretion rapidly declines

(C) estrogen secretion increases

(D) primary follicle starts developing

CORRECT ANSWER: C

SOLUTION:

If ovum fails to get fertilised, then corpus luteum (source of progesterone and estrogen) will disintegrate resulting in decrease in the level of progesterone and estrogen. Thus. Endometrial lining of the uterus sloughs off and menstruation begins, marking a new cycle.

Match column I with column II and select the correct option using the codes given below:

Column I		Column II	
A	Mons pubis	(i)	Embryo formation
B	Antrum	(ii)	Sperm
C	Trophectoderm	(iii)	Female external genitalia
D	Nebenkern	(iv)	Graafian follicle

(A)

A	B	C	D
3	4	2	1

(B)

A	B	C	D
3	4	1	2

(C)

A	B	C	D
3	1	4	2

(D)

A	B	C	D
1	4	3	2

CORRECT ANSWER: B

SOLUTION:

The correct match are

(a) Mona pubis-Female external ganitalia

(b) Antrum-Graafian follicle

(c) Tropherctoderm-Embryo development

(d) Nebenkem-Sperm

Q-64 - 14932510

During the development of embryo, which of the following occurs first?

(A) Differentiation of organ

(B) Differentiation of tissue

(C) differentiation of organ system

(D) Differentiation of cells

CORRECT ANSWER: D

SOLUTION:

After fertilisation the zygote undergoes the process of cleavage to form a number of cells which ultimately undergo the process of differntiation and then forms tissues,, organ and lastly organ systems.

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Q-65 - 14932370

Bartholin's glands are situateed

(A) on the either side of vagina in humans

(B) on either side of vas deferens in humans

(C) on either side of penis in humans

(D) on either side of Fallopian tube in humans.

CORRECT ANSWER: A

SOLUTION:

Bartholin's glands are a pair of small glands situated on each side of the vaginal opening in human females. They secrete a thick, viscid secretion for lubrication during copulation.

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Q-66 - 34596693

Which of the following layers in an antral follicle is acellular?

(A) Granulosa

(B) Theca interna

(C) Stroma

(D) Zona pellucide

CORRECT ANSWER: D

SOLUTION:

(d) Follicles that form an antrum during maturation are called antral follicles or Graafian follicles.

During the development of the follicle, a glycoprotein polymer capsule called the zona pellucida which is acellular, forms around the oocyte, separating it from the surrounding granulosa cells.

This layer remains with the oocyte after ovulation, and contains enzymes that catalyse with sperm to allow penetration.

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Q-67 - 14932427

Mark the odd item in each series and select the correct option.

(i) Spermatocyte, polar body, spermatid, spermato-gonium

(ii) Endometrium, corpus luteum, acrosome, Graafian follicle

(iii) Vas deferens, Fallopian tube, epididumis, Cowper's gland

(iv) Testes, prostate, seminal veriscles, Cowper's gland

(A) `{:("(i)",(ii),(iii),(iv)),
("spermatid","Endometrium","Epididymis","Prostate"):}

(B) `{:("(i)",(ii),(iii),(iv)),("Polar
body","Acrosome","Fallopian tube","Testes"):}

(C) `{:("(i)",(ii),(iii),(iv)),("Spermatocyte","Corpus
luteum","Vas deferens","Cowper's gland"):}

(D)

(i)	(ii)	(iii)
Spermatogo-nium	Graafian follicle	Cowper's gland

CORRECT ANSWER: B

Q-68 - 34596696

Which of the following events is not associated with ovulation in human female?

(A) Decrease in oestradiol

(B) Full development of Graafian follicle

(C) Release of secondary oocyte

(D) LH surge

CORRECT ANSWER: A

SOLUTION:

(a) Oestradiol levels fall after ovulation and before menstruation while, its levels peak prior to ovulation. Oestradiol are not associated with ovulation. Decrease in oestradiol level result ibn the cessation of

menstruation.

