

بسم الله الرحمن الرحيم



**Test Bank - Source**

**‘MID FINAL’**

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3. After menopause, hormone replacement therapy with estrogen-like

compounds is effective in preventing the progression of osteoporosis. What is the mechanism of their protective effect?

- A) They stimulate the activity of osteoblasts
- B) They increase absorption of calcium from the gastrointestinal tract
- C) They stimulate calcium reabsorption by the renal tubules
- D) They stimulate parathyroid hormone (PTH) secretion by the parathyroid gland

ans:a

10. Thecal cells in the follicle are not able to produce what sex steroid?

- A) Estradiol
- B) Testosterone
- C) Progesterone
- D) Dihydrotestosterone

Ans:a

11. A baby is born with a penis, a scrotum with no testes, no vagina, and XX chromosomes. This condition is referred to as hermaphroditism. What could cause this abnormality?

- A) Abnormally high levels of human chorionic gonadotropin (hCG) production by the trophoblast cells
- B) The presence of a testosterone-secreting tumor in the mother's right adrenal gland
- C) Abnormally high levels of LH in the maternal blood
- D) Abnormally low levels of testosterone in the maternal blood
- E) Abnormally low rates of estrogen production by the placenta

Ans:b

14. Which of the following could inhibit the initiation of labor?

- A) Administration of an antagonist of the actions of progesterone
- B) Administration of LH
- C) Administration of an antagonist of PGE2 effects
- D) Mechanically dilating and stimulating the cervix
- E) Administration of oxytocin

Ans:c

20. Spermatogenesis is regulated by a negative feedback control system in which FSH stimulates the steps in sperm cell formation. Which negative feedback signal associated with sperm cell production inhibits pituitary formation of FSH?

- A) Testosterone
- B) Inhibin
- C) Estrogen
- D) LH

Ans:b

22. When do progesterone levels rise to their highest point during the female hormonal cycle?

- A) Between ovulation and the beginning of menstruation
- B) Immediately before ovulation
- C) When the blood concentration of LH is at its highest point
- D) When 12 primary follicles are developing to the antral stage

Ans:a

32. Which enzyme in the cytochrome P450 steroid synthesis cascade is

directly responsible for estradiol synthesis?

- A) 17-Beta-hydroxysteroid dehydrogenase
- B) 5-Alpha reductase
- C) Aromatase
- D) Side chain cleavage enzyme

Ans:c

37. For male differentiation to occur during embryonic development, testosterone must be secreted from the testes. What stimulates the secretion of testosterone during embryonic development?

- A) LH from the maternal pituitary gland
- B) hCG
- C) Inhibin from the corpus luteum
- D) GnRH from the embryo's hypothalamus

Ans:b

40. As menstruation ends, estrogen levels in the blood rise rapidly. What is the source of the estrogen?

- A) Corpus luteum
- B) Developing follicles
- C) Endometrium
- D) Stromal cells of the ovaries
- E) Anterior pituitary gland

ans:b

43. A female athlete who took testosterone-like steroids for several months stopped having normal menstrual cycles. What is the best explanation for this observation?

- A) Testosterone stimulates inhibin production from the corpus luteum
- B) Testosterone binds to receptors in the endometrium, resulting in the failure of the endometrium to develop during the normal cycle
- C) Testosterone binds to receptors in the anterior pituitary that stimulate the secretion of FSH and LH
- D) Testosterone inhibits the hypothalamic secretion of GnRH and the pituitary secretion of LH and FSH

ans:d

49. Negative feedback on FSH release from the anterior pituitary in men that results in a reduction in estradiol production is due to which hormone?

- A) Progesterone
- B) Estradiol
- C) Testosterone
- D) Inhibin

ans:d

50. During the first few years after menopause, FSH levels are normally extremely high. A 56-year-old woman completed menopause 3 years ago. However, she is found to have low levels of FSH in her blood. What is the best explanation for this finding?

- A) She has been receiving hormone replacement therapy with estrogen and progesterone since she completed menopause
- B) Her adrenal glands continue to produce estrogen
- C) Her ovaries continue to secrete estrogen

D) She took birth control pills for 20 years before menopause  
ans:a

51. Blockade of what receptors will prolong erection in a man?

- A) Estrogen receptors
- B) Cholesterol receptors
- C) Muscarinic receptors
- D) Phosphodiesterase-5 receptors

Ans:d

56. What is the mechanism by which the zona pellucida becomes “hardened” after penetration of a sperm cell to prevent a second sperm from penetrating?

- A) A reduction in estradiol
- B) The proteins released from the acrosome of the sperm
- C) An increase in intracellular calcium in the oocyte
- D) An increase in testosterone that affects the sperm

Ans:c

57. Why is milk produced by a woman only after delivery, not before?

- A) Levels of LH and FSH are too low during pregnancy to support milk production
- B) High levels of progesterone and estrogen during pregnancy suppress milk production
- C) The alveolar cells of the breast do not reach maturity until after delivery
- D) High levels of oxytocin are required for milk production to begin, and oxytocin is not secreted until the baby stimulates

the nipple

ans:b

63. Very early in embryonic development, testosterone is formed within male embryos. What is the function of this hormone at this stage of development?

