



<p>1) <u>When hormone affects its own producing cells, this effect is called:</u></p> <p>a) Exocrine. b) Paracrine. c) pheromone. d) Endocrine. e) Autocrine.</p>	E
<p>2) <u>Which of the following hormones does not bind to intracellular receptors?</u></p> <p>a) aldosterone. b) cortisol. c) estrogen. d) testosterone. e) oxytocin.</p>	E
<p>3) <u>The following hormones are steroid hormones EXCEPT:</u></p> <p>a) Aldosterone. b) Parathormone. c) Cortisol. d) Progesterone.</p>	B
<p>4) <u>Which of the following hormones act by binding to nuclear receptors:</u></p> <p>a) Thyroxin. b) Glucagon. c) ADH. d) Oxytocin. e) PTH.</p>	A
<p>5) <u>Which of the following statements is true:</u></p> <p>a) Receptors for steroid hormones are in the nucleus. b) Receptors for thyroid hormones are in the cytoplasm. c) Receptors for protein hormones are on the surface of the cell membrane. d) Binding of hormone to nuclear receptors increases second messenger. e) Hormones binding to cytoplasmic receptors are rapidly acting.</p>	C



<p>6) <u>Which one of the following hormones acts as a 1st messenger?</u></p> <p>a) Catecholamine b) Cortisol c) Estrogen d) Thyroxin e) Progesterone</p>	A
<p>7) <u>Which one of the following hormone(s) bind(s) to cell membrane receptor?</u></p> <p>a) catecholamines b) estrogen c) progesterone d) testosterone e) thyroxine</p>	A
<p>8) <u>Which one of the followings is used by Insulin as a second messenger?</u></p> <p>a) Ca²⁺ b) Cyclic adenosine monophosphate (cAMP) c) Cyclic guanosine monophosphate (cGMP) d) Phosphatidyl inositol e) Tyrosine kinase cascades</p>	E
<p>9) <u>Which of these can pass easily through cell membrane of target cells and bind to internal receptors?</u></p> <p>a) Thyroxine b) Adrenocorticotropic hormone c) Insulin d) Glucagon e) Follicle stimulating hormone</p>	A
<p>10) <u>Which one of the followings is a water-soluble hormone?</u></p> <p>a) Calcitriol b) Insulin c) Thyroid hormones d) Retinoids e) Steroids</p>	B



<p>11) <u>Atrial natriuretic factor uses which one of the followings as a second messenger?</u></p> <p>a) CAMP b) cGMP c) Ca²⁺ d) Phosphatidyl inositol e) kinase cascades</p>	B
<p>12) <u>Which one of the following hormones is Protein in nature?</u></p> <p>a) Growth hormone b) Glucocorticoids c) Mineralocorticoids d) Sex hormones e) Melatonin</p>	A
<p>13) <u>Which of the following hormones does not bind intracellular receptor:</u></p> <p>a) Aldosterone b) Cortisol c) Estrogen d) Testosterone e) Insulin</p>	E
<p>14) <u>Thyroid hormone:</u></p> <p>a) Contains hydrophobic 23-amino-acid leader sequence directs the molecule into the cisternae of the endoplasmic reticulum b) Synthesized from amino acid tyrosine c) Signal via activation of adenyl cyclase d) Signal by binding to cell membrane receptors e) Composed of A-B subunits</p>	B
<p>15) <u>Which one of the followings is a water-soluble hormone?</u></p> <p>a) Calcitriol b) Insulin c) Thyroid hormones d) Retinoids e) Steroids</p>	B