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Q-69 - 14932501

The main function of trophoectodrm

(A) formation of the body of developing embryo

(B) formation of future ectoderm

(C) formation of placenta.

CORRECT ANSWER: D

SOLUTION:

During embryonic development, the blastocyst formed consists of an outer envelope of cells called the trophoblast and the inner cell mass. The cells of trophoblast form chorion and amnion and hence part of

placenta.

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Q-70 - 14932355

A sex gland which contributes fluid containing sugar fructose that provides spermatozoa energy for swimming and hormone prostaglandins that stimulate contractions in the female reproductive tract to aid sperm-ovum interaction is

(A) Cowper's gland

(B) prostate gland

(C) seminal vesicle

(D) preputial gland.

CORRECT ANSWER: C

SOLUTION:

The seminal vesicles are a pair of sac like structures near the base of the bladder. Their ducts join the vasa deferentia to form to ejaculatory ducts. They produce an alkaline secration which contains fructose, prostaglandins and clotting proteins that are different from those in blood.

Q-71 - 34596699

The shared termminal duct of the reproductive and urinary system in the human male is:

(A) urethra

(B) ureter

(C) vas deferens

(D) vesa efferentia

CORRECT ANSWER: A

SOLUTION:

(a) In the human male, urethra provides an xit for urine from the urinary bladder as well as semen from vasa differentia during ejaculation. Thus, it is also known as urogential duct.

In males, it is about 8 inches (20 cm) long and opens at the end of the penis.

Vas deferens and vasa efferentia are the male sex accessory ducts.

Ureters are the tubes that carry urine fron the kidney to urinary bladder.

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

(A) chorion

(B) zona pellucida

(C) corona radiata

(D) vitelline membrane

CORRECT ANSWER: C

SOLUTION:

Immediately after ovulation, the layer that forms around the ovum is called corona radiate. It is formed by the granulosa cells of cumulus oophorus. Corona radiata probably increases the likelihood that the ovum will be picked up in the uterine tube.

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Q-73 - 34596712

Which one of the following is not the function of placenta?It:

(A) Facilitates supply of oxygen and nutrients to embryo

(B) secretes oestrogen

(C) facilitates removal of carbon dioxide and waste material from embryo

(D) secretes oxytocin during parturition

CORRECT ANSWER: D

SOLUTION:

Pituitary secretes oxytocin during parturition.

The functions of placenta are supply of oxygen and nutrients to embryo. It also secretes estrogen, facilitates

removal of carbon dioxide and waste materials from embryo.

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Q-74 - 14932563

The membranous cover of the ovum at ovulation is

(A) corona radiata, zona pellucida and vitelline membrane

(B) zona radiata

(C) zona pellucida

(D) chorion.

CORRECT ANSWER: A

SOLUTION:

The outermost membranous cover to the ovum at ovulation is corona radiata. It is formed by follicular cells. Inner to corona radiata is zona pelluicda, which is made up of three different glycoproteins secreted by the ovum itselt.

