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Physiology-RS Quizz 3

1. Which of the following is true for Zone 3 of the lung in upright position?

A. Is more likely occur at the apex of the lung
B. Blood flow occurs during systole but in diastole
C. It mainly occurs in the nondependent regions of the lung
D. Pulmonary capillary pressure is equal to alveolar pressure
E. Flow to this zone is not affected by the cardiac output

2. Pulmonary functions tests in patient diagnosed with lung fibrosis and progressive dyspnea would reveal which of the following?

A. Decreased diffusing capacity of the lung
B. Increased residual volume
C. Decreased forced expiratory volume exhaled in 1 second (FEV1)/forced vital capacity (FVC)
D. Increased lung compliance
E. Increased airway resistance

3. Which of the following occurs if the blood flow to alveolar units is totally obstructed by a pulmonary thromboembolism?

A. The V/Q ratio of the alveolus equals zero
B. The PO2 of the alveolus will be equal to that in the inspired air
C. The PO2 of the alveolus will be equal to the mixed venous PO2
D. There will be an increase in shunting (venous admixture) in the lung
E. There will be a decrease in alveolar dead space

4. A medical student prior to her final clinical skills exams becomes very anxious and increases her alveolar ventilation. Assume that the CO2 production remains unchanged, which of the following will decrease :

A. Plasma pH
B. PaO2
C. PaCO2
D. V/Q
E. Alveolar–arterial PO2 difference

5. Compression injury of the glossopharyngeal nerve during surgery to remove a lump in the neck would cause impairment of which of the following respiratory reflexes :

A. Aortic baroreceptor reflex
B. Carotid body chemoreceptor reflex
C. Hering–Breuer inflation reflex
D. Irritant airway reflex
E. Juxta pulmonary capillary (J) receptor reflex

6. Pulmonary edema in Congestive heart failure is caused by which of the following?

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

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7. The pacemaker neurons responsible for respiratory rhythm are located in which of the following regions of the brainstem?

A. Apneustic center in the pons
B. Central chemoreceptors in the medulla
C. Inspiratory neurons in the dorsal respiratory group
D. Pontine respiratory groups
E. Pre-Bötzinger complex in the ventral respiratory group

8. Blood gases analysis of a patient diagnosed with pneumonia reveal hypoxemia but not carbon dioxide retention. Which of the following would be increased in this patient?

A. Alveolar–arterial PO2 difference
B. Diffusing capacity of the lung
C. c. Lung compliance
D. d. Physiological dead space
E. e. V/Q

9. In which vascular bed does hypoxia cause vasoconstriction?
A. Coronary
B. Pulmonary
C. Cerebral
D. Muscle
E. Skin

10. Pulmonary embolism that completely blocks blood flow to left lung is likely to be associated with?

A. Ventilation/perfusion (V/Q) ratio in the left lung will be zero
B. Systemic arterial PO2 will be elevated
C. V/Q ratio in the left lung will be lower than in the right lung
D. Alveolar PO2 in the left lung will be approximately equal to the PO2 in inspired air
E. Alveolar PO2 in the right lung will be approximately equal to the PO2 in venous blood

11. Hypoxemia produces hyperventilation by a direct effect on the :

A. Phrenic nerve
B. J receptors
C. Lung stretch receptors
D. Medullary chemoreceptors
E. Carotid and aortic body chemoreceptors

12. The shift of oxyhemoglobin dissociation curve to the right is likely to cause :

A. Increased P50
B. Increased affinity of hemoglobin for O2
C. Impaired ability to unload O2 in the tissues
D. Increased O2-carrying capacity of hemoglobin
E. Decreased O2-carrying capacity of hemoglobin

ANSWERS:

1.E
2.A
3.B
4.C
5.B
6.C
7.E
8.A
9.B
10.D
11.E
12.A