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Thoroughly revised and updated edition with image-based questions

Self-Assessment & Review of FMGE/MCI SCREENING EXAMINATION

(2002–January 2025)

10th Edition

Kamal KV

JAYPEE

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CHAPTER 2

Physiology

HEMATOLOGY

1. Most useful method of estimating total iron content of blood:
a. Ferritin b. Transferrin
c. Erythropoietin d. Lactoferrin

2. Substance present in both serum and plasma:
a. Fibrinogen b. Factor II
c. Factor VII d. Factor V

3. Hemophilia B is deficiency of which factor?
a. IX b. XII
c. VIII d. X

4. Endothelial cells synthesize which of the following?
a. Factor XII b. Factor X
c. vW factor d. Fibrinogen

5. Normal pH of blood is:
a. 7.30 b. 7.20
c. 7.70 d. 7.40

6. Most abundant buffer in blood:
a. Phosphate b. Protein
c. Hemoglobin d. Bicarbonate

7. 1 gm hemoglobin binds with:
a. 1.22 mL O_2 b. 1.33 mL O_2
c. 1.44 mL O_2 d. 1.55 mL O_2

8. Plasma makes:
a. 20% of Body Weight b. 15% of Body Weight
c. 10% of Body Weight d. 5% of Body Weight

9. Extracellularly, which ion is found in greatest amount?
a. Sodium b. Potassium
c. Chloride d. Calcium

10. Source of gamma-globulins:
a. Liver b. Spleen
c. T-cells d. Plasma cells

11. Respiratory burst is related to:
a. Hyperventilation after a period of apnea
b. Apnea after a period of hyperventilation
c. Sharp increase in O_2 uptake & metabolism in neutrophils
d. None of the above

12. Monocytes remain in the circulation for:
a. 1-3 days b. 24 hours
c. 12 hours d. 6 hours

13. Most common Hemoglobin in normal adult is:
a. HbA b. HbF
c. HbS d. HbA2

14. Need of vitamin B_{12} and folate in formation of red blood cells is primarily due to their effects on:
a. Hemoglobin formation
b. DNA synthesis in the bone marrow
c. Absorption of iron from the gut
d. Synthesis and release of erythropoietin from the kidney

15. Hageman factor is involved in:
a. Extrinsic pathway b. Intrinsic pathway
c. Fibrinolysis d. None

16. When aPTT is prolonged, factor unaffected is:
a. XII b. XI
c. VII d. IX

17. Hemoglobin with molecular weight of 64,458:
a. HbA b. HbF
c. HbS d. HbA2

18. Most abundant buffering agent seen in blood:
a. Phosphates b. Protein
c. Hemoglobin d. Bicarbonate

19. Osmolality of plasma in normal adult:
a. 250-260 mOsm/L b. 280-290 mOsm/L
c. 310-320 mOsm/L d. 340-350 mOsm/L

20. Most abundant ion in ICF:
a. Sodium b. Potassium
c. Chloride d. Bicarbonate

21. Major contributor to plasma osmolality:
a. Sodium ions b. Potassium ions
c. Chloride ions d. Calcium ions

22. Prothrombin to thrombin conversion need:
a. Calcium b. Magnesium
c. Potassium d. Sodium

23. Iron binding protein:
a. Hephaestin b. Transferrin
c. Ferroportin-1 d. Ferritin

24. First site for hematopoiesis in fetus:
a. Spleen b. Liver
c. Yolk sac d. Bone marrow

Answers

1. a	2. c	3. a	4. c	5. d	6. d	7. b	8. d
9. a	10. d	11. c	12. a	13. a	14. b	15. b	16. c
17. a	18. d	19. b	20. b	21. a	22. a	23. b	24. c

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25. Chief site of hematopoiesis in 2nd trimester of life:
a. Yolk sac
b. Liver
c. Spleen
d. Bone marrow

26. Cation more dominant in ICF:
a. Sodium
b. Potassium
c. Calcium
d. Magnesium

27. Half life of albumin:
a. 7 days
b. 14 days
c. 21 days
d. 28 days

28. Warm periphery is noticed in which type of shock?
a. Cardiogenic shock
b. Septic shock
c. Hemorrhagic shock
d. Traumatic shock

29. Anticoagulant secreted by endothelium:
a. Heparin
b. Alpha2 macroglobulin
c. Thrombomodulin
d. All of the above

30. Phagocytosis is done by:
a. Eosinophil
b. Basophil
c. Neutrophil
d. Lymphocyte

31. Best for ECF volume measurement:
a. Tritium oxide
b. Evans blue
c. Inulin
d. Antipyrine

32. Total plasma volume is measured by:
a. Mannitol
b. Evans blue
c. Inulin
d. Sucrose

33. T cells mature in:
a. Thyroid
b. Tongue
c. Thymus
d. Trachea

34. Major portion of body water is:
a. Intracellular
b. Extracellular
c. Both the compartments
d. Variable

35. T-cells mature in:
a. Thyroid
b. Tongue
c. Thymus
d. Trachea

36. Plasma protein, which is NOT normally synthesized in liver?
a. Angiotensin
b. Angiotensinogen II converting enzyme
c. C-reactive protein
d. Albumin

37. Which one of the following is NOT a transporter or binding protein?
a. Erythropoietin
b. Ceruloplasmin
c. Lactoferrin
d. Transferrin

38. Reticulocytes are stained with:
a. Auramine
b. Brilliant cresyl blue
c. Sudan black
d. Indigo carmine

39. Which of the following defines hematocrit?
a. Number of erythrocytes in blood
b. Percentage of the blood, by volume, occupied by erythrocytes
c. Ratio of erythrocytes to leucocytes
d. Ratio of erythrocytes to all blood cells