<p>16) <u>A distinctive feature of the mechanism of action of thyroid hormones and steroid hormones is that:</u></p> <p>a) These hormones affect metabolism.</p> <p>b) These hormones bind with specific receptor proteins on the plasma membrane of target cells.</p> <p>c) These hormones bind to receptors inside cells.</p> <p>d) Target cells react more rapidly to these hormones than to local regulators.</p> <p>e) These hormones are regulated by feedback loops.</p>	C
<p>17) <u>Which one of the following is a glycoprotein hormone in nature?</u></p> <p>a) Glucocorticoids</p> <p>b) Mineralocorticoids</p> <p>c) Progesterone</p> <p>d) Testosterone</p> <p>e) TSH</p>	E
<p>18) <u>Thyroid hormone is:</u></p> <p>a) Amino acid derived hormone.</p> <p>b) Glycoprotein.</p> <p>c) Protein derived hormone.</p> <p>d) Steroid hormone.</p> <p>e) Fatty acid derived hormone.</p>	A
<p>19) <u>Insulin receptors:</u></p> <p>a) Present in the nucleus</p> <p>b) Present in the cytoplasm</p> <p>c) Seven helical transmembrane proteins which have extracellular and intracellular domains</p> <p>d) Has intrinsic tyrosine kinase activity</p> <p>e) When bound to insulin activates adenylyl cyclase enzyme</p>	D
<p>20) <u>Insulin receptors</u></p> <p>a) present in the nucleus</p> <p>b) present in the cell membrane</p> <p>c) seven helical transmembrane proteins which have extracellular and intracellular domains</p> <p>d) They are GPCR (G-protein coupled receptors).</p> <p>e) when bound to insulin activates adenylyl cyclase enzyme</p>	B



<p>21) All the following hormones are protein in nature EXCEPT:</p> <ul style="list-style-type: none"> a. Insulin b. FSH c. TRH d. Oxytocin e. Progesterone 	E
<p>22) The following hormone that acts through second messenger:</p> <ul style="list-style-type: none"> a. Cortisol b. Thyroxin c. Adrenaline d. Calcitriol 	C
<p>23) Cyclic GMP (CGMP) is used as a second messenger by:</p> <ul style="list-style-type: none"> a. Insulin b. Glucagon c. Epinephrine d. Atrial natriuretic factor (peptide) e. Thyroxine 	D
<p>24) Which one of the following hormones is hydrophilic and has extracellular receptors?</p> <ul style="list-style-type: none"> a. Cortisol b. Estradiol c. Glucagon d. Thyroxine e. Prostaglandin 	C
<p>25) Which one of the following is NOT a general feature of hydrophilic hormones?</p> <ul style="list-style-type: none"> a. They are proteins and polypeptides b. They do not need a transport protein c. They bind to intracellular receptor d. Their plasma half-life is short in minutes 	C



<p>26) Which of the following acts to increase the release of Ca from the endoplasmic reticulum:</p> <ul style="list-style-type: none"> a. Diacylglycerol (DAG) b. Inositol triphosphate c. Parathyroid hormone d. Calcitonin 	B
<p>27) Which of the following is a steroid hormone?</p> <ul style="list-style-type: none"> a) Thyroxine b) Adrenaline c) Melatonin d) Prolactin e) Estrogen 	E
<p>28) Which of the following hormones are largely bound to transport proteins?</p> <ul style="list-style-type: none"> a) Growth hormone b) Prolactin c) ADH d) Oxytocin e) Thyroxine 	E
<p>29) Which of the following hormones is largely unbound to plasma proteins?</p> <ul style="list-style-type: none"> a. Cortisol b. Thyroxine (T4) c. Antidiuretic hormone d. Estradiol e. Progesterone 	C
<p>30) Which of the following is a glycoprotein hormone?</p> <ul style="list-style-type: none"> A. ADH B. Oxytocin C. FSH D. Ghrelin E. Somatostatin 	C



<p>31) <u>The JAK-STAT pathway is activated by:</u></p> <ul style="list-style-type: none"> A. Insulin B. Growth hormone (GH) C. Thyroid hormone D. Estrogen E. Cortisol 	B
<p>32) <u>Which hormone is derived from tryptophan?</u></p> <ul style="list-style-type: none"> A. Dopamine B. Melatonin C. Adrenaline D. Thyroxine E. Cortisol 	B
<p>33) <u>Calmodulin binds to which ion to mediate hormone effects?</u></p> <ul style="list-style-type: none"> A. Sodium (Na⁺) B. Potassium (K⁺) C. Calcium (Ca²⁺) D. Magnesium (Mg²⁺) E. Chloride (Cl⁻) 	C
<p>34) <u>Termination of cAMP action is mediated by:</u></p> <ul style="list-style-type: none"> A. Adenylate cyclase B. Phosphodiesterase (PDE) C. Protein kinase A D. Guanylate cyclase E. Phospholipase C 	B
<p>35) <u>Which of the following is a water-soluble hormone?</u></p> <ul style="list-style-type: none"> A. Testosterone B. Cortisol C. Adrenaline D. Estrogen E. Thyroxine 	B



