

Paper C KMU 2019

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1. The incisura or diastolic notch in the aortic pressure curve is:

- A. Due to first heart sound
- B. Indicative of cardiovascular disease
- C. Coincident with the second heart sound
- D. Absent in hypertension
- E. Felt easily in normal radial pulse

Answer: C

Hint: A blip occurs in the aortic pressure curve when the aortic valve closes which is called incisura. It is because of a short backward flow of blood immediately before closing of the aortic valve.

2. Which one of the following has got tight junctions of capillary endothelial linings

- A. Heart
- B. Kidney
- C. Liver
- D. Brain
- E. Lung

Answer: D

Hint: blood brain barrier

3. At a heart rate of about 75 beats per minute, the longest electrocardiogram interval would generally be the

- A. Duration of the P wave
- B. Duration of QRS complex
- C. P-R interval
- D. Q-T interval
- E. R-R interval

Answer: E

4. The most significant effect of parasympathetic stimulation on general circulation is

- A. Increased cardiac contractility
- B. Increased vascular compliance
- C. Increased vascular resistance
- D. Increased heart rate

E. Increased venodilation

Answer: B) Acetylcholine released by parasympathetic nervous system has no direct vasodilatory effect blood vessels. In fact Ach acts on M3 receptors on blood vessels producing and releasing NO (nitric oxide). NO causing vasodilation thus causing a fall in BP. Thus Choose B instead of E.

5. A 62 years old man with congestive heart failure (CHF) brought to pulmonology ward. The doctor said he has pulmonary edema secondary to heart failure. What will be the cause of pulmonary edema in the patient?

- A. Decreased pulmonary interstitial oncotic pressure
- B. Increased pulmonary capillary hydrostatic pressure
- C. Increased pulmonary capillary oncotic pressure
- D. Increased pulmonary interstitial hydrostatic pressure
- E. Decreased pulmonary capillary permeability

Answer: B

6. A patient had an ECG at the local emergency department. The attending physician stated that the patient had an AV nodal rhythm. What is likely heart rate?

- A. 30/min
- B. 50/min
- C. 65/min
- D. 75/min
- E. 85/min

Answer B

Hint: intrinsic rhythmical discharge rate of AV node is 40-60 times/min
While that of purkinji fibers is 15-40 times/min

7. Which phase of cardiac cycle follows immediately after the beginning of the QRS wave?

- A. Isovolumic relaxation
- B. Ventricular ejection
- C. Atrial systole
- D. Diastasis
- E. Isovolumic contraction

Answer: E

Hint: QRS complex represent ventricular depolarization so after which ventricular contraction begins

8. Sudden change in the resting membrane potential which is propagated is called action potential. Which one of the following is important for initiation of depolarization in the ventricular muscle fibers?

- A. Ca^{+2} ions in the T tubules
- B. Formation of plateau due to Ca^{+2} ions influx

- C. K⁺ ions coming out of the cell rapidly
- D. Rapid entry of Na⁺ ions into the cell
- E. Sufficient potassium ions inside the cell

Answer: D

9. A male patient aged 50 years visited OPD for checkup. He was on beta blocker for treatment of his hypertension. ECG was recorded which shows 1st degree AV block. 1st degree AV block is characterized by

- A. 2 P wave follow by 1 QRS complex
- B. 3 P wave follow by 1 QRS complex
- C. complete AV dissociation
- D. P-R interval of more than 0.2 sec
- E. Wenckebach's phenomenon

Answer: D

10. SA node is pacemaker of heart because it has high rate of discharge. If the pacemaker of heart is set in perkinji fibers what would be the heart rate then ..

- A. 10-14 bpm
- B. 15-30 bpm
- C. 40-60 bpm
- D. 70-80 bpm
- E. 100-150 bpm

Answer; B

Hint: intrinsic rythmical discharge rate of AV node is 40-60 times/min while that of purkinji fibres is 15-40 times/min

11. A patient brought to emergency after accident had suffer severe blood loss. His BP was 70/40 and his pulse rate was 120/mint. Which of following compensatory responses to hemorrhage occurs for shortest time frame?

- A. baroreceptor mediated sympathetic response
- B. increase in angiotensin II
- C. increase in ADH
- D. increase in aldosterone secretion
- E. Interstitial fluid shift into plasma

Answer; A

Hint: as BP is very low after severe hemorrhage. There are two mechanisms for BP to rise again as compensatory responses. One is the fast neurally mediated baroreceptor mechanism and the other is the slower hormonally mediated renin-angiotensin aldosterone mechanism.

12. Ist year medical student recorded his resting BP 110/70 mmHg and then begin to exercise strenuously. After 10 mints of exercise he checked his BP which was 140/65 mmHg. His pulse pressure was increase from 40 to 74 mmHg. Which of following decreases during strenuous exercise?