40. Normal pH of blood is:
a. 7.30
b. 7.20
c. 7.70
d. 7.40

41. Monocytes remains in the circulation for:
a. 1–3 days
b. 24 hours
c. 12 hours
d. 6 hours

42. Most common Hemoglobin in normal adult is:
a. HbA
b. HbF
c. HbS
d. HbA2

43. Carbon dioxide is transported in plasma as:
a. Dissolved form
b. Carbamino compounds
c. Bicarbonate
d. All of the above

44. Most useful method of estimating total iron content of blood:
a. Ferritin
b. Transferrin
c. Erythropoietin
d. Lactoferrin

45. Vitamin K dependent clotting factors of hepatic origin are all of the following EXCEPT:
a. II
b. VII
c. VIII
d. X

46. In sickle cell disease:
a. Glutamic acid, at position No. 5 of beta-globin chain of hemoglobin is replaced by valine
b. Glutamic acid, at position No. 6 of beta-globin chain of hemoglobin is replaced by valine
c. Valine at position No. 6 of beta-globin chain of hemoglobin is replaced by glutamic acid
d. Valine at position No. 5 of beta-globin chain of hemoglobin is replaced by glutamic acid

47. 1 gm hemoglobin binds with:
a. 1.22 mL O_2
b. 1.33 mL O_2
c. 1.44 mL O_2
d. 1.55 mL O_2

48. Substance present in both serum and plasma:
a. Fibrinogen
b. Factor II
c. Factor VII
d. Factor V

Answers

25. b	**26.** b	**27.** c	**28.** b	**29.** c	**30.** c	**31.** c	**32.** b
33. c	**34.** a	**35.** c	**36.** b	**37.** a	**38.** b	**39.** b	**40.** d
41. a	**42.** a	**43.** d	**44.** a	**45.** c	**46.** b	**47.** b	**48.** c

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49. Hemophilia B is deficiency of which factor?
a. IX b. XII
c. VIII d. X

50. Universal recipients have blood group:
a. A b. B
c. O d. AB

51. Extrinsic system (blood coagulation) is triggered by the release of:
a. Prothrombin b. Thromboplastin
c. Fibrinogen d. Thrombin

52. Hageman factor is involved in:
a. Extrinsic pathway b. Intrinsic pathway
c. Fibrinolysis d. None

53. Erythropoietin is secreted by:
a. Interstitial cells of kidney
b. Extraglomerular mesangial cells
c. Macula densa
d. Renal tubular epithelial cells

54. Plasma makes:
a. 20% of Body Weight b. 15% of Body Weight
c. 10% of Body Weight d. 5% of Body Weight

55. Heparin inhibits the active form of the following factors EXCEPT:
a. V b. X
c. XI d. XII

56. Autoregulation is seen in:
a. Kidney b. Brain
c. Muscles d. All of the above

57. Factor required for erythrocyte stability:
a. Ankyrin b. Spectrin
c. NADPH d. All of the above

58. Extrinsic system of coagulation is checked by:
a. aPTT b. PT
c. BT d. PTT

59. Reticulocytosis is NOT seen in:
a. Chronic renal failure anemia
b. Hemorrhage
c. Hereditary spherocytosis
d. Paroxysmal nocturnal hemoglobinuria

60. Hereditary spherocytosis is due to deficiency of:
a. Spectrin b. Pyruvate kinase
c. Cytokeratin d. Integrin

61. Raised aPTT is seen in all of the following bleeding disorder EXCEPT:
a. Hemophilia A
b. Hemophilia B
c. Von-Willebrand disease
d. Henoch-Schonlein purpura

62. Platelets are stored at what temperature?
a. 20°C b. 15°C
c. 10°C d. 5°C

63. Iron is transported bound to:
a. Ferritin b. Transferrin
c. Hemosiderin d. Hemoglobin

64. If both mother and father are Rh-ve then:
a. 25% children will be Rh-ve
b. All children will be Rh-ve
c. 50% children will be Rh-ve
d. All children will be Rh+ve

65. Oxygen carrying capacity of haemoglobin is:
a. 1.54 mL/g b. 1.34 mL/g
c. 1.24 mL/g d. 1.44 mL/g

66. FALSE for fetal haemoglobin:
a. Adult haemoglobin is replaced by fetal haemoglobin by 10-12th week of life
b. Alpha 2, epsilon 2
c. Shifts the oxygen dissociation curve to right
d. Functionally different from adult hemoglobin

67. Glucose in CSF is what % of glucose in plasma?
a. Equal b. 1/3rd
c. 2/3rd d. 1/2

68. Which protein transports iron?
a. Ceruloplasmin b. Heparin
c. Transferrin d. Ferritin

69. True regarding HbF is:
a. Alpha 2, delta 2
b. At 20 weeks intrauterine life, there is 90% HbF
c. 10% persist in adults
d. Shifts oxygen dissociation curve to right

70. Average life span of RBC:
a. 160 days b. 120 days
c. 140 days d. 100 days

71. Alpha2, Gamma2 is:
a. Adult hemoglobin b. Fetal hemoglobin
c. Hemoglobin S d. Hemoglobin M

72. Storage form of iron:
a. Transferrin b. Apotransferrin
c. Ferritin d. Hemoglobin

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Answers

49. a	**50.** d	**51.** b	**52.** b	**53.** a	**54.** d	**55.** a	**56.** d
57. d	**58.** b	**59.** a	**60.** a	**61.** d	**62.** a	**63.** b	**64.** b
65. b	**66.** b	**67.** c	**68.** c	**69.** b	**70.** b	**71.** b	**72.** c