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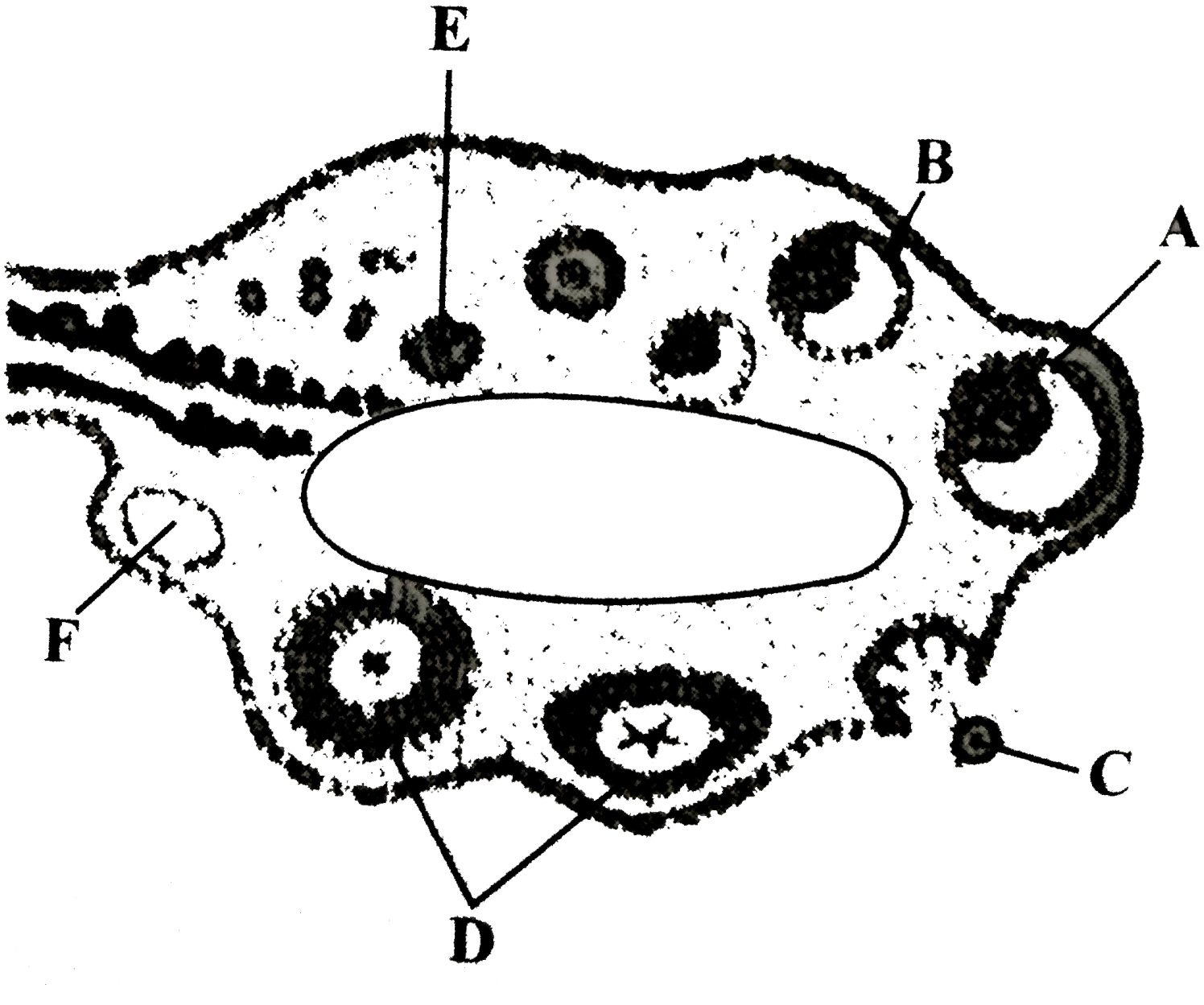
Q-75 - 14932414

In the given T.S. of human ovary identify A to F and select the correct option.



(A) A-secondary follicle, B-Tertiary follicle with antrum, C-Ovum, D-Corpus luteum, E-Primary follicle, F-Corpus albicans

(B) A-Graafian follicle, B-Tertiary follicle with antrum, C-Ovum, D-Corpus spongiosum, E-Primary follicle, F-Corpus albicans

(C) A-Graafian follicle, B-Tertiary follicle with antrum, C-Ovum, D-Corpus albicans, E-Primary follicle, F-Corpus luteum

(D) A-Graafian follicle, B-Tertiary follicle with antrum, C-Ovum, D-Corpus luteum, E-Primary follicle F-Corpus albicans

---

CORRECT ANSWER: D

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Q-76 - 34596723

The signals for parturition orginate from:

(A) both placenta as well as fully developed foetus

(B) oxytocin released from maternal pituitary

(C) placenta only

(D) fully developed foetus only

CORRECT ANSWER: A

SOLUTION:

The process of delivery of the foetus (childbirth) is called parturition which is induced by a complex neuroendocnne mechanism. The signals for parturition originate from the fully developed foetus and the placenta which induce mild uterine contractions called foetal ejection reflex.