- a. Cardiac output
- b. heart rate
- c. Stroke volume
- d. total peripheral resistance
- e. venous return

Answer: d

Summary of Effects of Exercise:

Parameter	Effect
Heart rate	↑↑
Stroke volume	↑
Cardiac output	↑↑
Arterial pressure	↑ (slight)
Pulse pressure	↑ (due to increased stroke volume)
TPR	↓↓ (due to vasodilation of skeletal muscle beds)
AV O ₂ difference	↑↑ (due to increased O ₂ consumption)

AV = arteriovenous; TPR = total peripheral resistance.

13. A diabetic patient with autonomic neuropathy complained of frequent episodes of dizziness while standing up from supine position. This is called Postural hypotension. Fall in cardiac output when a person changes his posture from lying down to standing condition is explained by which of the following

- a. Fick's principle
- b. Frank Starling's law
- c. Ohm's law
- d. Poiseuille's law
- e. Reynold's principle

Answer; B

14. Sana is 26 years old girl. She is used to taking salts regularly. She was advised by her Physician to reduce the salt intake. How does reducing salt intake, help prevent high blood pressure?

- a. allow vessels to relax
- b. Help in digestion
- c. Helps in keeping the heart rate steady
- d. rises level of HDL(good) cholesterol
- e. reduces fluid buildup in the body

Answer; E)

Explanation: High salts cause the renal tubules to reabsorb more water raising extracellular fluid volume. In the long run ultimately leading to raising the blood pressure called primary or Essential Hypertension. High Sodium (Na) level causes the loss of calcium into the renal tubules.

Thus raising the tubular fluid calcium helping in kidney Stone formation .Thus in a patient with history renal stones a low level of sodium intake is recommended.

15. Cardiac output usually varies with age, gender, weight and height. Which of following is correct statement regarding cardiac index?

- a. it is volume of blood per contraction of ventricle
- b. it is cardiac output /m² of body surface area
- c. it is usually high in people having huge body
- d. it is inversely proportional to cardiac output
- e. It is increases with the advancing age

Answer; B

Cardiac index= cardiac output/body surface area

16. A 70 years old male patient was brought to CCU with cardiac arrest. Doctors started to resuscitate him and finally succeeded. What is the first step during the Excitation contraction coupling of the heart muscles?

- A. Calcium attaches to Ryanodine receptors
- B. Calcium moves out of the cytosol of the myocytes
- C. Contraction of the sarcomeres occur
- D. Opening of voltage gated calcium channels on the membrane of T tubules
- E. Opening of calcium pumps on the Sarcoplasmic reticulum

Answer; D

17. A patient was diagnosed as a case of heart failure has raised jugular venous pulse. JVP indicates pressure in which of the following?

- A. Aorta
- B. Left ventricle
- C. Right atrium
- D. Superior vena cava
- E. Pulmonary artery

Answer: C

18. In myocardial ischemia, what abnormal change would you expect to see in the ECG of this patient?

- A. Prolongation
- B. Small Q wave
- C. Tall and tented T wave
- D. Inversion of T wave
- E. Flattening of T wave

Answer; D

Hint; T wave inversion + ST depression are known as ischemic changes.

Tall and tented T wave occurs in hyperkalemia.

19. An increase in arteriolar resistance, without a change in any other component of CVS, will produce?

- A. A decrease in total Peripheral resistance
- B. An increase in capillary filtration
- C. An increase in arterial pressure
- D. A decrease in afterload
- E. A decrease in afterload

Answer: C

Hint: as Blood flow, $Q=P/R$
so if blood flow is constant then
R is directly proportional to P

20. During anaphylactic shock vasodilation is produced by the release of

- A. Bradykinin
- B. Histamine
- C. Nitric oxide
- D. ANP (atrial natriuretic peptide)
- E. Adenosine

Answer: B

HINT: in anaphylactic shock antigen-antibody reaction produces histamine and slow reacting substance of anaphylaxis which causes increased vascular permeability and increased vascular capacity.

21. A patient is presented with tall T wave on ECG findings. Which of the following is the most probable cause of abnormal ECG finding in this case?

- A. Hyperkalemia
- B. Hypokalemia
- C. Hypercalcemia
- D. Hypocalcemia
- E. Hyponatremia

Answer: A

22. Which of the following is most frequent cause of decreased coronary blood flow in patients with ischemic heart disease?

- A. Increased adenosine release
- B. Atherosclerosis
- C. Coronary artery spasm
- D. Increased sympathetic tone of the coronary arteries
- E. Occlusion of the coronary sinus

Answer: B)

With the ongoing slow changes in main arterial supply of coronary arteries due to atherosclerosis the collateral channels started to establish efficiently but as atherosclerosis progresses, newly formed collateral channels are also affected causing ischemia

23. A 20 years old man has bled in a road accident. In casualty the doctor on duty noted his BP 100/65 mmHg, pulse 108/min with low volume and he was sweating. His sweating is due to

- A. Cushing's reaction
- B. Brain bridge reflex
- C. Sympathetic stimulation
- D. Vagal stimulation
- E. Hepatojugular reflex

Answer: C) Sympathetic stimulation.