73. Which of the following factor is the initiator of extrinsic coagulation pathway?
a. XII b. X
c. VII d. V

74. Each haemoglobin molecule contains how many globin:
a. 1 b. 2
c. 3 d. 4

75. Normal bilirubin level in body:
a. 1 mg/dL b. 2 mg/dL
c. 3 mg/dL d. 4 mg/dL

CIRCULATORY SYSTEM

76. Slowest conduction is observed in:
a. Bundle of His b. Purkinje fibres
c. AV node d. SA node

77. Cardiac event at the end of isometric relaxation phase:
a. Atrioventricular valves open
b. Atrioventricular valves closes
c. Corresponds to peak of C wave in JVP
d. Corresponds to T wave in ECG

78. Bainbridge reflex causes:
a. Decreased distension of large somatic veins
b. Decreased BP
c. Decreased HR
d. Increased HR

79. Greatest resistance in peripheral blood circulation is due to:
a. Capillaries b. Veins
c. Arterioles d. Arteries

80. Single most important factor controlling contractility of heart:
a. Myocardial wall thickness
b. Right atrial volume
c. SA node pacemaker potential
d. Sympathetic stimulation

81. During flight or fight reaction, factor responsible for increase in local blood flow:
a. Sympathetic system mediated cholinergic release
b. Local hormones
c. Para-sympathetic cholinergic
d. Endocrine factors only

82. An afferent arteriolar dilator:
a. Anti-histaminic b. Aspirin
c. Propranolol d. Prostacyclin

83. The coronary blood flow (mL/min) is:
a. 250 mL/min b. 500 mL/min
c. 750 mL/min d. 850 mL/min

84. Splanchnic vessels & venules contains:
a. 10–20% of blood volume b. 20–30% of blood volume
c. 40–50% of blood volume d. 60–70% of blood volume

85. First heart sound indicates onset of:
a. Ventricular diastole b. Ventricular systole
c. Atrial systole d. Atrial diastole

86. Law relating to distending pressure and tension in a blood vessel wall is called:
a. Mary's law b. Laplace's law
c. Einthoven's law d. Frank Starling's law

87. Mediator of 'Flare' in triple response:
a. Axon reflex b. Arteriolar dilation
c. Histamine release d. Local hormones

88. Ion responsible for plateau phase of action potential in myocardium:
a. Closure of voltage gated potassium channels
b. Influx of potassium
c. Influx of calcium
d. Efflux of sodium

89. Structure responsible for peripheral vascular resistance:
a. Aorta b. Venules
c. Capillaries d. Arterioles

90. Organ receiving maximum blood flow (mL/kg minute):
a. Lungs b. Brain
c. Liver d. Kidney

91. Law which relates to preload:
a. Mary's law b. Laplace law
c. Einthoven's law d. Frank Starling's law

92. During the cardiac cycle, opening of aortic valve occurs at:
a. Beginning of systole
b. End of isovolumetric contraction
c. End of diastole
d. End of diastasis

93. Mean pulmonary artery pressure:
a. 25 mm Hg b. 20 mm Hg
c. 15 mm Hg d. 10 mm Hg

94. SA node is known as pacemaker because it:
a. Has rich sympathetic innervation
b. Has rich cholinergic innervation
c. Generates impulses at a highest rate
d. Generates impulses spontaneously

Answers

73. c	**74.** a	**75.** a	**76.** c	**77.** a	**78.** d	**79.** c	**80.** d
81. a	**82.** d	**83.** a	**84.** b	**85.** b	**86.** b	**87.** a	**88.** c
89. d	**90.** d	**91.** d	**92.** b	**93.** c	**94.** c		

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95. Effect of vagal stimulation on heart:
a. Increased force of contraction
b. Increased cardiac output
c. Increased heart rate
d. Increased R-R interval

96. QRS complex is mainly due to:
a. Atrial depolarization
b. Atrial repolarization
c. Ventricular depolarization
d. Ventricular repolarization

97. Preload measures:
a. Stroke volume
b. Peripheral resistance
c. End diastolic volume
d. End systolic volume

98. Largest pool of blood is in:
a. Venules
b. Veins
c. Arteries
d. Capillaries

99. Autoregulation is observed in:
a. Muscles
b. Brain
c. Kidney
d. All of the above

100. Negative wave in Jugular Venous Pulse:
a. a wave
b. v wave
c. c wave
d. x wave

101. Cause of 'red reaction' in triple response:
a. Decreased capillary permeability
b. Axon reflex
c. Capillary dilation
d. Local edema

102. Maximum filling of ventricles is observed in:
a. Atrial contraction
b. Ventricular diastole
c. Isovolumetric relaxation
d. Protodiastole

103. Heart musculature is perfused during:
a. Isovolumetric contraction phase
b. Protodiastole
c. Ventricular diastole
d. Maximum ejection phase

104. Effect of norepinephrine mainly due to excitation of:
a. Alpha receptors
b. Beta receptors
c. Both are stimulated equally
d. None is stimulated

105. Precapillary resistance vessels are:
a. Arteries
b. Veins
c. Arterioles
d. Venules

106. Marey's law denotes relationship between:
a. Heart rate & cardiac output
b. Heart rate & BP
c. Heart rate & stroke volume
d. Heart rate & presystolic volume

107. Baroreceptors respond well to changes in:
a. Sustained pressure
b. Pulse pressure
c. Both
d. None

108. From an ECG tracing, heart rate can be calculated as:
a. 60/R-R interval (in seconds)
b. 150/R-R interval (in seconds)
c. 600/R-R interval (in seconds)
d. 1500/R-R interval (in seconds)