<p>36) Phospholipase C hydrolyzes PIP2 into:</p> <ul style="list-style-type: none">A. cAMP and AMPB. DAG and IP3C. ATP and GTPD. DNA and RNAE. Glucose and glycogen	B
<p>37) Which of the following activates adenylate cyclase?</p> <ul style="list-style-type: none">A. Gi proteinB. Gq proteinC. Gs proteinD. CalmodulinE. Phospholipase C	C
<p>38) Which hormone is an example of a small polypeptide?</p> <ul style="list-style-type: none">A. Growth hormoneB. InsulinC. ADHD. TSHE. Glucagon	C



<p>1) <u>3-β-Hydroxysteroid dehydrogenase and Δ5,4 isomerase catalyze the conversion of the weak androgen DHEA to:</u></p> <p>A. Androstenedione B. Testosterone C. Progesterone D. Dihydrotestosterone E. Estrone</p>	A
<p>2) <u>In the biosynthesis of testosterone, the rate limiting step is conversion of:</u></p> <p>A. Cholesterol to pregnenolone B. Pregnenolone to progesterone C. Progesterone to 17 α-hydroxy progesterone D. 17 α-Hydroxy progesterone to androstenedione E. Androstenedione to testosterone</p>	A
<p>3) <u>Gonadotropin-releasing hormone (GnRH) is:</u></p> <p>A. A pentapeptide B. A tripeptide C. A decapeptide D. An octapeptide E. A hexapeptide</p>	C
<p>4) <u>One of the following enzymes is not required for synthesis of Estradiol:</u></p> <p>A. 17 α-hydroxylase B. 3 β-HSD C. 20, 22-desmolase D. 5 α-reductase E. Aromatase</p>	D
<p>5) <u>What serves as a precursor of testosterone ?</u></p> <p>a) Andrenosterone b) Pregnenolone c) Estrone d) Methyltestosterone e) Aldosterone</p>	B



<p>6) <u>Which of the following statements best describes the mechanism of action of sex hormones?</u></p> <p>a) They bind specific membrane receptors b) They interact with DNA directly c) They cause release of second messenger from the cell membrane d) They enhance transcription when bound to receptors e) They inhibit translation through specific cytoplasmic proteins</p>	D
<p>7) <u>Testosterone is pro-hormone to</u></p> <p>a) Estrone b) Estriol c) Estradiol d) Dehydroepiandrosterone e) Progesterone</p>	C
<p>8) <u>What is the dominant hormone secreted during luteal (second) phase of menstrual cycle?</u></p> <p>a) Estradiol b) Estrone c) Estriol d) Progesterone e) Non of the above</p>	D
<p>9) <u>Progesterone is synthesized from pregnenolone by</u></p> <p>a) 17 β -hydroxy steroid dehydrogenase b) 17 α -hydroxylase c) 3 β -hydroxy steroid dehydrogenase d) cytochrome P450 side chain cleavage complex e) 17,20-lyase</p>	C
<p>10) <u>Steroid hormones are synthesised from:</u></p> <p>a) Cholesterol b) 7-Dehydrocholesterol c) Calcitriol d) 7-Hydroxycholesterol</p>	A



<p>11) <u>The principal ovarian estrogen in females during the follicular (first) phase of menstrual cycle is:</u></p> <p>a) Estrone b) Estriol c) Progesterone d) Estradiol</p>	D
<p>12) <u>An androgen which is more powerful than testosterone is:</u></p> <p>a) Androstenedione b) Dihydrotestosterone c) Androsterone d) Epiandrosterone</p>	B
<p>13) <u>FSH and LH share a common:</u></p> <p>A. β subunit B. α subunit C. Carbohydrate side chain D. Receptor binding site E. Mechanism of degradation</p>	B
<p>14) <u>The conversion of cholesterol to pregnenolone in the adrenal cortex is stimulated by:</u></p> <p>A. LH B. FSH C. ACTH D. GnRH E. Prolactin</p>	C
<p>15) <u>Testosterone is considered a prohormone because it is converted to:</u></p> <p>A. Estradiol in Sertoli cells B. DHT in peripheral tissues C. Progesterone in the corpus luteum D. Cortisol in the adrenal cortex E. Estrone in adipose tissue</p>	B