Hint: Due to low BP Sympathetic system also stimulates the sweat glands and causing sweating

24. A person may feel vertigo when he suddenly stands up from a lying position. Baroreceptors are working for regulation of arterial blood pressure in this situation. If the mean arterial pressure in the carotid arteries begin to fall

- A. The aortic Baroreceptor firing rates increases
- B. The carotid Baroreceptors firing rates decrease
- C. The Sympathetic activity to the heart decreases
- D. The parasympathetic activity to the SA node increases
- E. Systolic blood pressure will be decreasing

Answer: B

25. Work performed by the left ventricle is substantially greater than that performed by the right ventricle largely as a result of differences in:

- A. Stroke volume
- B. Blood volume flow
- C. Systemic arterial pressure
- D. Efficiency of myocardial contraction
- E. Ventricular filling

Answer: C

Hint: right ventricle work output is normally about 1/6th of the work output by the left ventricle because of the six fold difference in systolic pressures that the two ventricles pump.

26. The following is the data obtained from a patient:

End diastolic volume=120 ml

End systolic volume= 20 ml

Heart rate= 80 bpm

What will be the stroke volume of this patient?

- A. 50 ml
- B. 100 ml
- C. 150 ml
- D. 200 ml
- E. 250 ml

Answer: B

Stroke volume=end diastolic volume-end systolic volume

27. A patient was brought to casualty after a road accident. Due excessive bleeding he had hypotension and very weak pulse. He was determined to be in hypovolemic shock. What will you do first, if this patient is in non-progressive stage of shock?

- A. Arrange an ECG
- B. Advise an X-ray first
- C. Wait for his all reports
- D. Infusion of plasma expanders
- E. Shift the patient to another hospital

Answer: D

28. An increase in blood volume will cause

- A. An increase in ADH
- B. A decrease in Na⁺ excretion in the urine
- C. A decrease in renin secretion
- D. An increased secretion of angiotensin II
- E. An increase secretion of Aldosterone

Answer: C

Hint: through feedback mechanism kidney will decrease its renin secretion

29. Which event occurs after the first heart sound and before the second heart sound

- A. Atrial contraction
- B. Closure of the atrioventricular (AV) valves
- C. P wave of the ECG
- D. Rapid filling of the ventricles
- E. Ventricular systolic ejection

Answer: E

30. Which of the following substances crosses the capillary walls primarily through the water filled clefts between the endothelial cells?

- A. O₂
- B. CO₂
- C. CO
- D. Glucose
- E. H₂O₂

Answer: glucose

Hint: because it is water soluble and can't pass through the endothelial membranes directly. O₂, CO₂ and CO are lipophilic.

31. List below are the hydrostatic and oncotic pressures within a microcirculatory bed:

Plasma colloid osmotic pressure =25 mmHg

Capillary hydrostatic pressure =25 mmHg

Venous hydrostatic pressure =5 mmHg

Arterial pressure =80 mmHg

Interstitial fluid hydrostatic pressure =-5 mmHg

Interstitial colloid osmotic pressure =5 mmHg

Capillary filtration coefficient =15 ml/min/mmHg

What is the rate of net fluid movement across the capillary wall?

- A. 125 ml/min
- B. 150 ml/min
- C. 100 ml/min
- D. 250 ml/min
- E. 200 ml/min

Answer: b

Explanation: Net fluid movement= capillary filtration coefficient * NFP

NFP=total outward forces-total inward forces

So NFP= (25+5+5)-25=35-25=10

Net fluid movt=10*15=150

32. Which of the following conditions causes pulse pressure to increase

- A. Tachycardia
- B. Hypertension
- C. Hemorrhage
- D. Aortic stenosis
- E. Myocardial infarction

Answer:B

33. Calculate the heart rate if cardiac output is 5200 ml and stroke volume is 65 ml/beat

- A. 65 beats/min
- B. 75 beats/min
- C. 80 beats/min
- D. 72 beats/min
- E. 84 beats/min

Ans: C

Hint: cardiac output=stroke volume x heart rate

34. Both ADH and Aldosterone acts to

- A. Increase urine volume
- B. Increase blood volume and blood pressure
- C. Decrease total peripheral resistance
- D. Decrease venous return
- E. Decrease thirst sensation

Answer: B

35. A baby born at 30 weeks of period of gestation started nasal flating, tachycardia and Intercostal recession just after birth. On examination he had cyanosis and was grunting. Which of the following be decreased in his blood?

- A. Lecithin sphingomyelin ratio
- B. Arterial partial pressure of CO₂
- C. Arterial partial pressure of nitrogen
- D. Random blood sugar
- E. Serum bilirubin

Answer: A

Hint: this baby suffers from neonatal respiratory distress syndrome. This is a disease of newborn especially premature babies, who do not secrete adequate quantities of surfactant. Premature birth and maternal diabetes are risk factors. A Lecithin sphingomyelin ratio of 2.0 or greater indicates lung maturity and a minimal risk for RDS.