109. 'a' wave in JVP is due to:
a. Atrial contraction
b. Atrial relaxation
c. Ventricular contraction
d. Ventricular relaxation

110. At rest, blood flow is maximum in:
a. Heart
b. Kidney
c. Brain
d. Skin

111. Mediator of 'Flare' in triple response:
a. Axon reflex
b. Arteriolar dilation
c. Histamine release
d. Local hormones

112. At rest, blood flow is maximum in:
a. Heart
b. Kidney
c. Brain
d. Skin

113. Fourth heart sound is caused by:
a. Closure of the aortic and pulmonary valves
b. Vibrations in the ventricular wall during systole
c. Ventricular filling
d. Closure of the mitral and tricuspid valves

114. Which of the following methods is NOT used for measurement of body fluid volumes?
a. Antipyrine for total body water
b. Insulin for extracellular fluid
c. Evans blue for plasma volume
d. 125I-albumin for blood volume

115. CVP denotes pressure of:
a. Left ventricle
b. Left atrium
c. Right ventricle
d. Right atrium

116. The first heart sound is due to:
a. AV valves closure
b. Closing of aortic and pulmonary valves
c. Opening of AV valves
d. Opening of aortic and pulmonary valves

117. Cardiac output depends on all of the following EXCEPT:
a. Cardiac rate
b. Body surface area
c. Stroke volume
d. Cardiac contractility

118. QRS complex is due to:
a. Ventricular repolarization
b. Atrial depolarization
c. Conduction through AV node
d. Ventricular depolarization

Answers

95. d	**96.** c	**97.** c	**98.** b	**99.** d	**100.** d	**101.** c	**102.** b
103. c	**104.** a	**105.** c	**106.** b	**107.** c	**108.** a	**109.** a	**110.** b
111. a	**112.** b	**113.** c	**114.** d	**115.** d	**116.** a	**117.** b	**118.** d

JAYPEE BROTHERS

119. Vitamin K causes carboxylation of all of the following clotting factors EXCEPT:

a. II b. VII
c. VIII d. IX

120. Mean pulmonary artery pressure is:

a. 10 mm Hg b. 15 mm Hg
c. 20 mm Hg d. 25 mm Hg

121. Mean arterial pressure is calculated as:

a. Diastolic pressure +1/3 (Systolic pressure- diastolic pressure)
b. Systolic pressure + 1/3 (Systolic pressure- diastolic pressure)
c. Diastolic + 1/3rd of systolic pressure
d. Arithmetic mean of systolic and diastolic pressures

122. Blood flow in the vessels supplying the subendocardial portion of left ventricle occurs during:

a. Systole
b. Diastole
c. Throughout the cycle
d. Diastole and mid half of systole

123. Coronary vasodilation is caused by:

a. Adenosine b. Noradrenergic stimulation
c. Hypocarbia d. All of the above

124. TRUE statement regarding Purkinje fibres:

a. Are myelinated fibres
b. Have action potential about a tenth as long as those in the heart muscle
c. Have conduction velocity of four times than that of the heart muscle
d. All of the above

125. Negative waves in jugular venous pulse:

a. A wave b. V wave
c. C wave d. X wave

126. ECG changes seen in hypocalcemia:

a. ST segment depression
b. Prolongation of ST segment
c. Inversion of T wave
d. Prolongation of PR segment

127. Left ventricular failure is said to be present, if pulmonary capillary wedge pressure exceeds:

a. 5 mm Hg b. 10 mm Hg
c. 15 mm Hg d. 20 mm Hg

128. The first reactionary change to occur after vessel injury and hemorrhage is:

a. Vasoconstriction b. Bradycardia
c. Raised cortisol d. Raised adrenaline

129. Increased preload is seen in all of the following EXCEPT:

a. Sympathetic stimulation b. Rest
c. Arteriovenous fistula d. Over transfusion of blood

130. Coronary blood flow is maximum during which phase of cardiac cycle?

a. Isovolumic relaxation phase
b. Isovolumic contraction phase
c. Ejection phase
d. Isovolumic contraction phase

131. Aortic valve closure corresponds to the beginning of:

a. Systole b. Parasystole
c. Isovolumetric relaxation d. Isovolumetric contraction

132. Capacitance vessels are:

a. Arteries b. Venules
c. Capillaries d. Arterioles

133. 3rd Heart sound is heard in:

a. Atrial systole
b. Rapid filling phase
c. Isometric contraction phase
d. Isometric relaxation

134. A subject changed his position from lying down to standing erect. What will be the effect on BP of this postural change?

a. No change b. BP will increase
c. BP will decrease d. Variable

135. Total cross-sectional area is maximum for:

a. Veins b. Artery
c. Arteriole d. Capillaries

136. Continuous murmur is heard in:

a. Mitral stenosis b. Aortic stenosis
c. Patent ductus arteriosus d. Coarctation of aorta

137. Cut-off value of systolic BP for hypertension:

a. >160 b. >150
c. >170 d. >140

138. Event at the end of isovolumetric relaxation:

a. Closure of AV valves
b. Closure of semilunar valves
c. Opening of AV valves
d. Opening of semilunar valves

139. NOT a true statement for Stroke volume EXCEPT:

a. Reduced because of an increase in heart rate
b. Depends on after load
c. Depends on prediastolic volume
d. Directly proportional to heart rate

Answers

119. c	**120.** b	**121.** a	**122.** b	**123.** a	**124.** c	**125.** d	**126.** b
127. d	**128.** a	**129.** b	**130.** a	**131.** c	**132.** b	**133.** b	**134.** c
135. d	**136.** c	**137.** b	**138.** c	**139.** a			

