Chapter 13 Quiz

1. Surfactant is composed of _____, and is secreted by Pneumocyte Type II cells, which are classified as _____ type cells. [SELECT ALL THAT APPLY]
a. cuboidal
b. glycerol
c. cholesterol & proteins
d. columnar
e. dipalmitoyl phosphatidylcholine
f. simple squamous epithelia
g. phospholipid DPPC

2. As the partial pressure gradient of a gas between alveoli and the arterial blood of the pulmonary capillaries reaches equilibrium, its diffusion rate decreases until equally negligible amounts are exchanged back and forth. This is an example of:
a. Henry's Law
b. Aerobic Dissociation
c. Diffusion-limited exchange
d. Lung diffusing capacity
e. Dalton's Law
f. Perfusion-limited exchange
g. Fick's Law
h. none of the above

3. Which of the following is NOT a volumetric measurement of gaseous capacity in the respiratory system that can be measured using a Spirometer? [SELECT ALL THAT APPLY]
a. Functional Residual Capacity (FRC)
b. Vital Capacity (VC)
c. Residual Volume (RV)
d. Total Lung Capacity (TLC)
e. Inspiratory Reserve Volume (IRV)
f. all of the above can by measured using Spirometry
g. Only VC, FRC & IRV

4. The ____ part of the Autonomic Nervous System is responsible for the dilation of the bronchi to decrease _____ and increase _____ via the _____ receptor:
a. Parasympathetic, bronchial radius, airway resistance, α_1
b. Sympathetic, viscosity, airflow, α_2
c. Parasympathetic, airflow, gas exchange, β_2
d. Sympathetic, airway resistance, airflow, β_2
e. none of the above
f. Both A & D

5. Which of the following factors does NOT depend on Hemoglobin? [SELECT ALL THAT APPLY]
a. the concentration of chemically modified O_2 in the blood
b. the number of bound diatomic oxygen possible
c. the concentration of dissolved O2 in the blood
d. the concentration of bound CO_2 in the blood
e. all of the above are dependent on Hemoglobin

6. Which is a catalyst for the reaction that allows us to transport 90% of CO_2 in the blood as a buffer?
a. H_2CO_3 carbonic acid
b. Bicarbonate catalase
c. Cl^- chloride shift
d. carbonic anhydrase
e. deoxyhemoglobin
f. none of the above

7. The primary muscle(s) used in inspiration and expiration is the _____, which is innervated by the _____ nerve(s). [SELECT ALL THAT APPLY]
a. Transversus Abdominus
b. CN X
c. C3-C5
d. Thoracic Diaphragm
e. Intercostal muscles
f. Phrenic nerve

8. Which of the following represents the distribution of pulmonary blood flow from **highest to lowest** when standing? [SELECT ALL THAT APPLY]
a. apex>body>base
b. apex<body<base
c. blood flow is uniform when standing to ensure even distribution during gas exchange
d. zone 3>zone 2>zone 1
e. zone 3<zone 2<zone 1

9. Which of the following best describes the flow of pulmonary circulation?
a. right atria->pulmonary semilunar valve->pulmonary veins->lungs->pulmonary arteries->left ventricle->aorta
b. tricuspid valve->right ventricle->pulmonary valve->pulmonary arteries->lungs->pulmonary veins->left atria
c. R. atria->mitral valve->R. ventricle->pulmonary veins->lungs->pulmonary arteries->pulmonary valve->L. atria
d. R. atria->R. ventricle->tricuspid->pulmonary arteries->lungs->pulmonary veins->bicuspid->L. ventricle->L. atria
e. none of the above

10. Which of the following is NOT true of the Fetal Respiratory System? [SELECT ALL THAT APPLY]
a. premature newborns may not produce Surfactant and must be injected with Cortisol
b. hemoglobin β subunits have lower O_2 affinity making them dependent on 2,3-BPG
c. fetal pulmonary blood flow is high due to direct connections with maternal blood flow and foramen ovale
d. fetal pulmonary vascular resistance is high due to hypoxic vasoconstriction
e. none of the above

Answer Key

1. a/c/e/g
2. f
3. a/c/d
4. d
5. a
6. d
7. c/d/f
8. d
9. b
10. b/c