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Q-77 - 14932474

A reaction fo granules content which harden the zona pellucida and ensures sure block to polyspermy is

(A) acrosomal reaction

(B) cortical reaction

(C) acrosin reaction

(D) binding reaction

CORRECT ANSWER: B

SOLUTION:

Immediately after the fusion of sperm and egg plasma membranes, the egg shows a cortical reaction. In this reaction . In this reaction, the cortical granules present beneath the egg's plama membrane fuse with the plama membrane and release enzymes between it and zona pellucida. These enzymes harden the zona pellucida, which now functions to block polyspermy.

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Q-78 - 34596719

Which one of the following statements is not true with respect to

viability of mammalian sperm?

(A) Sperm is viable for only up to 24 hrs

(B) Survival of sperm depends on the pH of the medium and is more active in alkaline medium

(C) Viability of sperm is determined by is motility

(D) Sperms must be concentrated in a thick suspension

CORRECT ANSWER: D

SOLUTION:

Viability of a sperm means the capability of a sperm, to fertilise an egg.

Sperms are viable for 24 h to 48 h, whereas the ovum is viable for only 24 h.

Q-79 - 14932504

hCG, hPL and relaxin are produced in women

(A) at the time of puberty

(B) only during pregnancy

(C) at the time of menopause

(D) during menstruation.

CORRECT ANSWER: B

SOLUTION:

During pregnancy, placenta acts as an endocrine gland and secretes some hormones such as estrogen, progesterone, human chorionic gonadotropin, chorionic cortcotropin and relaxin.

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Q-80 - 14932375

How many sperms are formed from a secondary spermatocyte?

(A) 4

(B) 8

(C) 2

(D) 1

CORRECT ANSWER: C

Q-81 - 34596732

If for some reason, the vesa effeerentia in the human reproductive system get blocked, the gametes will not transported from

(A) epididymis to vas deferens

(B) ovary to uterus

(C) vagina to uterus

(D) testes to epididymis

CORRECT ANSWER: D

SOLUTION:

(d) Vasa efferentia (ductuli efference) are 10-20 fine tubules which connect rete testis with an epididymis (ductus epididymis). The latter is a pair of ducts from each testis which is formed bt union of its vasa efferentia. If tha vasa efferentia get blocked, the sperm will not be transported from testes to epididymis.

Q-82 - 14932553

The immature male germ cells undergo division to produce sperms by the process of spermatogenesis. Choose the correct one with reference to above.

(A) Spermatogonia have 46 chromosomes and always undergo meiotic cell division.

(B) Primary spermatocytes divide by mitotic cell division.

(C) Secondary spermatocytes have 23 chromosomes and undergo second meiotic division.

(D) Spermatozoa are transformed into spermatids.

CORRECT ANSWER: C

SOLUTION:

Spermatogonia are diploid cells on the inside wall of

seminiferous tubules that multiply by mitotic edivisions, some of the spermatogonia called primary spermatocyte undergo meiosis-I to give rise to secodnary spermatocytes (haploid). Each secondary spermatocyte undergoes meiosis-II to give rise to two haploid spermatids which are transferred to spermatozoa by speriogenesis.

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Q-83 - 14932448

Below is given the unorganised list of some important events in the human female reproductive cycle. Identify the correct sequence of these events and select the correct option.