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140. TRUE statement regarding amount of work done by ventricles:
a. Right ventricle works more than left
b. Left ventricle works more than right
c. Both ventricle work equally
d. Amount of work is variable for both ventricles

141. NOT a true statement:
a. Rate of conduction in purkinje fibres is about 4 m/s
b. SA is pacemaker of heart
c. AV node is fastest conducting zone
d. AV nodal delay is 0.1 seconds

142. True for Purkinje fibers:
a. Modified cardiac muscle fiber
b. Supplied by left coronary artery
c. Slowest conduction velocity
d. Fastest contractility

ENDOCRINOLOGY

143. Active form of vitamin D:
a. Calcitriol
b. Calciterol
c. Cholecalciferol
d. Hydroxycholecalciferol

144. Half-life of parathormone:
a. 5-10 minutes
b. 4 hours
c. 20 hours
d. 40 minutes

145. All are diabetogenic hormone EXCEPT:
a. Glucagon
b. Insulin
c. Growth hormone
d. Cortisol

146. Receptor of which of the following hormone has 4 subunits and 2 subunits has tyrosine kinase activity:
a. Insulin
b. Glucagon
c. T3
d. T4

147. Hormone related to breast milk feeding:
a. Prolactin
b. Oxytocin
c. Galactogen
d. Growth hormone

148. Calcitonin is produced by:
a. Thyroid gland
b. Parathyroid gland
c. Adrenal cortex
d. Pituitary gland

149. Sudden decrease in serum calcium is associated with:
a. Increased thyroxine & PTH secretion
b. Increased phosphate
c. Increased excitability of muscles & nerves
d. Cardiac conduction abnormalities

150. Adrenal medulla secretes:
a. Sex hormones
b. Thyroid stimulating hormones
c. Epinephrine
d. Glucocorticoid

151. Inhibitor of glucagon secretion:
a. Exercise
b. Beta-2 adrenergic agonist
c. Secretin
d. Amino acids

152. Normal value for fasting blood sugar:
a. 140-160 mg/100 mL
b. 120-140 mg/100 mL
c. 100-120 mg/100 mL
d. 80-100 mg/100 mL

153. Long term status of blood sugar can be ascertained by:
a. HbA1c
b. HbA
c. Serial measurement of fasting blood sugar
d. Oral GTT

154. TRH control release of:
a. Prolactin
b. TSH
c. Both of the above
d. None of the above

155. Growth hormone secretion is stimulated by:
a. Glucose
b. Cortisol
c. Methyl-prednisolone
d. Hypoglycemia

156. Fall in extracellular calcium leads to:
a. Reduced membrane stability
b. Reduced excitability
c. Decrease in irritability of nerves
d. All of the above

157. Iodine uptake in thyroid gland is:
a. Endocytosis
b. Facilitated diffusion
c. Primary active transport
d. Secondary active transport

158. D cells of pancreas secrete:
a. Glucagon
b. Insulin
c. Somatostatin
d. Pancreatic polypeptide

159. A neurotransmitter and a hormone as well:
a. ACTH
b. Cortisol
c. GABA
d. Somatostatin

160. Thyroid hormones in plasma are bound mainly to:
a. Globulin
b. Prealbumin
c. Albumin
d. Preglobulin

161. Wolff-Chaikoff effect is due to:
a. Inhibition of iodide trapping
b. Inhibition of iodide-organic binding
c. Inhibition of cAMP response of TSH
d. Inhibition of thyroglobulin proteolysis

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Answers

140. b	141. c	142. a	143. a	144. a	145. b	146. a	147. b
148. a	149. c	150. c	151. c	152. d	153. a	154. c	155. d
156. a	157. d	158. c	159. d	160. a	161. b		

162. Most important stimulus for thyrocalcitonin/calcitonin secretion is:
a. Increase in serum calcium levels
b. Decrease in serum calcium levels
c. Decrease in serum phosphorous
d. Increase in serum phosphorous

163. All of the following hormones are increased during stress EXCEPT:
a. Cortisol
b. Insulin
c. Adrenalin
d. Noradrenalin

164. Oxytocin is synthesized in:
a. Anterior pituitary
b. Hypothalamus
c. Intermediate pituitary
d. Posterior pituitary

165. ADH is released from:
a. Anterior pituitary
b. Posterior pituitary
c. Hypothalamus
d. Intermediate pituitary

166. All are true for oxytocin EXCEPT:
a. Polypeptide
b. Secreted by anterior pituitary
c. Causes ejection of milk
d. Secreted in both sexes

167. Action of renin:
a. Erythropoiesis
b. Controls secretion of melatonin
c. Converts angiotensinogen to angiotensin I
d. Converts angiotensinogen I to angiotensinogen II

168. Anterior pituitary gland secretes all of the following EXCEPT:
a. GH
b. TSH
c. FSH
d. GnRH

169. TSH is normal in:
a. Hyperthyroid
b. Euthyroid
c. Hypothyroid
d. Graves

170. Which of the following is NOT related to the calcium metabolism?
a. Calcitonin
b. 1, 25-dihydroxycholecalciferol
c. Vitamin D
d. Thyroxine
e. None of the option

171. At what time of the day GH levels are highest?
a. 2 hours after sleep
b. 2 hours before sleep
c. Evening
d. Early morning

172. Fasting blood sugar in normal individuals is:
a. 80–100 mg/100 mL
b. 100–120 mg/100 mL
c. 120–140 mg/100 mL
d. 140–160 mg/100 mL

173. True regarding glucose tolerance test are ALL EXCEPT:
a. Can be done in fasting as well as post prandial state
b. 1 gram of glucose/kg body weight is administered
c. Glucose levels are checked after 2 hours
d. Diagnosis of diabetes mellitus can be established