- A) Stimulation of bone growth
- B) Stimulation of development of male sex organs
- C) Stimulation of development of skeletal muscle
- D) Inhibition of LH secretion

Ans:b

64. During spermatogenesis, estrogen is produced by

- A) Leydig cells in response to FSH
- B) Sertoli cells in response to FSH
- C) Leydig cells in response to LH
- D) Sertoli cells in response to LH

Ans:b

66. The prostate fluid contributes the bulk of the volume of semen, which includes

- A) Calcium, citrate, phosphate, and profibrinolysin
- B) Fructose, citric acid, prostaglandins, and fibrinogen
- C) Sex hormones
- D) Mucus

Ans:a

67. A 30-year-old woman is breastfeeding her infant. During suckling,

which hormonal response is expected in the woman?

- A) Increased secretion of ADH from the supraoptic nuclei
- B) Increased secretion of ADH from the paraventricular nuclei
- C) Increased secretion of oxytocin from the paraventricular nuclei
- D) Decreased secretion of neurophysin
- E) Increased plasma levels of both oxytocin and ADH

Ans:c

69. Which of the following is important in the process of capacitation of sperm after ejaculation?

- A) Microtubule reorganization
- B) Increased testosterone secretion by spermatozoa
- C) Washout of inhibitory factors
- D) Influx of glucose

Ans:c

73. The process of spermatogenesis begins with spermatogonia and results in which of the following?

- A) 1 diploid spermatid
- B) 4 diploid spermatids
- C) 1 haploid spermatid
- D) 2 haploid spermatids
- E) 4 haploid spermatids

Ans:e

76. During pregnancy, the uterine smooth muscle is quiescent. During the ninth month of gestation, the uterine muscle becomes



progressively more excitable. What factor contributes to the increase in excitability?

- A) Placental estrogen synthesis rises to high rates
- B) Progesterone synthesis by the placenta decreases
- C) Uterine blood flow reaches its highest rate
- D) PGE<sub>2</sub> synthesis by the placenta decreases
- E) Activity of the fetus falls to low levels

ans:b

77. A 20-year-old woman is not having menstrual cycles. Her plasma progesterone concentration is found to be minimal. What is the explanation for the low level of progesterone?

- A) LH secretion rate is elevated
- B) LH secretion rate is suppressed
- C) FSH secretion rate is suppressed
- D) No corpus luteum is present
- E) High inhibin concentration in the plasma has suppressed

Ans:d

78. Before the preovulatory surge in LH, granulosa cells of the follicle secrete which hormone?

- A) Testosterone
- B) Progesterone
- C) Estrogen
- D) Inhibin

Ans:c

82. Which of the following is produced by the trophoblast cells during

the first 3 weeks of pregnancy?

- A) Estrogen
- B) LH
- C) Oxytocin
- D) hCG
- E) None of the above

Ans:d

86. Degradation of the corpus luteum is prevented by which of the following?

- A) Increased estrogen secretion by the developing placenta
- B) Release of hCG from the trophoblasts
- C) Forward positive regulation by LH
- D) Placental derived prolactin

Ans:b

89. After implantation into the uterus, nutrition of the blastocyst comes from which structure?

- A) Placenta
- B) Decidua
- C) Glomerulosa cells
- D) Corpus luteum

Ans:b

92. A placenta is incapable of synthesizing which hormones?

- A) Estrogen
- B) Progesterone
- C) Androgens
- D) Estriol

Ans:c

93. Which of the following hormones is most closely associated with the secretory phase of the endometrial cycle?

- A) Progesterone
- B) Estrogen
- C) FSH
- D) LH
- E) Inhibin

Ans:a

96. Before intercourse, a woman irrigates her vagina with a solution that lowers the pH of the vaginal fluid to 4.5. What will be the effect on sperm cells in the vagina?

- A) The metabolic rate will increase
- B) The rate of movement will decrease
- C) The formation of PGE<sub>2</sub> will increase
- D) The rate of oxygen consumption will increase

Ans:b

98. Men who take large doses of testosterone-like androgenic steroids for long periods are sterile in the reproductive sense of the word. What is the explanation for this finding?

- A) High levels of androgens bind to testosterone receptors in the Sertoli cells, resulting in overstimulation of inhibin formation
- B) Overstimulation of sperm cell production results in the formation of defective sperm cells
- C) High levels of androgen compounds inhibit the secretion of

GnRH by the hypothalamus, resulting in the inhibition of LH and FSH release by the anterior pituitary

D) High levels of androgen compounds produce hypertrophic dysfunction of the prostate gland

ans:c

107. All of the following accurately describe the regulation of the female sexual cycle EXCEPT one. Which one is the EXCEPTION?

