

Pathophysiology Concepts Practice Test

1. Describe the symptoms associated with mitral regurgitation and their significance.
 - ☐ Symptoms include fatigue and dizziness, indicating anemia.
 - ✓ ☒ **Symptoms include shortness of breath and jugular vein distention, indicating**
 - ☐ Symptoms include cough and wheezing, indicating pulmonary issues.
 - ☐ Symptoms include chest pain and palpitations, indicating arrhythmias.
2. What is the characteristic of Stage II heart failure?
 - ☐ No limitation
 - ☐ Severe limitation with symptoms at rest
 - ☐ Moderate limitation with symptoms on less than ordinary activity
 - ✓ ☒ **Mild limitation with symptoms on exertion**
3. What is the primary purpose of measuring diffusing capacity in lung function tests?
 - ☐ To measure lung volume capacity.
 - ☐ To evaluate airway resistance.

☐ To determine oxygen saturation levels.

✓ ☒ **To assess gas exchange efficiency in the lungs.**

4. What is the primary benefit of pursed-lip breathing for patients with emphysema?
- ☐ Increases inhalation
 - ☐ Reduces coughing
 - ✓ ☒ **Improves expiration**
 - ☐ Enhances oxygen intake
5. This subtype of macrocytic anemia is due to deficiency or impairment of utilization of folate
- ☐ non-megaloblastic
 - ✓ ☒ **megaloblastic**
6. Describe the role of E. coli in urinary tract infections and why it is a common pathogen
- ☐ coli is rarely found in urinary tract infections and is not a significant pathogen
 - ✓ ☒ **coli is a common pathogen in urinary tract infections due to its ability to adhere to the urinary tract lining and its prevalence in the gastrointestinal tract**
 - ☐ coli is only found in the bloodstream and does not affect the urinary tract
 - ☐ coli is primarily responsible for respiratory infections, not urinary tract infections
7. Which of the following is a cause of vitamin B-12 deficiency?

☐ High levels of vitamin D

✓ ☒ **Absence of intrinsic factor**

☐ Increased intake of vitamin B-12

☐ Excessive absorption of vitamin B-12

8. Describe the relationship between left-sided heart failure and pulmonary edema.

☐ Left-sided heart failure has no impact on fluid levels in the lungs.

✓ ☒ **Left-sided heart failure leads to increased pressure in the pulmonary causing fluid to leak into the lungs.**

☐ Left-sided heart failure causes the lungs to produce excess mucus, leading to pulmonary edema.

☐ Left-sided heart failure decreases blood flow to the lungs, preventing fluid accumulation.

9. What type of hypersensitivity is exemplified by contact dermatitis?

✓ ☒ **Type 4 hypersensitivity**

☐ Type 1 hypersensitivity

☐ Type 3 hypersensitivity

☐ Type 2 hypersensitivity

10. If a patient with aplastic anemia presents with an MCV of 85, what does this indicate about blood cell morphology and potential treatment considerations?
- ☐ It indicates a severe deficiency in red blood cells, requiring immediate transfusion.
 - ☐ It indicates macrocytic anemia, suggesting vitamin B12 deficiency and treatment is needed.
 - ✓ ☒ **It indicates that the red blood cells are of normal size, suggesting the focus on stimulating bone marrow production rather than addressing deficiencies.**
 - ☐ It indicates microcytic anemia, suggesting iron supplementation is necessary.
11. Describe the significance of cardiac output in relation to overall cardiovascular health.
- ☐ Cardiac output is only important during exercise and has no effect at rest.
 - ☐ Cardiac output is irrelevant to cardiovascular health and only relates to heart rate.
 - ✓ ☒ **Cardiac output is crucial as it determines the amount of blood delivered to tissues, affecting oxygen and nutrient supply.**
 - ☐ Cardiac output is a measure of blood pressure in the arteries.
12. What is the definition of cardiac output?
- ✓ ☒ **The volume of blood pumped from each ventricle per minute.**
 - ☐ The amount of oxygen carried by the blood.

- ☐ The total volume of blood in the circulatory system.

☐ The pressure exerted by circulating blood on the walls of blood vessels

13. The most common cause of urinary tract obstruction is:

☐ pregnancy

☐ tumors

☐ benign prostatic hypertrophy

✓ ☒ **renal calculi**

14. A nurse instructs a client diagnosed with COPD to use pursed-lip breathing. The nurse asks the client about the advantage of this kind of breathing. The nurse answers that the main purpose is to achieve maximum exhalation.