174. Which one of the following statements describes diabetes mellitus?
a. Rise of blood sugar of 50 mg/100 mL in oral glucose tolerance test
b. Fasting blood sugar value more than 200 mg/100 mL
c. Post prandial rise of blood sugar more than 50 mg/100 mL
d. All of the above

175. Which of the following causes hypocalcemia?
a. Parathormone
b. Thyroid hormones
c. Calcitonin
d. 1,25-dihydroxycholecalciferol

176. The hormone which helps in milk secretion:
a. Oxytocin
b. Growth hormone
c. FSH
d. Prolactin

177. Features like hypogonadism, dwarfism, loss of hair, pigmentation and ulcers of skin and decreased immunity are associated with deficiency of:
a. Iron
b. Zinc
c. Iodine
d. Copper

178. Long-term status of blood sugar is explained by:
a. HbA
b. Serial measurement of FBS
c. Oral glucose tolerance test
d. HbA1c

179. Suprarenal medulla secretes which hormones?
a. Glucocorticosteroids
b. Catecholamines
c. Androgens
d. Mineralocorticoids

180. Chronic atrophy of adrenal gland will result in which hormone deficiency?
a. CRH
b. ACTH
c. Cortisol
d. MSH

181. Procedure of glucose tolerance test is:
a. Glucose load in fed state, measurement of blood glucose after 2 hours
b. Glucose load in fasting state, measurement of blood glucose after 2 hours
c. Glucose load in fasting state, measurement of urinary glucose after 2 hours
d. Glucose load in fed state, measurement of urinary glucose after 2 hours

182. Corticosteroids suppress:
a. GH
b. ACTH
c. FSH
d. LH

Answers

162. a	**163.** b	**164.** b	**165.** b	**166.** b	**167.** c	**168.** d	**169.** b
170. e	**171.** a	**172.** a	**173.** a	**174.** b	**175.** c	**176.** d	**177.** b
178. d	**179.** b	**180.** c	**181.** b	**182.** b			

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183. Thyroxine levels are raised in:
a. Myxedema
b. Endemic goitre
c. Idiopathic nontoxic colloid goitre
d. Grave's disease

184. TRUE about Chvostek's sign are all of the following EXCEPT:
a. Denotes neuromuscular hyperexcitability
b. Elicited over face
c. Raised calcium level
d. Facial nerve is stimulated by tapping

185. Hypocalcemia results in:
a. Absent tendon reflexes
b. Shortened QT interval in ECG
c. Reduced excitability of nerves and muscle cells
d. Tetany

186. Which of the following is seen in cold temperature?
a. Increased Thyroxine release
b. Decreased Thyroxine release
c. Unaltered Thyroxine release
d. None of the above

187. During surgical stress, which is NOT seen?
a. Increased ACTH
b. Increased insulin
c. Increased norepinephrine
d. Increased GH

188. FALSE regarding insulin:
a. Increased glycogenesis
b. Increased protein synthesis
c. Increased lipogenesis
d. Increased ketogenesis

189. Which type of GLUT receptors are present on adipose cells?
a. GLUT I
b. GLUT II
c. GLUT III
d. GLUT IV

190. GH formation is promoted by which of the following:
a. Cortisol
b. REM phase of sleep
c. Glucose
d. Glucagon

191. Which of the following does NOT stimulate prolactin secretion?
a. Dopamine
b. Sleep
c. Estrogen
d. Pregnancy

192. Conversion of 25-dihydroxy-cholecalciferol to 1,25-dihydroxy-cholecalciferol occurs in:
a. Skin
b. Lung
c. Liver
d. Kidney

193. Cortisol is produced in:
a. Zona glomerulosa
b. Zona reticularis
c. Zona fasciculata
d. Adrenal medulla

194. Which substance maintains potassium balance in the body?
a. Cortisol
b. Renin
c. Aldosterone
d. Rennin

195. Insulin action involves activation of:
a. Nuclear receptors
b. Protein kinase
c. Calmodulin
d. Inositol triphosphate

196. Which of the following is a mineralocorticoid?
a. Epinephrine
b. Cortisol
c. Aldosterone
d. Androstenesione

197. Enzyme required to convert T4 to T3 in kidney:
a. Type I iodothyronine deiodinase
b. Type II iodothyronine deiodinase
c. Type III iodothyronine deiodinase
d. Phenylethanolamine N methyltransferase

198. Which is a protein hormone?
a. Aldosterone
b. Relaxin
c. Cortisone
d. Estrogen

199. Correct match regarding hormone and its site of action:
a. ADH – Proximal tubule
b. ANP – Loop of Henle
c. Aldosterone – Collecting tubules
d. Angiotensin – Distal tubule

200. Which of the following is NOT secreted by adrenal medulla?
a. Norepinephrine
b. Epinephrine
c. Dopamine
d. Phenylephrine

201. What can be a manifestation of decreased extracellular calcium?
a. Reduced excitability
b. Reduced membrane stability
c. Reduces neuromuscular irritability
d. No change in amount of depolarization needed to produce action potential

202. NOT a true statement for melatonin hormone:
a. Used for treating jet lag phenomenon
b. Controls sleep mechanism
c. Secreted by posterior pituitary
d. Synthesis high in dark periods

203. Hormone which suppresses lactation:
a. Estrogen
b. Progesterone
c. Testosterone
d. Prolactin

JAYPEE BROTHERS

Answers

183. d	**184.** c	**185.** d	**186.** a	**187.** b	**188.** d	**189.** d	**190.** d
191. a	**192.** d	**193.** c	**194.** c	**195.** b	**196.** c	**197.** a	**198.** b
199. c	**200.** d	**201.** b	**202.** c	**203.** a			