36. A 55 years man sitting quietly in his lounge watching TV uses which of the following muscles during respiration

- A. Diaphragm
- B. External Intercostal
- C. Internal intercostal
- D. Sternocleidomastoid
- E. Rectus abdominis

Answer; A

37. A 76 years old patient with emphysema presents for his annual pulmonary function testing to assess the progression of his disease. As a result of alveolar septal damage in emphysema, there is a decrease in?

- A. Airway resistance
- B. Alveolar dead space
- C. Diffusing capacity
- D. Lung compliance
- E. Total lung capacity

Answer: C

38. The basic rhythm of respiration is generated by neurons located in the medulla. Which of the following limits the duration of inspiration and increases respiratory rate?

- A. Apneustic center
- B. Dorsal respiratory group
- C. Nucleus of tractus solitaries
- D. Pneumotaxic center
- E. Ventral respiratory group

Answer: D

Location: upper pons

39. A 140 lb woman would have approximately how much dead space in her lungs?

- A. 140 ml
- B. 70 ml
- C. 280 ml

- D. 35 ml
- E. 80 ml

Answer: A

Hint: 1ml of dead space for every pound of body weight

40. If the lungs were punctured, what will happen?

- A. The lungs would collapse on the side of the puncture
- B. both the lung and chest wall would collapse
- C. The relaxation pressure of the chest wall would increase until it surpassed the atmospheric pressure
- D. The relaxation pressure of the chest wall would increase, but stop before it reached atmospheric pressure
- E. The lung will hyper inflate

Answer: A

41) A medical student while performing his spirometry practical inspires and expires to maximum through spirometer. What is the volume of air left in his lung after maximum expiration?

- a) Tidal volume
- b) Inspiratory reserve volume
- c) Expiratory reserve volume
- d) Residual volume
- e) Forced expiratory volume

Answer: D

42) A 50 yrs. old cement factory worker visited a pulmonologist due to chronic cough. The pulmonologist diagnosed him asbestosis.

Which of the following value will increase in his pulmonary function test?

- a. Vital capacity
- b. Forced vital capacity
- c. Forced expiratory volume in 1 sec.
- d. Total lung capacity
- e. FEV1/FVC

Answer: E

Hint: In obstructive pulmonary disease, such as asthma and COPD, both FEV1 and FVC are reduced and but FEV1 IS REDUCED MORE, so the ratio FEV1/FVC is decreased.

In restrictive lung disease such as fibrosis and asbestosis, both FEV1 and FVC are reduced but FEV1 REDUCES LESS, so ratio FEV1/FVC is increased.

43) Which of following causes shift of O₂-Hb dissociation curve to left

- a. Decrease in temperature
- b. Decrease in PH
- c. Increase 2-3 DPG
- d. Increase in H ions

e. Decrease in O₂ conc.

Answer: A

44) Highest diffusing capacity across respiratory membrane and in body fluids is.

- a. Helium
- b. Carbon dioxide
- c. Sulphur dioxide
- d. Nitrogen
- e. Oxygen

Answer: B

45) In an average young man, which one of the following is the average diffusing capacity for Oxygen under resting conditions?

- a) 18ml/min/mmHg
- b) 19ml/min/mmHg
- c) 20ml/min/mmHg
- d) 21ml/min/mmHg
- e) 22ml/min/mmHg

Answer: D

46) A young healthy man is sitting in an upright position. Which of the following is true at the apex of his lungs?

- a) Both perfusion and ventilation are high
- b) Both perfusion and ventilation are low
- c) Perfusion is more than ventilation
- d) Perfusion and ventilation are both normal
- e) Ventilation is more than perfusion

Answer: E

47) A patient of COPD with severe cyanosis and hyperventilation was taken to emergency. Which chemical has a direct effect on the central chemosensitive area to increase ventilation?

- a) Decrease in the level of CSF H⁺ ions
- b) Decrease in the level of arterial PO₂
- c) Increase in the level of arterial PCO₂
- d) Increase in the level of CSF H⁺ ions
- e) Increase in the level of CSF PCO₂

Answer: D

48) A patient has a dead space of 150 ml. FRC of 4 litres, TV 650 ml (Tidal volume), ERV of 1.5 litre, Total lung capacity of 6L and respiratory rate of 12 breath/min. Calculate alveolar ventilation.

- a) 5 L/min
- b) 7.5 L/min
- c) 6.0 L/min
- d) 9.0 L/min

e) 10 L/min

Answer: C

Hint: Alveolar Ventilation, $V_A = (V_T - V_D) \times \text{breaths/min}$

$V_A = (650 - 150 \text{ ml}) \times 12 = 0.5 \text{ L} \times 12 = 6.0 \text{ L/min}$

49) Each gram of hemoglobin can bind with maximum of how much oxygen

a) 2.4ml of oxygen

b) 5.1ml of oxygen

c) 1.34ml of oxygen

d) 4ml of oxygen

e) 5.0 ml of oxygen

Answer: C

50) The type of cells that secrete surfactant are

a) Alveolar macrophages

b) Alveolar cells

c) Type I pneumocytes

d) Type II pneumocytes

e) Basement membrane

Answer: D

51) A 50 years old chronic smoker visits a chest OPD complaining of respiratory distress.