(i). Secretion of FSH

(ii). Growth of corpus luteum

(iii). Growth of the follicle

(iv). Ovulation

(v) Sudden increase in the levels of LH

(A) (i) $\rightarrow$ (ii) $\rightarrow$ (iii) $\rightarrow$ (v) (ii)

(B)

$(ii) \rightarrow (i) \rightarrow (iii)$

$\rightarrow (iv) \rightarrow (v)$

(C)

$(iii) \rightarrow (i) \rightarrow (iv)$

$\rightarrow (ii) \rightarrow (v)$

(D)

$(i) \rightarrow (iii) \rightarrow (v)$

$\rightarrow (iv) \rightarrow (ii)$

CORRECT ANSWER: D

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Q-84 - 34596739

The testes in humans are situated outside the abdominal cavity inside a pouch called scrotum. The purpose served is for

(A) escarping any possible compression by the visceral organs

(B) providing more space for the growth of epididymis

(C) providing a secondary sexual feature for exhibiting the male sex

(D) maintaining the scrotal temperature lower than the internal body temperature

---

CORRECT ANSWER: D

SOLUTION:

(d) The testes in humans are situated outside the abdominal cavity in scrotal sacs. This is because the temperature of scrotal sacs is $2 - 2.5C$ which is less

than internal body temperature.

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Q-85 - 14932493

Statement-1: Upto morula stage, the cells divide without any increase in size.

Statement-2: Zona perllucida remains intact till cleavage is complete.

(A) Both statement 1 and 2 are correct.

(B) Statement 1 is correct but statement 2 is incorrect

(C) statement 1 and incorrect but statement 2 is correct.

(D) Both statement 1 and 2 are incorrect.

CORRECT ANSWER: A

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Q-86 - 14932382

Consider the following statements each with two blanks.

(A) Seminiferous tubules produce __(i)__ while Leydig's cells produce __(ii)__.

(B) In females, urethra is small and conducts __(iii)__ while in males it conducts urine and __(vi)__.

(C) The process of formation of spermatozoa form spermatogonia is called __(v)__ and the process of maturation of spermatids into spermatozoa is called __(vi)__.

Which one of the following options, gives the correct fill ups for the respective blanks numbers from (i) to (vi) in the statements?

(A) (i)-spermatozoa, (ii)-testosterone,

(v)-spermatogenesis, (vi)-spermiogensis

(B) (i)-testosterone, (ii)- spermatozoa,

(iii)-urine, (iv)-semen

(C) (i)-estrogen, (ii)-testosterone,

(v)-spermiogenesis, (vi)-spermatogenesis

(D) (iii)-urine, (iv)-semen,

(v)-spermiogenesis, (vi)-spermatogenesis

CORRECT ANSWER: A

Q-87 - 34596757

Which one of the following statements about human sperms is correct?

(A) Acrosome has a conical pointed structure used for piercing and penetrating the egg, resulting in fertilisation

(B) The sperm lysins in the acrosome dissolve the egg envelope facilitating fertilisation

(C) Acrosome serves as a sensory structure leading the sperm towards the ovum

(D) Acrosome serves no particular function

CORRECT ANSWER: B

SOLUTION:

(b) Penetration of human sperm is a chemical mechanism. In this, acrosome of sperm undergoed acrosomal reaction and release certain sperm lysins, which disslove the egg envelope locally and make the path for the penetration of sperm. Sperm lysins are acidic proteins. It br gt These sperm lysins contain a lytic enzyme hyaluronidase (that disslove the hyaluronic acid polymers in the intercellular spaces, which holds the granulosa cells of corona radiata together) corona penetrating enzyme and acrosin.

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Q-88 - 14932481

Besides activating the egg, another role of a sperm is to carry to egg

(A) RNA

(B) mitochondria

(C) DNA

(D) ribosomes.

CORRECT ANSWER: C

SOLUTION:

During fertilisation, the head of the sperm containing nucleus (DNA) enters the egg leading to formation of diplod zygote.

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Q-89 - 34596763

Which one of the following is the most likely reason of not occurring regular menstruation cycle in females?

