A-LEVEL

Multiple-choice questions on human reproduction.

1. Which hormone is responsible for the development and maturation of ovarian follicles in females?
A. Estrogen
B. Progesterone
C. Follicle-Stimulating Hormone (FSH)
D. Luteinizing Hormone (LH)
Answer: C. Follicle-Stimulating Hormone (FSH)
FSH stimulates the development and maturation of ovarian follicles in females.

2. What is the primary function of the corpus luteum in the menstrual cycle?
A. Egg fertilization
B. Estrogen production
C. Progesterone production
D. Ovulation

Answer: C. Progesterone production
The corpus luteum is responsible for producing progesterone, which prepares the uterus for pregnancy.

3. Where does fertilization typically occur in the human reproductive system?
A. Ovary
B. Uterus
C. Fallopian tube
D. Cervix
Answer: C. Fallopian tube
Fertilization usually occurs in the fallopian tubes where sperm can meet the egg.

4. What is the role of the acrosome in a sperm cell?
A. Energy production
B. Fertilization
C. Hormone secretion
D. Enzyme release

Answer: D. Enzyme release
The acrosome contains enzymes that help the sperm penetrate the egg during fertilization.

5. Which structure connects the fetus to the placenta and facilitates nutrient and waste exchange?
A. Amniotic sac
B. Umbilical cord

C. Chorion
D. Placental membrane
Answer: B. Umbilical cord
The umbilical cord connects the fetus to the placenta, providing a pathway for nutrient and waste exchange.

6. What is the function of human chorionic gonadotropin (hCG) during early pregnancy?
A. Stimulating ovulation
B. Maintaining the corpus luteum
C. Fetal development
D. Regulating menstruation
Answer: B. Maintaining the corpus luteum
hCG maintains the corpus luteum, ensuring continued production of progesterone to support early pregnancy.

7. In males, where does spermatogenesis occur?
A. Epididymis
B. Seminiferous tubules
C. Vas deferens
D. Prostate gland
Answer: B. Seminiferous tubules
Spermatogenesis, the process of sperm cell development, takes place in the seminiferous tubules of the testes.

8. What is the function of the Sertoli cells in the testes?
A. Sperm production

B. Testosterone secretion
C. Nutrient transport to sperm
D. Support and nourishment of developing sperm cells
Answer: D. Support and nourishment of developing sperm cells
Sertoli cells provide physical support and nourishment to developing sperm cells within the seminiferous tubules.

9. Which hormone stimulates the development of male secondary sexual characteristics during puberty?
A. Follicle-Stimulating Hormone (FSH)
B. Luteinizing Hormone (LH)
C. Testosterone
D. Estrogen
Answer: C. Testosterone
Testosterone is responsible for the development of male secondary sexual characteristics.

10. What triggers the release of oxytocin during labor?
A. Fetal head engagement
B. Stretching of the cervix and uterus
C. Maternal emotional state
D. Placental detachment
Answer: B. Stretching of the cervix and uterus
Oxytocin is released in response to the stretching of the cervix and uterus, promoting uterine contractions during labor.

11. Which structure produces the majority of estrogen during the menstrual cycle?
A. Ovary
B. Uterus
C. Pituitary gland
D. Corpus luteum
Answer: A. Ovary
The ovaries are the primary source of estrogen production during the menstrual cycle.

12. What is the role of the zona pellucida in the human egg?
A. Hormone secretion
B. Protection
C. Fertilization
D. Nutrient absorption
Answer: C. Fertilization
The zona pellucida is a protective layer around the egg that plays a crucial role in facilitating fertilization.

13. What hormone is responsible for the development of the mammary glands during pregnancy?
A. Estrogen
B. Progesterone
C. Prolactin
D. Oxytocin
Answer: C. Prolactin

Prolactin stimulates the development of mammary glands, preparing them for milk production during pregnancy.

14. What is the function of the seminal vesicles in male reproduction?
A. Sperm production
B. Hormone secretion
C. Nutrient transport to sperm
D. Seminal fluid production
Answer: D. Seminal fluid production
The seminal vesicles produce seminal fluid, contributing to the composition of semen.

15. What is the purpose of the menstrual cycle in females?
A. Ovulation
B. Fertilization
C. Hormone regulation
D. Preparation for pregnancy or menstruation
Answer: D. Preparation for pregnancy or menstruation
The menstrual cycle prepares the uterus for a potential pregnancy, and if pregnancy doesn't occur, it leads to menstruation.

16. During fertilization, what is the result of the fusion of the sperm and egg nuclei?
A. Formation of a zygote

B. Development of the placenta
C. Initiation of implantation
D. Differentiation of germ layers
Answer: A. Formation of a zygote
The fusion of sperm and egg nuclei results in the formation of a zygote, the initial stage of a developing embryo.

17. Which structure provides nutrients and oxygen to the developing fetus and removes waste products?
A. Amniotic sac
B. Placenta
C. Umbilical cord
D. Chorion
Answer: B. Placenta
The placenta facilitates nutrient and gas exchange between the mother and the developing fetus.

18. What is the primary function of the epididymis in males?
A. Sperm production
B. Sperm maturation and storage
C. Hormone secretion
D. Seminal fluid production
Answer: B. Sperm maturation and storage
The epididymis is responsible for the maturation and storage of sperm.