Investigations show that in his lungs due to destruction of alveolar walls there are many areas with adequate alveolar ventilation (V_a), but zero perfusion (Q). In such areas the Ventilation-Perfusion ratio V_a/Q will be:

a) Infinity

b) Low

c) Normal

d) Unstable

e) Zero

Answer: A

52) Asthma occurs as a result of:

a) Decrease Elasticity of lungs

b) Degradation of alveolar walls

c) Spasmodic contraction of smooth muscles of bronchioles

d) Damage to epithelium of bronchioles

e) Damage to respiratory center

Answer: C

53) A 20 year-old-man came to emergency department with severe dyspnea, his chest x-ray showed a 55% pneumothorax of the right lung. What changes in lung function that occurs as a result of a pneumothorax is

a) The intrapleural pressure in the affected area equals to atmospheric pressure

b) The chest wall on the affected side recoils inward

- c) There is hyperinflation of the affected lung
- d) The V/Q ratio on the affected side increases above normal
- e) The mediastinum shifts further to the right with each inspiration

Answer: A

54) A 5-month-old infant is admitted to the hospital for evaluation because of repeated episodes of sleep apnea. During a ventilator response test, his ventilation did not increase when PaCo₂ was increased, but decreased during hyperoxia. Which of the following is the most likely cause of this infant's apnea?

- a) Bronchospasm
- b) Diaphragmatic fatigue
- c) Decreased irritant receptor sensitivity
- d) Peripheral chemoreceptor hypersensitivity
- e) Dysfunctional central chemoreceptor

Answer: E

55) Which of the following structures lie within middle mediastinum?

- a. Parietal pleura
- b. Visceral pleura
- c. Pericardium
- d. Trachea
- e. Esophagus

Answer: C

56) Which of the following layer of pericardium is also called epicardium

- a. Fibrous pericardium
- b. Serous pericardium
- c. Parital pericardium
- d. Visceral pericardium
- e. Pleural pericardium

Answer: D

57) The parietal pericardium

- a. Lines the thoracic wall
- b. Lines the visceral pericardiumn
- c. Covers the fibrous pericardium
- d. Lines fibrous pericardium
- e. Form the epicardium

Answer: D

58) On x-ray right border of heart is formed by

- a. Left atrium
- b. Left atrium and aorta
- c. Left atrium and left ventricle

- d. Right atrium and right ventricle
- e. Right atrium and superior vena cava

Answer: E

Hint: this question is from radiographic anatomy so don't confuse it with right heart border which is formed by right atrium only.

59) The anterior surface of heart is mainly formed by the right atrium and the

- a. Right ventricle
- b. Left ventricle
- c. Right auricle
- d. Left auricle
- e. Left atrium

Answer: A

60) Right Posterior intercostal vein drains into:

- a. Azygous vein
- b. Inferior vena cava
- c. Internal thoracic vein
- d. Portal vein
- e. Subclavian vein

Answer: A

61) The right border of the heart is mainly formed by the

- a. Right auricle
- b. Left auricle
- c. Right ventricle
- d. Right atrium
- e. Left atrium

Answer: D

62) Sternal angle lies at the level of:

- a. 2nd costal cartilage
- b. 3rd costal cartilage
- c. 4th costal cartilage
- d. 5th costal cartilage
- e. 6th costal cartilage

Answer: A

63) The sinuatrial node is located in the wall of the

- a. Right ventricle
- b. Superior vena cava
- c. Inferior vena cava
- d. Right atrium

e. Left atrium

Answer: D

64) The cervical rib can exert pressure on which one of the following structures?

- a. The wall of axillary artery
- b. The wall of subclavian artery
- c. Upper trunk of brachial plexus
- d. Middle trunk of brachial plexus
- e. Proximal part of lateral cord

Answer: B

65. Regarding arrangement of neurovascular bundle in intercostal space, which one of the following structure lie inferiorly in the intercostal space?

- a) Posterior intercostal vein
- b) Posterior intercostal artery
- c) The intercostal nerve
- d) Anterior intercostal vein
- e) Anterior intercostal artery

Answer: C

66. A 5 year old child comes to emergency department with complaint of difficulty in breathing. On history it was revealed that he has swallowed foreign body. On radiological scan the foreign object will be most probably seen in which lobe of lung :

- a) Left lower lobe
- b) Left upper lobe
- c) Right lower lobe
- d) Right middle lobe
- e) Right upper lobe

Answer: C

67. The caval opening lies anterior to the body of the

- a) 12th thoracic vertebra
- b) 10th thoracic vertebra
- c) 8th thoracic vertebra
- d) 6th thoracic vertebra
- e) 4th thoracic vertebra