(A) Fertilisation of the ovum

(B) Maintenance of the hypertrophical endometrial lining

(C) Maintenance of high concentration of sex- hormones in the blood stream

(D) Retention of well-developed corpus luteum

CORRECT ANSWER: A

SOLUTION:

(a) If fertilisation occurs and foetus is implanted in the endometrium, the trophoblast cells of the developing

placents secrete a hormone human Chorionic Gonadotrophic (hCG). This hormone like LH maintains the corpus luteum and the secretion of progesterone and estradiol by it. These two hormones check the breakdown of the endometrium of the uterus.The absence of menstrual bleeding is the earliest sign of pregnancy.

Q-90 - 14932345

If for some reason, the vesa effeerentia in the human reproductive system get blocked, the gametes will not transported from

(A) testes to epididymis

(B) epididumis to vas deferens

(C) ovary to uterus

(D) vagina to uterus.

CORRECT ANSWER: A

SOLUTION:

Vasa efferntia are fine cilliated ductules that arise from the seminiferous tubules of testis (where sperms are formed) and open into epididymis which is a mass of long narrow closely coiled tubule lying along the inner side of testis. Epididymis stroes the sperms .Thus, if vasa efferentia get blocked, sperm will not be transported from testes to epididymis.

Q-91 - 34596793

During embryonic development, the establishment of polarity along anterior/posterior, dorsal/ventral or medial/lateral axis is called

(A) anamorphosis

(B) pattern formation

(C) organiser phenomena

(D) axis formation

CORRECT ANSWER: D

SOLUTION:

(d) Embyonic axis are formed very early in development and sometimes bt the polarity of the egg.

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Q-92 - 14932480

In oocyte secodary maturation occurs in

(A) ovary

(B) abdominal cavity

(C) fallopian tube

(D) uterus.

CORRECT ANSWER: C

SOLUTION:

In the secondary oocyte, the meotic division is arrested at the metaphase stage. After ovulation, secondary oocyte passes into fallopian tube. Where meiosis II is completes only after the enrty of sperm.

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Q-93 - 34596775

In humans, at the end of the first meiotic division, the male germ cells differentiate into the

(A) secondary spermatocyte

(B) primary spermatocyte

(C) Spermatogonia

(D) spermatid

CORRECT ANSWER: D

SOLUTION:

(a) First meiotic division takes place in diploid primary spermatocyte and it forms two haploid cells called secondary spermatocytes.

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Q-94 - 14932534

After birth, colostrum is released from mammary glands which is rich in

(A) fat and low in proteins

(B) proteins and low in fat

(C) proteins, antibodies and low in fat

(D) proteins, fat and low in antibodies.

CORRECT ANSWER: C

SOLUTION:

After birth, the first milk released by mammary glands is called colostrum. It is released for 2-3 days. It is thin, yellowish fluid containing cells from the alveoli of glandular tissue of mammary glands and is rich in protein, antibodies, but low in fat.

In spermatogensis, the phase of maturation involves

(A) the growth of spermatogonia into primary spermatocyte

(B) the formation of spermatogonia from gonocytes through mitosis

(C) the formation of spermatids from primary spermatocytes meiosis

(D) the formation of oogonia from the spermatocytes through meiosis.

CORRECT ANSWER: C

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Q-96 - 14621677

Sertoli cells are found to

(A) ovaries and secrete progesterone

(B) adrenal cortex and secrete adrenaline

(C) seminiferous tubules and secrete nutrients for germ cells

(D) pancreas and secrete cholecystokinin

CORRECT ANSWER: C

Q-97 - 14621716

Select the correct statement.

(A) hPL plays a major role in parturition

(B) Fetus shows movements first time in the 7^{th} month of pregnancy

(C) Signal for parturition comes from fully development fetus and placenta

(D) Embryo's heart is formed by the 2^{th} month of pregnancy

---

CORRECT ANSWER: C

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Q-98 - 14621731

Arrange the following stages of fertilisation and early development into a proper sequence.

I. Sperm entry

II. Acrosomal reaction

III. Karyogamy

IV. Capacitation

V. Cortical reaction

(A) I,III,II,IV,V

(B) III,V,I,IV,II

(C) IV,II,V,I,III

(D) V,I,IV,II,III

CORRECT ANSWER: C

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Q-99 - 14932333

In most mammals, the testes are located in scrotal sac for

(A) more space to viseral organs

(B) spermatogensis

(C) sex differentiation

(D) independent functioning of kidney.