19. Which hormone stimulates milk ejection during breastfeeding?
A. Estrogen
B. Progesterone
C. Prolactin
D. Oxytocin
Answer: D. Oxytocin
Oxytocin is responsible for stimulating the contraction of smooth muscles in the mammary glands, facilitating milk ejection.

20. What is the function of the seminiferous tubules in the testes?
A. Sperm production
B. Testosterone secretion
C. Seminal fluid production
D. Nutrient transport to sperm
Answer: A. Sperm production
The seminiferous tubules are the site of sperm production in the testes.

21. Which hormone is responsible for the initiation of ovulation?
A. Estrogen
B. Progesterone
C. Follicle-Stimulating Hormone (FSH)
D. Luteinizing Hormone (LH)
Answer: D. Luteinizing Hormone (LH)

LH surge triggers ovulation by causing the release of a mature egg from the ovary.

22. What is the function of the HCG hormone during early pregnancy?
A. Initiating labor
B. Supporting the corpus luteum
C. Stimulating mammary gland development
D. Facilitating implantation
Answer: B. Supporting the corpus luteum
hCG maintains the corpus luteum, ensuring the production of hormones to support early pregnancy.

23. Where does fertilization usually occur in the female reproductive system?
A. Uterus
B. Cervix
C. Ovary
D. Fallopian tube
Answer: D. Fallopian tube
Fertilization typically occurs in the fallopian tubes where sperm can meet the egg.

24. What is the purpose of the amniotic fluid during pregnancy?
A. Protecting the fetus
B. Providing nutrients to the fetus
C. Facilitating fetal movement
D. Supporting placental development

Answer: A. Protecting the fetus
Amniotic fluid acts as a cushion, protecting the fetus from physical trauma.

25. What hormone is responsible for the development of the male reproductive organs during fetal development?
A. Testosterone
B. Estrogen
C. Progesterone
D. Prolactin
Answer: A. Testosterone
Testosterone is crucial for the development of male reproductive organs during fetal development.

26. Which of the following is a function of the cervix in the female reproductive system?
A. Egg production
B. Hormone secretion
C. Sperm storage
D. Passage between the uterus and vagina
Answer: D. Passage between the uterus and vagina
The cervix serves as a passage between the uterus and the vagina.

27. What triggers the release of luteinizing hormone (LH) during the menstrual cycle?
A. High estrogen levels
B. Low progesterone levels
C. Fertilization

D. Surge in gonadotropin-releasing hormone (GnRH)
Answer: D. Surge in gonadotropin-releasing hormone (GnRH)
A surge in GnRH stimulates the release of LH, which triggers ovulation.

28. What is the function of the prostate gland in male reproductive system?
A. Sperm production
B. Hormone secretion
C. Seminal fluid production
D. Nutrient transport to sperm
Answer: C. Seminal fluid production
The prostate gland contributes to the production of seminal fluid, a component of semen.

29. Which hormone is responsible for the development and maintenance of female secondary sexual characteristics?
A. Follicle-Stimulating Hormone (FSH)
B. Luteinizing Hormone (LH)
C. Estrogen
D. Progesterone
Answer: C. Estrogen
Estrogen plays a key role in the development and maintenance of female secondary sexual characteristics.

30. What is the function of the vas deferens in male reproductive system?
A. Sperm production
B. Seminal fluid production
C. Hormone secretion
D. Sperm transport
Answer: D. Sperm transport
The vas deferens transports mature sperm from the epididymis to the urethra during ejaculation.

31. During which phase of the menstrual cycle does the endometrium thicken in preparation for a potential pregnancy?
A. Menstrual phase
B. Proliferative phase
C. Secretory phase
D. Ovulatory phase
Answer: B. Proliferative phase
The proliferative phase involves the thickening of the endometrium in preparation for potential implantation of a fertilized egg.

32. What is the function of the fimbriae in the female reproductive system?
A. Hormone secretion
B. Egg production
C. Sperm transport
D. Capturing the released egg during ovulation

Answer: D. Capturing the released egg during ovulation
The fimbriae help capture the released egg during ovulation and direct it into the fallopian tube.

33. What is the primary role of the fallopian tubes in the female reproductive system?
A. Menstrual blood transport
B. Egg production
C. Fertilization
D. Menstrual hormone regulation
Answer: C. Fertilization
The fallopian tubes are the site where fertilization typically occurs.

34. What hormone is responsible for the initiation of the menstrual cycle?
A. Follicle-Stimulating Hormone (FSH)
B. Luteinizing Hormone (LH)
C. Estrogen
D. Gonadotropin-releasing hormone (GnRH)
Answer: D. Gonadotropin-releasing hormone (GnRH)
GnRH initiates the release of FSH and LH, starting the menstrual cycle.

35. What is the function of the endometrium in the uterus?
A. Sperm production
B. Egg implantation

C. Hormone secretion
D. Seminal fluid production
Answer: B. Egg implantation
The endometrium provides a receptive environment for the implantation of a fertilized egg.

36. What structure is formed from the remnants of the ruptured ovarian follicle after ovulation?
A. Corpus luteum
B. Corpus albicans
C. Corpus callosum
D. Corpus cavernosum
Answer: A. Corpus luteum