Answer: C

68. The right vagus nerve passes through

- A) the caval opening in diaphragm
- B) Esophageal opening in diaphragm
- C) Aortic opening in the diaphragm
- D) right crus of the diaphragm
- E) Left Crus of the diaphragm

Answer: B

69. Which lobe of the lungs has only two bronchopulmonary segments?

- A) Right upper
- B) Right Lower
- C) Right middle
- D) left upper
- E) left lower

Answer: C

70. The highest point of cervical dome of the pleura extends up into the neck about

- A) 2.5 cm above clavicle
- B) 3.5 cm above clavicle
- C) 4.5 cm above clavicle
- D) 5.5 cm above clavicle
- E) 6.5 cm above clavicle

Answer: A

71. The sternal angle lie at the level of

- A. Esophageal opening in diaphragm
- B. Aortic opening in diaphragm
- C. lower end of trachea
- D. lower end of esophagus
- E. Dome of diaphragm

Answer: C

72. The structure arches over the root of the right lung is

- A. Azygous vein
- B. Arch of the aorta
- C. Inferior Vena Cava
- D. Superior Vena Cava
- E. Trachea

Answer: A

73. The vertical length of the thoracic cavity is increased by contraction of

- A. Thoracoabdominal diaphragm
- B. External intercostal muscles
- C. Internal intercostal muscles
- D. Pectoralis major muscle
- E. Pectoralis minor muscle

Answer: A

74. Regarding the nerve supply of visceral pleura, it is supplied by the

- A. Autonomic nerves

- B. Phrenic nerves
- C. Intercostal nerves
- D. Brachial plexus
- E. Cervical nerves

Answer: A

75. The pleural space normally contain about

- A. 5-10 ml of fluid
- B. 30-40 ml of fluid
- C. 50-60 ml of fluid
- D. 70-80 ml of fluid
- E. 90-100 ml of fluid

Answer: A

76. Serum acid phosphatase level increases in

- A. Wilson's disease
- B. Myocardial infarction
- C. Carcinoma of prostate
- D. Liver disease
- E. Stroke

Answer: C

77. Enzymes that transfer electron directly to the molecular oxygen are known as

- A. Anaerobic dehydrogenases
- B. Peroxidases
- C. Catalases
- D. Oxygenases
- E. Oxidases

Answer: E

Hint: Oxidases catalyze the transfer of two electrons from a donor to oxygen, producing hydrogen peroxide. Oxygenases catalyze the incorporation of oxygen into a substrate.

78. An inactive enzyme without cofactor is known as

- A. Zymogen
- B. Apoenzyme
- C. Holoenzyme
- D. Prosthetic group
- E. Coenzyme

Answer: B

79. Which of the following is not a zymogen?

- A. Trypsinogen
- B. Chymotrypsinogen
- C. Pepsinogen

- D. Pepsin
- E. Angiotensinogen

Answer: D

Hint: An inactive substance which is converted into an enzyme when activated by another enzyme.

80. The concentration of the substrate at which the velocity of enzyme reaction is half of the maximum velocity is called:

- A. K_m/n
- B. K_{cat}/K_m
- C. K_m/n
- D. K_s
- E. K_m

Answer: E

81. Which of the following is the right sequence of enzyme action?

- A. Collision → kinetic energy → transition state → reaction
- B. Kinetic energy → collision → transition state → reaction
- C. Collision → transition state → kinetic energy → reaction
- D. transition state → collision → kinetic energy → reaction
- E. transition state → kinetic energy → collision → reaction

Answer: B

82. in un-competitive inhibition:

- A. K_m increases, V_{max} decreases
- B. K_m decreases, V_{max} decreases
- C. k_m increases, V_{max} increases
- D. k_m decreases, V_{max} increases
- e. K_m unchanged, V_{max} unchanged

Answer: B

83. the correct mathematical form of michaelis-menton equation:

- A. $V_o = (K_m \times [s]) / (V_{max} + [s])$
- B. $V_{max} = (V_o \times [s]) / (K_m + [s])$
- C. $V_o = (V_{max} \times [s]) / (K_m + [S])$
- D. $V_{max} = (V_o \times [s]) / (K_m)$
- E. $V_o = (V_{max}) / (K_m + [s])$

Answer:

Quickly
understand / **Michaelis - Menten**
equation

$$V_o = \frac{V_{\max} [S]}{K_m + [S]}$$

84. A 60 years old, diabetic and hypertensive male patient presents to the hospital with chest pain. He is diagnosed as having coronary heart disease. His lipid profile shows Triglyceride 300 mg/dL (normal <150), LDL 220 mg/dL (normal <170), HDL 25 mg/dL (normal >55) and Total cholesterol 305 mg/dL normal 150-200). Abnormality of which of the following lipoproteins is most associated with atherogenesis and coronary heart disease?

