

Human Reproduction

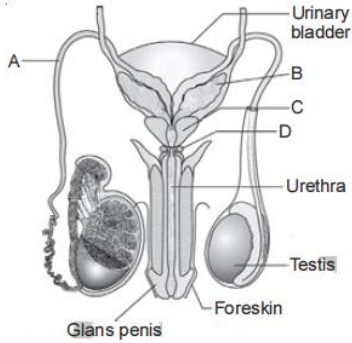
Male Reproductive System

- Temperature in scrotum necessary for sperm formation should be
 - 2°C above body temperature
 - 2°C below body temperature
 - 8°C above body temperature
 - 8°C below body temperature
- Cryptorchidism is
 - Non-development of testes
 - Nondescent of testes into scrotum
 - Removal of scrotum
 - Breaking connection of vas deferens
- Tubuli recti of seminiferous tubules open into
 - Epididymis
 - vasa efferentia
 - Vasa deferentia
 - Rete testis
- Common duct formed by the union of vas deferens and duct of seminal vesicle is
 - Urethra
 - Tunica vasculosa
 - Ejaculatory
 - Spermatic duct
- Accessory glands of male reproductive system are
 - Prostate and seminal vesicles
 - Prostate, Bartholin's and seminal vesicles
 - Seminal vesicles and Bartholin's
 - Prostate, cowper's and seminal vesicles
- Scrotal sacs of man are connected with the abdominal cavity by
 - Inguinal canal
 - Haversian canal
 - Spermatic canal
 - Rete testis
- Sperms are stored and nourished inside
 - Cowper's gland
 - Epididymis
 - Seminiferous tubules
 - Vasa efferentia
- Role of Leydig cells of testis is
 - Provide nourishment to sperms
 - Provide motility to sperms
 - Bring about maturation of sperms
 - Synthesis of testosterone hormone
- Vas deferens arises from
 - Cauda epididymis
 - Caput epididymis
 - Corpus epididymis
 - Rete testis
- Epididymis is
 - Network of sinuses between seminiferous tubules and vas efferentia
 - Intermediate structure rete testis and vasa efferentia
 - A long coiled tube between vasa efferentia and vas deferens
 - Connection between vas deferens and seminal vesicle
- Each seminiferous tubule is lined on its inside by two types of cells A and B. Which of the following options is correct, w.r.t. the type of cell and its function?

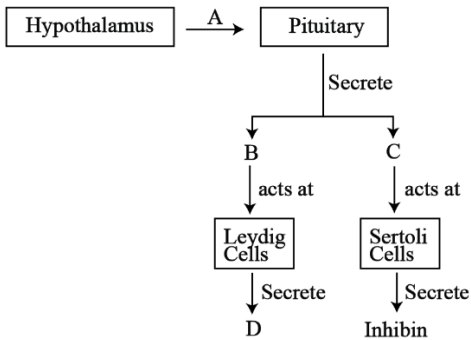
A	B
a) Male germ cells : Undergo meiotic division	Sertoli cells : Provide nutrition to germ cells
b) Spermatogonia : Undergo Mitosis	Sertoli cells : Secrete testicular hormones
c) Male germ cells : Leading to sperm formation	Leydig cells : Secrete androgens

d) Sertoli cells : Provide nutrition to germ cells	Leydig cells : Secrete inhibin
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12. Which of the following is a set of male accessory ducts?
- Rete testis, vasa efferentia, tubuli recti
 - Rete testis, vasa efferentia, epididymis and vas deferens
 - Epididymis, ejaculatory duct, urethra
 - Seminiferous tubules, vasa efferentia, epididymis and vas deferens
13. Trace the correct path of movement of the sperms upto urethra.
- Seminiferous tubules → Vasa efferentia → Rete testis → Epididymis → Vas deferens → Ejaculatory duct → Urethra
 - Seminiferous tubules → Rete testis → Epididymis → Vasa efferentia → Vas deferens → Ejaculatory duct → Urethra
 - Seminiferous tubules → Rete testis → Vasa efferentia → Epididymis → Vas deferens → Ejaculatory duct → Urethra
 - Seminiferous tubules → Rete testis → Vasa efferentia → Epididymis → Ejaculatory duct → Vas deferens → Urethra
14. Given below is a diagrammatic sketch of a portion of human male reproductive system. Which of the following part contributes to the maximum portion of semen?