CORRECT ANSWER: B

SOLUTION:

In mammals, scrotal sacs (containing testes) act as thermoregulator, maintaining the temperature of the testes $2C$ lower than that of the body. This temperature is required for the spermatogenesis to occur, otherwise, the sperms could be destroyed by high temperature , resulting in sterility.

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Q-100 - 14932381

Which of the following is group of cells in the male gonad, represent haploid cells?

(A) Spermatogonial cells

(B) Germinal epithelial cells

(C) Secondary spermatocytes

(D) Primary spermatocytes

CORRECT ANSWER: C

SOLUTION:

In male gonad, germinal epithelial cells, spermatogonium and primary spermatocytes are diploid cells. Secondary spermatocytes, spermatids and spermatozoa represents haploid cells.

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Q-101 - 14932437

The pahse of menstrual cycle in himans that last for 7-8 days, is

(A) foliicular phase

(B) ovulatory phase

(C) luteal phase

(D) menstruation.

CORRECT ANSWER: A

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Q-102 - 14932544

Choose the incorrect statement from the following

(A) In birds and mammals internal fertilisation takes place.

(B) Colostrum contains antibodies and nutrients.

(C) Polyspermy in mammals is prevented by the chemical changes in the egg surface.

(D) In the human female, implantation occurs almost

seven days after fertilisation.

CORRECT ANSWER: C

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Q-103 - 14932457

During bleeding phase of menstrual cycle unfertilised secondary oocyte undergoes autolysis. The interplay of hormones then is

(A) progesterone and estrogen continue the hypertrophy of endometrial lining

(B) prolactin and progesterone reduced LH level causing regression of corpus luteum

(C) progesterone inhibits the release of LH from putuitary causing regression of corpus luteum

(D) prolactin and estrogen inhibits progesterone

secretion leading to sloughing off uterine lining.

CORRECT ANSWER: C

SOLUTION:

If fertilisation does not occur, the secondary oocyte undergoes autolysis and progesterone (Secreted by persistent corpus luteum) Inhibits the release of LH from pituitary. Reduction of LH level causes regression of corpus luteum by autolysis and thus fall in the progesterone level in the progesterone level in the blood. due to deficiency of progesterone, uterine lining sloughs off causing bleeding. This whole phase is called bleeding phase.

Select the incorrect statement.

(A) LH and FSH triggers ovulation in ovary

(B) LH and FSH decrease gradually during the follicular phase

(C) LH triggers secretion of androgens from the Leydig cells

(D) FSH stimulates the Sertoli cells which help in spermiogenesis

---

CORRECT ANSWER: B

SOLUTION:

(b) In follicular phase of menstrual cycle, LH and FSH increase gradually and stimulate follicular development as well as secretion of oestrogens by the growing follicles.

Q-105 - 14932419

In oogenesis, a diploid cell produce _____ ovum/ova.

(A) 1

(B) 2

(C) 3

(D) 4

CORRECT ANSWER: A

SOLUTION:

In oogenesis diploid cell (oogonium) produces one ovum and three polar bodies.

Q-106 - 14932445

Ovulation in the human female normally takes place during the menstrual cycle

(A) at the mid scretory phase

(B) just before the end of the secretory phase

(C) at the beginning of the proliferative phase

(D) at the end of the proliferative phase.

CORRECT ANSWER: D

SOLUTION:

Prliferative phase includes day 6-13 of cycle and ovulation occurs on day 14

Q-107 - 34596686

Several hormones like hCG.hPL, estrogen, progesterone are produced by:

(A) ovary

(B) placenta

(C) Fallopian tube

(D) pituitary

CORRECT ANSWER: B

SOLUTION:

(b) Several hormones like-hCG, hPL, oestrogen, progesterone are produced bt placenta. It is a structural and functional connectivity between the developing embryo (foetus) and the maternal body. It is connected

to embryo through an umblical cord which helps in transport of substances to and form the embryo. Placenta also acts as an endocrine tissue by producing the above mentioned hormones.