- A. Chylomicrons
- B. HDL
- C. LDL
- D. Total cholesterol
- E. Triglycerides

Answer: C

85. Which of the following functions is served by cholesterol in plasma membrane?

- A. Leads to fluidity of plasma membrane
- B. Leads to rigidity of the plasma membrane
- C. Leads to synthesis of bile acids and bile salts
- D. Leads to the synthesis of steroid hormones
- E. Leads to synthesis of vitamin D

Answer: B

86. Among the following, the compound that is not involved in cell signaling is?

- A. Acyl carnitines
- B. Phosphatidylinositol phosphate
- C. Prostaglandins
- D. Sphingosine-1 phosphate
- E. Estrogen

Answer: A

87. An oil which contains cyclic fatty acids and once used in the treatment of leprosy is?

- A. Elaidic acid
- B. Rape seed oil
- C. Lanoline
- D. Chaulmoogric oil
- E. Mustard oil

Answer: D

88. Which of the following is known as good cholesterol?

- A. LDL
- B. VLDL
- C. Palmitic acid
- D. HDL
- E. Chylomicrons

Answer: D

89. The number of milliliters of 0.1N KOH required to neutralize the insoluble fatty acids from 5 gm of fat is called

- A. Acid number
- B. Acetyl number
- C. Halogenation
- D. Polenske number
- E. Rancidity

Answer: D

Hint: The Polenske value is an indicator of how much volatile fatty acid can be extracted from fat through saponification. It is equal to the number of milliliters of 0.1 normal alkali solution necessary for the neutralization of the water-insoluble volatile fatty acids distilled and filtered from 5 grams of a given saponified fat. (The hydroxide solution used in such a titration is typically made from sodium hydroxide, potassium hydroxide, or barium hydroxide.)

Source: Wikipedia

90. Which out of the following is Omega-3 fatty acid?

- A. Arachidonic acid
- B. α -linolenic acid
- C. Linoleic acid
- D. Oleic acid
- E. Palmitoleic acid

Answer: B

91. Gangliosides come under class

- A. Triglycerides
- B. Waxes
- C. Shingomyelins
- D. Phosphoglycerides
- E. Glycolipids

Answer: E

92. Cholesterol is solid at room temperature and melts at

- A. 70°C

Paper C

- B. 150°C
- C. 50°C
- D. 250°C
- E. 15°C

Answer: B

93. Which of the following is NOT a characteristic of white adipose tissue?

- A. Few mitochondria
- B. Uniocular
- C. Thermogenic
- D. Less vascularized
- E. Insulation

Answer: C

94. The lipid that act as a surfactant is

- A. Dipalmitoyl phosphatidylethanol amine
- B. Dipalmitoyl phospholipid
- C. Phosphatidyl serine
- D. Plasmalogen
- E. Sphingomyelin

Answer: B

95. Chain elongation of fatty acids occurring in mammalian liver takes place in which of the following sub cellular fractions of cells

- A. Microsomes
- B. Ribosomes
- C. Lysosomes
- D. Nucleus
- E. Cytosol

Answer: E

Fatty acid elongation occurs in three cellular compartments: the cytosol, mitochondria, and endoplasmic reticulum.

96. The most common cause of gall stones among the following is

- A. Vitamin D
- B. Chylomicron
- C. Cholesterol
- D. Bile salts
- E. Oxalates

Answer: C

97. Visible fat is present in

- A. Milk
- B. Pulses

- C. Coconut oil
- D. Egg yolk
- E. Lychees

Answer: C

Hint: Visible fats are the ones which you see in the form of butter, cooking oils (vegetable oils), ghee, hydrogenated fat (dalda), margarine, lard etc. Invisible fat is hidden fat which is inherently present in the food in varying amounts such as milk, egg, almonds, walnut, peanut, flax seed, sesame seed, wheat, spices, avocado etc.

Source: google

Development of Cardiovascular system

98. When only heart lies on the right side of the thorax instead of the left. This abnormality is called

- A. Transposition of great vessels
- B. Situs inversus
- C. Dextrocardia
- D. Tetralogy of fallot
- E. Ectopia cardis

Answer: C

99. Patent foramen ovale is mainly the abnormality in the development of

- A. Atrial septum
- B. Interventricular septum
- C. Right atrioventricular septum
- D. Left atrioventricular septum
- E. septum formation in truncus arteriosus

Answer: A

100. Fossa ovalis is mainly related to development of which of the following structures in the heart?

- A. Interventricular septum
- B. Atrial septum
- C. Atrioventricular septum
- D. Pulmonary valves
- E. Aortic valves

Answer: B

101. Ductus arteriosus lies between which of the following structures

- A. Right and left atria
- B. Right and left ventricles
- C. Pulmonary trunk and aorta
- D. Right atrium and right ventricles
- E. Left atrium and left ventricle