<p>16) <u>Aromatase converts androstenedione to:</u></p> <p>A. Testosterone B. Progesterone C. Estrone D. DHEA E. Pregnenolone</p>	C
<p>17) <u>Which enzyme is absent in granulosa cells, preventing them from synthesizing androgens?</u></p> <p>A. Aromatase B. 17 α -Hydroxylase C. 3 β -HSD D. 5 α -Reductase E. 20,22-Desmolase</p>	B
<p>18) <u>A patient with 5 α -reductase deficiency would have:</u></p> <p>A. High estradiol levels B. Low DHT but normal testosterone C. Elevated progesterone D. Undetectable androstenedione E. Increased GnRH secretion</p>	B
<p>19) <u>Sex hormones are transported in blood primarily bound to:</u></p> <p>A. Albumin B. Sex steroid-binding globulin (SSBG) C. Lipoproteins D. Hemoglobin E. Transferrin</p>	B
<p>20) <u>Which of the following is the most potent androgen?</u></p> <p>A. Dehydroepiandrosterone (DHEA) B. Androstenedione C. Testosterone D. Dihydrotestosterone (DHT) E. Estrone</p>	D



<p>21) <u>The majority of testosterone in males is produced in the:</u></p> <p>A. Adrenal cortex B. Ovaries C. Leydig cells of testes D. Granulosa cells of ovaries E. Placenta</p>	C
<p>22) <u>The rate-limiting step in steroid hormone synthesis is the conversion of:</u></p> <p>A. Cholesterol to pregnenolone B. Pregnenolone to progesterone C. Androstenedione to testosterone D. Testosterone to DHT E. Progesterone to estrogen</p>	A
<p>23) <u>Which enzyme converts testosterone to estradiol in peripheral tissues?</u></p> <p>A. 5 α -reductase B. 17 β -HSD C. Aromatase D. 3 β -HSD E. 20,22-desmolase</p>	C
<p>24) <u>androstenedione is converted to estrone by:</u></p> <p>A. 5 α -reductase B. 17 α -hydroxylase C. Aromatase D. 3 β -HSD E. 20,22-desmolase</p>	C
<p>25) <u>Which enzyme deficiency would impair both cortisol and androgen synthesis?</u></p> <p>A. Aromatase B. 5 α -reductase C. 21-hydroxylase D. 17 β -HSD E. 3 β -HSD</p>	E



<p>26) <u>During pregnancy, which estrogen is primarily produced by the placenta?</u></p> <p>A. Estradiol (E2) B. Estrone (E1) C. Estriol (E3) D. Estetrol (E4) E. All of the above</p>	C
<p>27) <u>What structural feature distinguishes progesterone from testosterone?</u></p> <p>A. Aromatic A ring B. Ketone group at C3 C. 21-carbon backbone D. Hydroxyl group at C17 E. Methyl group at C10</p>	C
<p>28) <u>Which hormone directly stimulates Leydig cells to produce testosterone?</u></p> <p>A. FSH B. GnRH C. LH D. Prolactin E. ACTH</p>	C
<p>29) <u>Pregnenolone is a precursor for all EXCEPT:</u></p> <p>A. Cortisol B. Aldosterone C. Estradiol D. Thyroxine (T4) E. Testosterone</p>	D
<p>30) <u>Which androgen is primarily produced by the adrenal cortex?</u></p> <p>A. Testosterone B. Dihydrotestosterone (DHT) C. Dehydroepiandrosterone (DHEA) D. Androstenedione E. Estradiol</p>	C



<p>31) <u>Aromatase inhibitors are used to treat estrogen-dependent cancers by blocking:</u></p> <ul style="list-style-type: none">A. Testosterone synthesisB. Conversion of androgens to estrogensC. Progesterone receptor bindingD. GnRH secretionE. 5α-reductase activity	B
<p>32) <u>Which of the following intermediates is common to both the $\Delta 5$ and $\Delta 4$ pathways of testosterone synthesis?</u></p> <ul style="list-style-type: none">A. ProgesteroneB. 17α-HydroxyprogesteroneC. AndrostenedioneD. PregnenoloneE. DHEA	C