☐ Prevent bronchial collapse

✓ ☒ **Achieve maximum exhalation**

☐ Allows air trapping

☐ Strengthen the intercostals muscle

15. Describe how pursed-lip breathing can affect a patient with a respiratory condition such as emphysema.

☐ Pursed-lip breathing increases the rate of breathing, which helps in oxygen absorption. ☐ Pursed-lip breathing helps in the diagnosis of respiratory conditions.

✓ ☒ **Pursed-lip breathing improves expiration and reduces air trapping, for better airflow.**

☐ Pursed-lip breathing decreases the need for medication in respiratory patients.

16. Type 1 Hypersensitivity-Allergic -IgE reactions: _____ = Severe system reaction; such as wheezing and shortness of breath as bronchioles constrict; edema- airway narrowing

✗ ☒ **Anaphylactic shock**

✓ ☐ **Anaphylactic reaction**

17. What is the primary cause of pre-renal failure?

☐ Obstruction in the urinary tract

✓ ☒ **Sudden reduction in blood flow to the kidneys**

☐ Chronic kidney disease

☐ Intrinsic kidney damage

18. Describe how pre-renal failure impacts kidney function without causing intrinsic kidney damage.

☐ Pre-renal failure results in increased urine output and kidney regeneration.

✓ ☒ **Pre-renal failure leads to renal hypoperfusion, which results in loss of kidney function without intrinsic kidney damage.**

☐ Pre-renal failure is characterized by inflammation of the kidney tissues.

☐ Pre-renal failure causes direct damage to kidney tissues, leading to renal failure.

19. Regarding hypersensitivity, contact dermatitis is_____.

✓ ☒ **Type 4**

☐ Type 3

☐ Type 1

☐ Type 2

20. What term describes the resistance the heart must overcome to eject blood during systole?

☐ Cardiac output

✗ ☒ **Preload**

✓ ☐ **Afterload**

☐ Stroke volume

21. Which bacterium is most frequently associated with urinary tract infections?

☐ Clostridium

☐ Staphylococcus aureus

☐ Salmonella

✓ ☒ **E. coli**

22. What happens to a person with emphysema?

- ✓ ☒ **Air is trapped in the alveoli**
- ☐ The body gets too much oxygen
- ☐ The alveoli shrink
- ☐ Sputum produced is clear

23. Describe the physical characteristics of red blood cells in macrocytic megaloblastic anemia.

- ☐ The red blood cells are smaller than normal.
- ✓ ☒ **The red blood cells are larger than normal.**
- ☐ The red blood cells are fragmented.
- ☐ The red blood cells are irregularly shaped.

24. : Which diagnostic test is essential to confirm the diagnosis of asthma and distinguish it from other obstructive lung diseases?

- ☐ Chest X-ray
- ☐ Electrocardiogram (ECG)
- ✓ ☒ **Pulmonary function tests (PFTs)**
- ☐ Complete blood count (CBC)

25. A patient presents with symptoms of fatigue and neurological issues. Upon examination, you found that they have undergone a gastrectomy. What is the most likely cause of vitamin B-12 deficiency?

- ✓ ☒ **Decreased intrinsic factor production due to gastrectomy**
- ☐ Increased intake of vitamin B-12 supplements
- ☐ Increased absorption of vitamin B-12 from diet
- ☐ Autoimmune destruction of parietal cells unrelated to surgery

26. A patient presents with a total lung capacity (TLC) of 130%. What does this suggest about lung function and potential diagnosis?

- ☐ The patient has normal lung function.
- ✓ ☒ **The patient likely has an obstructive lung disease.**
- ☐ The patient is experiencing acute respiratory distress.
- ☐ The patient may have restrictive lung disease.

27. If a patient presents with hemolytic anemia following a blood transfusion, what is the most appropriate action that should be taken?

- ☐ Administer iron supplements to increase red blood cell production.
- ✓ ☒ **Investigate for a transfusion reaction and provide appropriate treatment.**

- Monitor the patient for signs of dehydration.

☐ Schedule a follow-up appointment in one month.

28. If a patient has a reduced residual volume, what might this indicate about their

☐ It suggests the presence of obstructive lung disease.

☐ It indicates normal lung function and capacity.

☐ It shows an increase in lung compliance.

✓ ☒ **It may indicate restrictive lung disease or impaired lung expansion.**

29. What type of blood does the right ventricle pump?

☐ Waste-rich blood

☐ Nutrient-rich blood

✓ ☒ **Deoxygenated blood**

☐ Oxygenated blood

30. In patients diagnosed with obstructive lung disease, which of the following is the calculated FEV1 / FVC ratio?

☐ FEV1 / FVC ratio is elevated

☐ Both FEV1 and FVC are equally reduced; therefore, ratio is normal

✓ ☒ **FEV1 / FVC ratio is reduced**

- Both FEV1 and FVC are equally elevated; therefore, ratio is normal