- D
 - C
 - B
 - A
15. Study the flow chart. Name the hormones labelled as A, B, C, D at each stage.

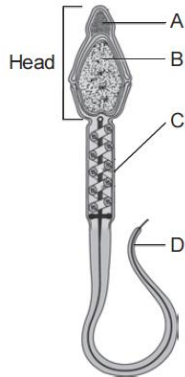


Choose the correct option.

- | | | | |
|----------|------|----------|-----|
| A | B | C | D |
| a) Gn-RH | ICSH | Androgen | FSH |

- | | | | |
|------------------|-----|-----|--------------|
| b) Gn-RH | LH | FSH | Androgens |
| c) Gonadotropins | LH | FSH | Testosterone |
| d) Gn-RH | FSH | LH | Androgens |

16. Which of the following labelled parts produces energy for the movement of the tail that facilitate sperm motility essential for fertilisation?



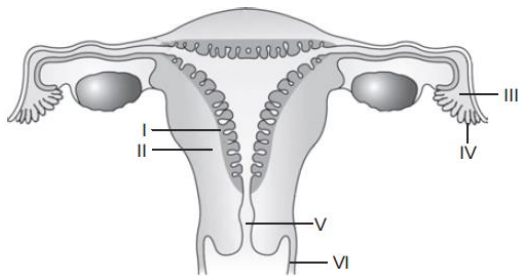
- | | |
|------|------|
| a) A | b) B |
| c) C | d) D |
17. Androgen binding protein which helps in concentrating testosterone in the seminiferous tubule, and which inhibits ICSH secreted by anterior pituitary and GnRH production by hypothalamus is secreted by
- Cells of Leydig
 - Sustentacular cells
 - Interstitial cells
 - Spermatogonial cells
18. Primary sex organs differ from the secondary sex organs in all the following, except
- They produce gametes
 - They secrete sex hormones
 - They are concerned with the conduction of gametes
 - Testes in male and ovaries in female are the examples of primary sex organs
19. Why the testes in human beings and mammals are situated outside the abdominal cavity within a pouch called scrotum?
- There is not enough space in the pelvic area for the testicles to be housed internally
 - The scrotum helps in maintaining the low temperature of testes, 2.5°C lower than normal body temperature required for spermatogenesis
 - The scrotum helps in maintaining the high temperature of testis, 2.5°C higher than the normal body temperature required for spermatogenesis
 - Providing more space for the growth of epididymis
20. Read the following paragraph with two blanks : Each testis has about A compartments called as testicular lobules. Each lobule contains B highly coiled seminiferous tubules in which the sperms are produced. The correct option for the two blanks is
- | | | |
|----|-----|-----|
| | A | B |
| a) | 50 | 1-3 |
| b) | 100 | 1 |