A) Estradiol inhibits GnRH release during the post ovulatory phase

B) Progesterone increases GnRH release during the post ovulatory phase

C) Estradiol increases LH in the days immediately preceding ovulation

D) Falling progesterone and estrogen late in the luteal phase allows LH and FSH to rise

E) LH and FSH increase estradiol release during the follicular Phase

Ans:b

108. If a male is born without a penis and testes, a defect is likely in which gene on the Y chromosome?

A) ERE—estrogen response element

B) ARE—androgen response element

C) SRY—affecting Sertoli cells

D) ERG—early response genes

Ans:c

109. Where does fertilization normally take place?

- A) Uterus
- B) Cervix
- C) Ovary
- D) Ampulla of the fallopian tubes

Ans:d

113. Two days before the onset of menstruation, secretions of FSH and LH reach their lowest levels. What is the cause of this low level of secretion?

- A) The anterior pituitary gland becomes unresponsive to the stimulatory effect of GnRH
- B) Estrogen from the developing follicles exerts a feedback inhibition on the hypothalamus
- C) The rise in body temperature inhibits hypothalamic release of GnRH
- D) Secretion of estrogen, progesterone, and inhibin by the corpus luteum suppresses hypothalamic secretion of GnRH and pituitary secretion of FSH

ans:d

115. Which of the following most accurately describes events in the female sexual cycle?

- A) FSH causes the development of the corpus luteum
- B) Estrogen and LH have a positive feedback relationship during the late follicular phase
- C) Estrogens are primarily produced by theca cells in the developing ovary

D) During the luteal phase, estrogen increases to a greater degree than progesterone

E) LH is most responsible for the development of primary Follicles

Ans:b

117. A man has a disease that destroyed only the motor neurons of the spinal cord below the thoracic region. Which aspect of sexual function would not be possible?

A) Arousal

B) Erection

C) Lubrication

D) Ejaculation

Ans:d

118. Which of the following is responsible for invasion of the uterus and formation of the placenta?

A) Trophoblasts

B) Oocyte

C) Decidua

D) Endometrium

Ans:a

120. The hormone most responsible for maintaining milk production after parturition is

A) Estrogen

B) Progesterone

C) Oxytocin

D) Prolactin

E) Inhibin

ans:d

123. A “birth control” compound for men has been sought for several decades. Which substance would provide effective sterility?

A) A substance that mimics the actions of LH

B) A substance that blocks the actions of inhibin

C) A substance that blocks the actions of FSH

D) A substance that mimics the actions of GnRH

Ans:c

24. For milk to flow from the nipple of the mother into the mouth of the nursing infant, what must occur?

A) Myoepithelial cells must relax

B) Prolactin levels must fall

C) Oxytocin secretion from the posterior pituitary must take place

D) The baby’s mouth must develop a strong negative pressure over the nipple

E) All the above

Ans:c

125. A number of normal physiological changes occur during pregnancy. Which of the following best describes one of these changes in the mother?

A) Increase total peripheral resistance

B) Increased cardiac output

- C) Decreased metabolic rate
- D) Decreased body weight
- E) Decreased uterine size

Ans:b

136. What causes menopause?

- A) Reduced levels of gonadotropic hormones secreted from the anterior pituitary gland
- B) Reduced responsiveness of the follicles to the stimulatory effects of gonadotropic hormones
- C) Reduced rate of secretion of progesterone from the corpus luteum
- D) Reduced numbers of follicles available in the ovary for stimulation by gonadotropic hormones

ans:d

139. The ability of a fetus to effectively use the relatively low maternal Po<sub>2</sub> is facilitated by which of the following?

- A) Decreased glucose transport in the placental villi
- B) Increased production of amniotic fluid
- C) Increased total fetal hemoglobin concentration
- D) Decreased placental membrane permeability
- E) Decreased fetal hemoglobin binding capacity

Ans:c

141. Before implantation, the blastocyst obtains its nutrition from uterine endometrial secretions. How does the blastocyst obtain nutrition during the first week after implantation?



- A) It continues to derive nutrition from endometrial secretions
- B) The cells of the blastocyst contain stored nutrients that are metabolized for nutritional support
- C) The placenta provides nutrition derived from maternal blood
- D) The trophoblast cells digest the nutrient-rich endometrial cells and then absorb their contents for use by the blastocyst

ans:d

150. A man who has been exposed to high levels of gamma radiation is sterile due to destruction of the germinal epithelium of the seminiferous tubules, although he has normal levels of testosterone. Which of the following would be found in this patient?

- A) A normal secretory pattern of GnRH
- B) Normal levels of inhibin
- C) Suppressed levels of FSH
- D) Absence of Leydig cells

Ans:a