204. Enzyme needed for conversion of T4 to T3:
a. Iodotyrosine deiodinase
b. Iodothyronine deiodinase
c. Thyroid peroxidase
d. Tyrosinase

205. TRUE regarding RT3 is:
a. 95% is formed by de-iodination of T3
b. RT3 is active
c. 95% secreted by thyroid
d. 95% is formed by de-iodination of T4

206. Following stays for LEAST duration in plasma:
a. Corticosterone b. Cortisol
c. Aldosterone d. Norepinephrine

207. Nonglycoprotein hormone is:
a. hCG b. Progesterone
c. TSH d. FSH

208. Glucose fever is associated with:
a. Cushing syndrome b. Addison disease
c. Dwarfism d. Gigantism

209. Aldosterone is secreted by:
a. Zona glomerulosa b. Zona reticularis
c. Zona fasciculata d. Adrenal medulla

210. Effect of norepinephrine as compared to epinephrine:
a. Hypotension and tachycardia
b. Hypertension and bradycardia
c. Hypotension and bradycardia
d. Hypertension and tachycardia

211. Hypothalamic hormone may have both inhibiting and stimulating action over release of which of the following anterior pituitary hormone?
a. Growth hormone b. LH
c. TSH d. ACTH

212. Which of the following hormone acts on nuclear receptor:
a. Thyroxine b. Steroid hormones
c. Protein hormones d. Adrenaline

213. Cyclic AMP acts as a second messenger for:
a. Thyroxine b. Estrogen
c. Testosterone d. hCG

214. Which of the following is NOT a diabetic state?
a. Fasting sugar of 120 mg/dL
b. Postprandial sugar of 140 mg/dL
c. Glycosylated hemoglobin more than 7%
d. Random blood sugar of 200 mg/dL

215. Stones, abdominal groans, psychic moans and bones are related to:
a. Hypoparathyroidism b. Hyperparathyroidism
c. Hypothyroidism d. Hypothyroidism

216. Which of the following hormone promote intracellular movement of potassium?
a. Glucagon b. Adrenaline
c. Insulin d. Noradrenaline

217. 25-hydroxycholecalciferol is converted to active form of vitamin-D3 in:
a. Liver b. Kidney
c. Adrenal d. Skin

218. cAMP formation involves:
a. Tyrosine kinase b. Protein kinase
c. Adenyl cyclase d. Insulin

219. Which of the following neurotransmitter controls secretion of Prolactin?
a. GABA b. Acetylcholine
c. Dopamine d. Somatostatin

220. Insulin helps glucose entry into all of the following EXCEPT:
a. Muscles b. Hepatic cells
c. Fat d. Red blood cells

221. FSH is secreted by which of the following cells of anterior pituitary?
a. Chromophobes b. Basophils
c. Acidophils d. Theca interna cells

222. Vasopressin is secreted by which of the following nuclei?
a. Supraoptic b. Posterior nucleus
c. Anterior pituitary d. Preoptic

223. Hormone secreted by posterior pituitary:
a. Oxytocin b. Prolactin
c. MSH d. FSH

EXCRETORY SYSTEM

224. Glucose reabsorption in kidney occurs in:
a. PCT b. DCT
c. Loop of Henle d. Collecting duct

225. Transport maximum of glucose in a nephron is:
a. 120 mg b. 150 mg
c. 180 mg d. 320 mg

226. Maximum absorption of water takes place in:
a. PCT b. DCT
c. Collecting duct d. Loop of Henle

JAYPEE BROTHERS

Answers

204. b	205. d	206. d	207. b	208. b	209. a	210. b	211. a
212. a	213. d	214. b	215. b	216. c	217. b	218. c	219. c
220. d	221. b	222. a	223. a	224. a	225. d	226. a	

227. Deficiency of vasopressin leads to:
a. Decreased urine output
b. Hyperkalemia
c. Increased sodium loss
d. Inability of the kidney to concentrating urine

228. Renin is secreted by:
a. Tubular cells
b. Macula densa
c. JG cells
d. All of the above

229. Under effect of vasopressin, greatest fraction of filtered water is reabsorbed in:
a. PCT
b. DCT
c. Loop of Henle
d. Collecting duct

230. Inulin clearance closely resembles:
a. PAH clearance
b. Creatinine clearance
c. Renal plasma flow
d. GFR

231. Erythropoietin is secreted by:
a. Interstitial cells of kidney
b. Extraglomerular mesangial cells
c. Macula densa
d. Renal tubular epithelial cells

232. Secretion of renin is by:
a. Tubular cells
b. Macula densa
c. JG cells
d. None of the above

233. Main site of bicarbonate reabsorption is:
a. PCT
b. Loop of Henle
c. Cortical collecting duct
d. Medullary collecting duct

234. Factor which increases renal urinary concentrating ability:
a. Increase in GFR
b. Increase in RBF
c. Contraction in ECF volume
d. Reduction in medullary hyperosmolarity

235. Ureteric peristalsis is as a result of:
a. Parasympathetic activity
b. Sympathetic activity
c. Both parasympathetic & sympathetic activity
d. Pacemaker activity of the smooth muscle cells in renal pelvis

236. 100% filtration coefficient is seen in:
a. Inulin
b. Creatinine
c. Albumin
d. Urea

237. Maximum absorption of water occurs in:
a. PCT
b. DCT
c. Collecting duct
d. Loop of Henle

238. True regarding chemical structure of ADH:
a. Octapeptide
b. Nonapeptide
c. Hexapeptide
d. Pentapeptide

239. Part of nephron impermeable to water:
a. PCT
b. Thick ascending loop of Henle
c. Thin descending loop of Henle
d. Collecting ducts