- c) 250 1-3
d) 500 3
21. Which of the following cells secrete testicular hormones called androgens and form endocrine part of the testis?
 - a) Leydig cells
 - b) Interstitial cells
 - c) Sertoli cells
 - d) Both (a) & (b)
 22. Vas deferens receives a duct from seminal vesicle and opens into urethra as _____.
 - a) Urethral meatus
 - b) Ejaculatory duct
 - c) Ureter
 - d) Epididymis
 23. Fructose is present in the secretion of
 - a) Corpus spongiosum
 - b) Seminal vesicles
 - c) Urethra
 - d) Tyson's gland
 24. Male accessory glands include
 - a) Paired seminal vesicles
 - b) A prostate gland
 - c) Paired bulbourethral gland
 - d) All of these
 25. Sertoli cells are found in
 - a) Ovaries and secrete progesterone
 - b) Testes and secrete testosterone
 - c) Seminiferous tubules and after spermiogenesis, sperm heads become embedded in them
 - d) Adrenal cortex and secrete adrenaline
 26. The largest part of the fallopian tube is
 - a) Infundibulum
 - b) Isthmus
 - c) Ampulla
 - d) Cervix
 27. Which of the following is last part of the oviduct, which has narrow lumen and joins with the uterus?
 - a) Ampulla
 - b) Isthmus
 - c) Infundibulum
 - d) Fimbriae
 28. The Graafian follicle ruptures to release _____ from the ovary by the process called ovulation.
 - a) Primary oocyte
 - b) Secondary oocyte after completing meiosis-II
 - c) Secondary oocyte after completing meiosis-I and with the release of 1st polar body
 - d) Mature ovum
 29. In humans, at the end of the first meiotic division, the male germ cells form
 - a) Spermatogonia
 - b) Primary spermatocytes
 - c) Secondary spermatocytes
 - d) Spermatids
 30. Which one of the following statements is incorrect about menstrual cycle?
 - a) The first menstruation begins at puberty and is called menarche
 - b) Lack of menstruation may also occur due to some environmental factors like stress, poor health
 - c) Corpus luteum secretes large amounts of progesterone which is essential for maintenance of endometrium

- d) In absence of fertilisation, corpus luteum degenerates in luteal phase and new follicles start developing immediately
31. In the fertile human female, approximately on which day of the menstrual cycle (32 days) does ovulation take place?
 a) Day 18 b) Day 14 c) Day 1 d) Day 8
32. After ovulation Graafian follicle transforms into
 a) Corpus luteum b) Corpus albicans
 c) Corpus callosum d) Follicular atresia
33. Fertilisation in human beings occurs in
 a) Isthmus b) Ampullary-isthmic junction
 c) Uterus d) Infundibulum
34. Why it is scientifically correct to say that sex of the baby is determined by the father and not by the mother?
 a) Human female produces two types of gametes
 b) Human male produces one type of gametes
 c) Human female is XX, whereas male is XY, 50 percent of sperms carry the X chromosome while other 50 percent carry Y chromosome
 d) All of these

Female Reproductive system

35. Which of the following depicts the site of implantation of blastocyst under normal condition?



- a) II b) V c) I d) VI
36. Which one of the following is incorrect match?
 a) Myometrium : Exhibits strong contractions during delivery of the baby
 b) Endometrium : Undergoes cyclical changes during menstrual cycle
 c) Perimetrium : Serosa of uterus
 d) Uterus : Birth canal
37. Which of the following is the correct match about the female external genitalia and their functions?
 a) Mons pubis : Cushion of fatty tissue covered by skin and pubic hair and surround the vaginal orifice
 b) Labia majora : Fleishy folds of tissue which extend down from the mons pubis and surround the vaginal opening
 c) Labia minora : Paired folds of tissue under the labia majora homologous to scrotum in males

d) Clitoris : A tiny finger like structure which lies at the upper junction of the two labia minora above the urethral opening. It is analogous to penis in males

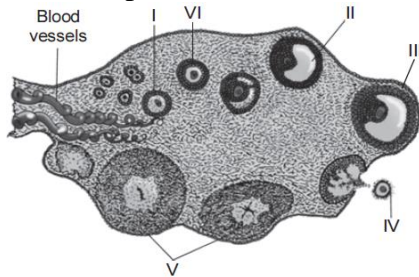
38. The mammary glands are paired structures that contain the glandular tissue and variable amount of fat. The correct sequence of tissues involved in synthesis and flow of milk are