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Q-108 - 14932513

Identify the correctly matched pair/pairs of the germ layers and their derivatives.

A. Ectoderm-Epidermis

B. Endoderm-Dermis

C.Mesoderm-Muscles

D.Mesoderm-Notochord

E. Endoderm-Enamel of teeth

(A) A and D

(B) A and B

(C) A, C and D

(D) A, B, C and E

CORRECT ANSWER: C

SOLUTION:

Germ layer		Derivatives
Ectoderm	–	epidermis, pituitary gland, corneae
Mesoderm	–	Dermis,muscles,kidney,noto
Endoderm	–	Epithelium of mouth,gall blad

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Q-109 - 14932405

Which of the following contaions the actual genetic part of a sperm ?

(A) Whole of it

(B) Tail

(C) Middle piece

(D) Head

CORRECT ANSWER: D

SOLUTION:

Head of the sperm is anterior, broad, flattened and oval structure. It consists of two parts, posterior large nucleus and anterior small cap-like acrosome. The nucleus consists of condensed DNA and basic proteins.

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Q-110 - 34596695

In human females, meiosis II is completed until:

(A) puberty

(B) fertillisation

(C) uterine implantation

(D) birth

CORRECT ANSWER: B

SOLUTION:

(b) In human females, meiosis II is not completed until fertilisation. Secondary oocyte is arrested in metaphase II stage until sperm cell contracts plasma menbrane of the oocyte And completes meiosis II resulting in release of ovum.

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Q-111 - 14932473

Fertilisatio is defined as the process by which

(A) a diploid spermatozoon unites with a haploid ovum to form a triploid zygote

(B) a hploid spermatozoon unites with a haploid ovum to form a diploid zygote

(C) a diploid spermatozoon unites with a diploid ovum to form a diploid zygote

(D) a diploid spermatozoon unites with a haploid ovum

CORRECT ANSWER: B

Q-112 - 34596709

What is the correct sequence of sperm formation?

(A) Spermatid, Spermatocyte, Spermatogonia, Spermatozoa

(B) Spermatogonia, Spermatocyte, Spermatozoa, Spermatid

(C) Spermatogonia, Spermatozoa, Spermatocyte, Spermatid

(D) Spermatogonia, Spermatocyte, Spermatid, Spermatozoa

CORRECT ANSWER: D

SOLUTION:

Spermatogonai $\rightarrow$ Spermatocyte $\rightarrow$ Spermatid $\rightarrow$ Spermatozoa

Spermatogonia is present on the inside wall of semminiferous tubule which undergo mitotic division and increase their number. Spermatocytes are some of the spermatogonia, which periodically undergo meiosis. The secondary spermatocytes undergo the second meiotic

division to produce four, equal haploid spermatids. The spermatids are transformed into spermatozoa (sperm).

Q-113 - 14932439

During proliferative pahse, uterine wall undergoes centrain changes, these are

(A) myometrium wall is sloughed off

(B) endiometrium wall is sloughed off

(C) blood vessels in endometrium become long and coiled

(D) proliferation of myometrial epithelial lining.

CORRECT ANSWER: C

SOLUTION:

During proliferative phase, the endometrium of uterus becomes thicker as blood vessels, become long and ciled.

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Q-114 - 14932374

$2n = 16$ is in a primary spermatocyte which is in metaphase of first meiotic division. What shal be the total number of chromatids in each of the secondary spermatocyte?

(A) 16

(B) 24

(C) 32

(D) 8

CORRECT ANSWER: A

SOLUTION:

Secondary spermatocyte contains half the number of chromosomes i.e., 8. Each chromosome has 2 chromatids, therefore, 8 chromosomes will have 16 chromatids in all.