240. Secreted actively in collecting duct:
a. Potassium ion
b. Hydrogen ion
c. Sodium ion
d. Magnesium ion

241. True for atrial natriuretic peptide is:
a. Increases blood volume
b. Inhibit reabsorption of sodium by the collecting ducts
c. Secreted by kidneys
d. All of the above

242. Completely absorbed from proximal tubules:
a. Potassium
b. Sodium
c. Bicarbonate
d. Glucose

243. Renin action:
a. Converts angiotensinogen to angiotensin-I
b. Converts angiotensin-I to angiotensin-II
c. Converts angiotensin-II to angiotensin-III
d. All of the above

244. ANP acts at:
a. PCT
b. Collecting duct
c. DCT
d. Loop of Henle

245. Renin secretion is inhibited by:
a. Cardiac failure
b. Hemorrhage
c. ANP
d. Diuretics

246. Renal plasma flow value is:
a. 350 mL/min
b. 650 mL/min
c. 950 mL/min
d. 1250 mL/min

247. Erythropoietin is secreted mainly by:
a. Kidney
b. Liver
c. Brain
d. RBC

248. Kidney secretes:
a. Erythropoietin
b. Angiotensin I
c. Angiotensin II
d. Thrombodulin

249. Normal glomerular capillary pressure:
a. 15
b. 25
c. 35
d. 45

Answers

227. d	**228.** c	**229.** a	**230.** d	**231.** d	**232.** c	**233.** a	**234.** c
235. d	**236.** a	**237.** a	**238.** b	**239.** b	**240.** b	**241.** b	**242.** d
243. a	**244.** b	**245.** c	**246.** b	**247.** a	**248.** a	**249.** d	

JAYPEE BROTHERS

250. Substance which is NOT absorbed in the loop of Henle:
a. K^+ b. Urea
c. Cl^- d. Na^+

251. Reabsorption of water is maximum in:
a. PCT b. DCT
c. Collecting duct d. Loop of Henle

252. Glomerular filtration rate increases if:
a. Increased plasma oncotic pressure
b. Decreased glomerular hydrostatic pressure
c. Increased renal blood flow
d. Increased tubular hydrostatic pressure

253. Substance used to measure renal perfusion:
a. Inulin b. PAH
c. Creatinine d. Mannitol

254. True regarding water absorption in tubules:
a. Majority of facultative reabsorption occurs in proximal tubule
b. Bulk of water reabsorption occurs secondary to sodium absorption
c. 25% of water is reabsorbed irrespective of water balance
d. Obligatory reabsorption is ADH dependent

255. Site of action of ADH is:
a. PCT b. Vasa recta
c. Loop of Henle d. Collecting ducts

256. What is glomerular filtration rate?
a. 100 mL/min b. 125 mL/min
c. 150 mL/min d. 175 mL/min

257. Active resorption of sodium ion occurs in:
a. Ascending loop of Henle b. Early distal tubule
c. Proximal tubule d. All of the above

258. PCT absorbs ALL EXCEPT:
a. Sodium b. Amino acids
c. Glucose d. Hydrogen ions

259. Glucose is reabsorbed at:
a. PCT b. DCT
c. Collecting duct d. All of the above

260. Maximum absorption of NaCl in proximal convoluted tubule occurs due to the effect of:
a. ADH b. Aldosterone
c. Atrial natriuretic peptide d. Angiotensin II

261. ANP acts at the:
a. Proximal tubule b. Distal tubule
c. Collecting tubule d. Henle loop

262. GFR decreases with the following:
a. Hypoproteinemia b. Hypotension
c. Hypertension d. All of the above

263. Urinary concentrating ability of kidney increases, if there is:
a. Increase in renal blood flow
b. Increase in GFR
c. Decrease in medullary hyperosmolarity
d. Contraction in extracellular fluid volume

264. Which is NOT a constituent of juxtaglomerular complex?
a. Macula densa
b. Glomerulus
c. Juxtaglomerular cells
d. Extraglomerular mesangial cells

265. Aldosterone acts chiefly on which of the following cells?
a. DCT b. PCT
c. Loop of Henle d. Glomerulus

266. Bicarbonate is most common absorbed from:
a. DCT b. Collecting duct
c. PCT d. Ascending loop of Henle

267. Which of the following is important for maintenance of osmotic gradient in renal calyx?
a. Water b. Sodium
c. Bicarbonate d. Ammonia

268. Which of the following regulates Renin-Aldosterone-angiotensin system mechanism?
a. Losartan
b. Alpha blockers
c. Aldosterone antagonists
d. Sodium potassium antagonist

269. Which of the following is FALSE regarding GFR?
a. In children, GFR depends on height
b. GFR is best estimated by creatinine clearance
c. GFR has no effect on urine formation
d. Fall in GFR by 30-40% after the age of 70 years

270. If the GFR is 720 mL/dL, what will be the renal plasma flow?
a. 3000 b. 3200
c. 3400 d. 3600

271. Which cells are found in afferent arterioles?
a. Macula densa b. Lacis cells
c. JG cells d. All of the above

272. All of the following are true for Laplace law EXCEPT:
a. P = T/R b. T = WP/R
c. P = 2T/R d. T = Pr/w

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Answers

250. b	**251.** a	**252.** c	**253.** b	**254.** b	**255.** d	**256.** b	**257.** d
258. d	**259.** a	**260.** d	**261.** c	**262.** b	**263.** d	**264.** b	**265.** a
266. c	**267.** b	**268.** a	**269.** c	**270.** d	**271.** c	**272.** b	

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