- a) Mammary lobes →Mammary alveoli →Mammary ampulla →Mammary duct
→Lactiferous duct
- b) Mammary lobes →Mammary alveoli →Mammary duct →Mammary ampulla
→Lactiferous duct
- c) Mammary lobes →Mammary alveoli →Lactiferous duct →Mammary ampulla
→Mammary duct
- d) Mammary alveoli →Mammary lobes →Lactiferous duct →Mammary duct

39. What induces the completion of the meiotic division of the secondary oocyte?

- a) Contact of the sperm with the zona pellucida layer of the ovum
- b) The entry of the sperm into the cytoplasm of the ovum through the zona pellucida and the plasma membrane
- c) Entry of the sperm in the ampullary-isthmic junction
- d) Copulation

40. The figure given below depicts a diagrammatic sectional view of ovary. Which one set of three parts out of I–VI are correctly identified?



- a) VI - Primary follicle; III - Graafian follicle, V - Corpus luteum
- b) II - Secondary follicle; III - Tertiary; IV - Ovulation
- c) I - Primary follicle; II - Tertiary follicle; V - Corpus luteum
- d) I - Primary follicle; II - Corpus luteum; V - Graafian follicle

41. Which one of the following is the incorrect match of the events occurring during menstrual cycle?

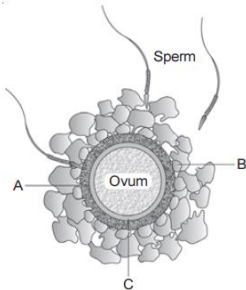
- a) Menstruation : Breakdown of endometrium and ovum not fertilised
- b) Ovulation : LH and FSH attain peak level
- c) Proliferative phase : Rapid regeneration of endometrium and maturation of Graafian follicle
- d) Development of corpus luteum : Follicular phase and increased secretion of progesterone

42. Identify the hormones that are secreted in large amount prior to ovulation :

- A. LH B. FSH
C. Estrogen D. Progesterone
- a) A only
- b) A & B only
- c) A, B & C only
- d) A, B, C & D

43. Inhibition of uterine contraction ceases and the bleeding and cramps of menstruation begin due to

- a) Increase in level of progesterone b) Decrease in level of progesterone
 c) Increase in level of LH d) Decrease in level of FSH
44. Why do all copulations not lead to fertilisation and pregnancy? The root cause is _____.
- a) Due to numerous sperms and one ovum
 b) Due to less progesterone
 c) Ovum and sperms are not transported simultaneously to the ampullary-isthmic junction
 d) Due to non-formation of corpus luteum
45. Following the diagram of an ovum surrounded by few sperms :



Which of the following option is correct for the labelled parts A, B and C?

- | A | B | C |
|------------------------|---------------------|---------------------|
| a) Follicular cells | Corona radiata | Perivitelline space |
| b) Zona pellucida | Perivitelline space | Corona radiata |
| c) Zona pellucida | Corona radiata | Perivitelline space |
| d) Perivitelline space | Zona pellucida | Corona radiata |
46. Which of the following enzyme helps sperm to penetrate zona pellucida?
- a) Hyaluronidase b) Neuraminidase
 c) Acrosin d) Corona penetrating enzyme
47. Which of the following is not the function of Sertoli cells (sustentacular cells)?
- a) Release of androgen binding protein b) Release of antimullerian factor
 c) Regulate spermatogenesis by releasing inhibin d) Secretion of testosterone
48. If both ovaries are removed from pregnant human female in first trimester of pregnancy then it will lead to
- a) Abortion
 b) Normal development
 c) Irregular ovulation no fixed time interval
 d) Menarche

Pregnancy and Embryonic Development, Parturition and Lactation

49. Decidua which takes part in the formation of maternal portion of the placenta is
- a) Decidua basalis b) Decidua capsularis
 c) Decidua parietalis d) Chorion
50. The minimum number of barriers present between foetal and maternal blood is present in which type of placenta?
- a) Syndesmochorial b) Haemochorial
 c) Haemoendothelial d) Endotheliochorial
51. Blood flowing in umbilical cord of mammalian embryo is
- a) 100% maternal b) 50% maternal and 50% foetal