Answer: C

102. Ductus venosus is present in which of the following structures?

- A. Pancreas
- B. Liver
- C. Kidney
- D. Lungs
- E. Spleen

Answer: B

Development of Respiratory System

103. The lining epithelium of trachea is developed from

- A. Ectoderm
- B. Endoderm
- C. Mesoderm
- D. Neural crests
- E. Hypoblast

Answer: B

104. The respiratory diverticulum arises from which of the following structures?

- A. Esophagus
- B. Neural tube
- C. Stomach
- D. Duodenum
- E. Heart tube

Answer: A

105. The surfactant mainly prevents the collapse of

- A. Trachea
- B. Bronchi
- C. Alveoli
- D. Capillaries
- E. All of them

Answer: C

Histology of Cardiovascular system

106. The Intercalated discs and branched fibres are present in the

- A. Deltoid muscle
- B. Smooth muscle
- C. Heart muscle
- D. Intercostal muscles
- E. Biceps muscle

Answer: C

107. The blood vessels which help in providing nutrition to the tissues are called

- A. Elastic arteries
- B. Muscular arteries
- C. Arterioles
- D. Capillaries
- E. Venules

Answer: D

108. Which of the following vessels have comparatively thick tunica adventitia

- A. Brachial artery
- B. Ulnar artery
- C. Radial artery
- D. Femoral artery
- E. Femoral vein

Answer: E

109. Which of the following vessels have no smooth muscles?

- A. Capillaries
- B. Venules
- C. Arterioles
- D. Anterior tibial artery
- E. Posterior tibial artery

Answer: A

Histology of Respiratory system

110. Alveolar type I cells are:

- A. Simple Cuboidal cells
- B. Simple squamous cells
- C. Simple columnar cells
- D. Stratified squamous cells
- E. Amoeboid, phagocytic cells

Answer: B

111. True vocal cords are covered with a

- A. Simple columnar epithelium
- B. Simple squamous epithelium
- C. Simple Cuboidal epithelium
- D. Stratified columnar epithelium
- E. Stratified squamous epithelium

Answer: E

112. The epithelium of lung alveoli is

- A. Simple columnar epithelium
- B. Simple squamous epithelium
- C. Simple Cuboidal epithelium
- D. Stratified squamous epithelium
- E. Stratified columnar epithelium

Answer: B

113. The epithelium of most of the conducting portion of respiratory tract is

- A. Pseudostratified columnar ciliated epithelium
- B. Stratified squamous keratinized epithelium
- C. Stratified squamous non-keratinized epithelium
- D. Simple squamous epithelium mainly
- E. Simple columnar epithelium

Answer: A

Minor Subjects Mcqs

Forensic medicine

114. Deaths which are not preceded or only preceded for for a short period, say a day or two by morbid symptoms are termed as?

- A. Apparent death
- B. Instantaneous death
- C. Immediate deaths
- D. Sudden deaths
- E. Unexpected deaths

Answer: D

115. During postmortem examination of an asphyxial death, the medico legal officer noted small size hemorrhages on the face and sclera of the dead body. These hemorrhages are known as?

- A. Capillary hemorrhages
- B. Petechial hemorrhages
- C. Postmortem haemorrhages
- D. Postmortem petechiae
- E. Pupura

Answer: B

Community medicine

116. Which risk factor can be modified to prevent coronary artery disease (CAD) ?

- A. Enzyme levels
- B. Genetic makeup
- C. Gender
- D. Dietary intake
- E. Vitamin D3 levels

Answer: D

117. Mr Asghar, a 46 year old, presented to the emergency department with sudden onset of shortness of breath. Symptoms began approximately 2 days before and had progressively worsened with no associated, aggravating, or relieving factors noted. He had similar attack one year back and was diagnosed as a case of COPD. Cessation of smoking at this stage comes in category of?

- A. Primordial prevention
- B. Primary prevention
- C. Secondary prevention
- D. Tertiary prevention
- E. A successful treatment of COPD

Answer: D

Pharmacology

118. Which of the following is a calcium channel blocking agent used in the treatment of hypertension?

- A. Amlodipine
- B. Clonidine
- C. Furosemide
- D. Nitroprusside
- E. Propranolol

Answer: A

Pathology

119. A 20 years old male presented to the emergency department with shortness of breath and cough in the mornings. On the physical examination he has wheeze on auscultation of his lungs. He has been using inhaler for the past two years. Complete blood picture shows increased eosinophilic count. What is the diagnosis?

- A. Asthma
- B. Emphysema
- C. Edema
- D. Pneumonia
- E. Tuberculosis

Answer: A

120. Which of the following is a non-modifiable risk factor for coronary artery disease?

Paper C

- A. Genetics
- B. Increased salt intake
- C. Lack of exercise
- D. Obesity
- E. Smoking

Answer: A

Clarification:

We as a team tried our best to make this content error free, if there are any inaccuracies that you stumble upon please contact us through messenger.

CREDITS:

Composed by:

Farhad khan, NMC

Muhammad Fawad Afridi, NMC

Correct Options Marking:

Farhad khan, NMC

Reviewed By:

Muhammad Waqas Khan, NMC

Farhan Khan, KMC

Yasar khan, NMC

Farhad Khan, NMC

Special thanks to:

Zahoor Malak, NMC

Muhammad Ahmad, KMC

Sahibzada Shah Fahad, BMC

All the followers of MED BHEAP MCQS BANK