- c) 100% foetal d) 75% foetal and 25% maternal
52. Epiboly is the process of
- Rotation of gastrula within vitelline membrane so that animal pole becomes anterior
 - Overgrowth of micromeres which divide rapidly and spread downward over megameres except at yolk plug
 - Mass migration of cells from animal hemisphere so that upper micromeres migrate over edge of dorsal lip, roll inside and tucked beneath outer layer
 - Formation of small slit like invagination upon grey crescent
53. Drugs such as Thalidomide taken by woman in first trimester of pregnancy cause all the following malformations in the developing embryo, except
- Phocomelia
 - Amelia
 - Heart disorder
 - Placentitis
54. Home use kits for determining a women's fertile period depend on the detection of one hormone in the urine. This hormone is
- Progesterone
 - Estradiol
 - hCG
 - LH
55. Neural crest cells break off from the _____ and later move to the sides of the developing embryo to form
- Placodes, sense organs of head
 - Ectoderm, sense organs of head
 - Notochord, vertebral column
 - Neural tube, autonomic ganglia
56. Type of placenta in the human is
- Chorionic, discoidal, epitheliochorial, deciduate
 - Deciduate, hemochorial, diffuse, allantochorionic
 - Hemochorial, metadiscoidal, deciduate, chorionic
 - Non-deciduate, discoidal, chorionic, hemoendothelial
57. Which type of placenta is present in the early human embryo?
- Discoidal
 - Diffuse
 - Zonary
 - Cotyledonary
58. Which of the following can be termed as milk ejecting hormone?
- Prolactin
 - Oestrogen
 - Progesterone
 - Oxytocin
59. Which of the following is not a correct statement about umbilical cord?
- It connects the placenta to the embryo
 - It helps in the transport of substances to and from the embryo
 - It produces several hormones like hPL, estrogen and progesterone
 - It has 100% foetal blood
60. Sometimes the labor pains are less and uterine contractions have to be induced. What do you think the doctors inject to facilitate delivery?
- Progesterone and estrogen hormones
 - Oxytocin/Pitocin
 - FSH and LH
 - Relaxin
61. In human female, the blastocyst
- Forms placenta even before implantation
 - Gets implanted in the uterus 3 days after ovulation
 - Gets implanted in the endometrium by trophoblast cells
 - The trophoblast cells get differentiated as the embryo

62. Trophoblast, is not involved in the formation of
- Protective and trophic membranes
 - Foetal portion of placenta
 - Body of developing embryo
 - Chorionic villi
63. Placenta acts as an endocrine tissue and produces several hormones like
- Human chorionic gonadotropin (hCG)
 - Human placental lactogen (hPL)
 - Estrogens
 - Progesterone
- A & B
 - B only
 - A, B & C
 - A, B, C & D
64. Which of the following groups of hormones are produced in women only during pregnancy?
- hCG, hPL, relaxin
 - Estrogen, progesterone, hCG
 - Cortisol, prolactin, thyroxine
 - Prolactin, progesterone, hCG
65. Immediately after implantation, ectoderm, endoderm and the mesoderm of embryo is formed from
- Trophoblast
 - Cytotrophoblast
 - Embryoblast
 - Syncytiotrophoblast
66. The stem cells which have potency to give rise to all tissues and organs are formed from
- Trophoblast
 - Umbilical cord
 - Inner cell mass
 - Placenta
67. Foetal ejection reflex in human female is induced by
- Differentiation of mammary gland
 - Pressure exerted by amniotic fluid
 - Fully developed foetus and placenta
 - Release of oxytocin from pituitary
68. Signals from fully developed foetus and placenta ultimately lead to parturition which requires the release of
- Estrogen from placenta
 - Oxytocin from maternal pituitary
 - Oxytocin from foetal pituitary
 - Relaxin from leydig's cells