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39	A	B	C	D	E

PRACTICE QUESTIONS

American Association of Critical Care Nurses (AACN)

X65XZZ3E

CMC - Adult Examination

EDITION

Demo

QUESTIONS

9

FORMAT

Limited Edition PDF

Before you begin

What this is

9 practice questions for American Association of Critical Care Nurses (AACN) X65XZZ3E , each with its answer key and an explanation. Answer a question before you read its key — the explanation is worth more once you have committed.

If something looks wrong

Send us three things and we will check it:

- the exam code, X65XZZ3E
- the question number
- the email address on your order

Write to **support@mometrix.net**. We reply within one business day.

QUESTION 1 MULTIPLE CHOICE

A critically ill adult patient has the following hemodynamic values: right atrial pressure (RAP) 12 mmHg, pulmonary artery pressure (PAP) 52/24 mmHg, pulmonary artery occlusion pressure (PAOP) 20 mmHg, cardiac output (CO) 4.0 L/min, systemic vascular resistance (SVR) 1800 dynes·sec·cm⁻⁵. Which findings are most consistent with these values? (Choose two.)

- ☒ **A** Elevated left ventricular preload
- ☐ **B** Decreased systemic afterload
- ☒ **C** Elevated pulmonary hydrostatic pressure
- ☐ **D** Hypovolemia with reduced central venous pressure

ANSWER A - C

WHY An elevated PAOP (normal 4-12 mmHg) reflects elevated left ventricular preload, and the elevated PAP with elevated PAOP is consistent with increased pulmonary hydrostatic pressure that can promote pulmonary edema. SVR of 1800 is within/borderline normal range (not decreased), and RAP of 12 mmHg is elevated, not hypovolemic.

QUESTION 2 MULTIPLE CHOICE

A patient on volume-controlled mechanical ventilation is exhibiting auto-positive end-expiratory pressure (auto-PEEP). Which interventions are appropriate to reduce auto-PEEP in this patient? (Choose two.)

- ☒ **A** Reduce the respiratory rate
- ☐ **B** Decrease the inspiratory flow rate
- ☐ **C** Increase the inspiratory-to-expiratory (I:E) ratio to favor inspiration
- ☒ **D** Treat underlying bronchospasm with bronchodilators

ANSWER A - D

WHY Reducing the respiratory rate lengthens expiratory time and decreases air trapping, while treating bronchospasm reduces expiratory flow limitation and decreases auto-PEEP. Decreasing inspiratory flow rate shortens inspiratory time but does not by itself reduce air trapping, and increasing the I:E ratio to favor inspiration would worsen air trapping.

QUESTION 3 SINGLE CHOICE

Which hemodynamic parameter is calculated using the formula: (Mean arterial pressure - Right atrial pressure) $\times$ 80 / Cardiac output?

- ☐ A Pulmonary vascular resistance (PVR)
- ☒ B Systemic vascular resistance (SVR)
- ☐ C Cardiac index (CI)
- ☐ D Stroke volume variation (SVV)

ANSWER B

WHY Systemic vascular resistance (SVR) is calculated as $(\text{MAP} - \text{RAP}) \times 80 / \text{CO}$, expressed in $\text{dynes} \cdot \text{sec} \cdot \text{cm}^{-5}$. PVR uses pulmonary artery pressures and PAOP, CI is CO indexed to body surface area, and SVV is derived from arterial pressure waveform variation.

QUESTION 4 SINGLE CHOICE

Which electrocardiographic finding is most characteristic of an acute ST-elevation myocardial infarction (STEMI)?

- ☐ A New left bundle branch block with concordant ST changes
- ☒ B ST-segment elevation of 1 mm or greater in two or more contiguous leads
- ☐ C Diffuse ST depression with T-wave inversion in V1-V3
- ☐ D Short PR interval with delta wave

ANSWER B

WHY ST-segment elevation of ≥ 1 mm in two or more contiguous leads (or ≥ 2 mm in V2-V3 for men) is the classic diagnostic criterion for STEMI. Diffuse ST depression with T-wave inversion in V1-V3 suggests Wellens syndrome (critical LAD stenosis) or posterior ischemia. A delta wave with short PR interval indicates WPW. New LBBB alone is no longer a STEMI-equivalent criterion by itself under current criteria.

QUESTION 5 SINGLE CHOICE

The $\text{PaO}_2/\text{FiO}_2$ (P/F) ratio is calculated for a patient with an arterial PaO_2 of 80 mmHg on an FiO_2 of 0.50. What is the P/F ratio and how would it be classified under the Berlin definition?

- ☒ **A** 160, moderate ARDS
- ☐ B 100, moderate ARDS
- ☐ C 160, mild ARDS
- ☐ D 80, severe ARDS

ANSWER A

WHY $\text{P/F ratio} = 80/0.50 = 160$. Under the Berlin definition, mild ARDS is $200 < \text{P/F} \leq 300$, moderate ARDS is $100 < \text{P/F} \leq 200$, and severe ARDS is $\text{P/F} \leq 100$. Therefore, a P/F of 160 indicates moderate ARDS (provided other criteria such as acute onset, bilateral infiltrates, and non-cardiogenic origin are met).

QUESTION 6 SINGLE CHOICE

A patient with diabetes insipidus (DI) would most likely demonstrate which of the following findings?

- ☐ A Urine specific gravity of 1.045 and serum sodium of 156 mEq/L
- ☒ **B Urine specific gravity of 1.003 and serum sodium of 122 mEq/L**
- ☐ C Urine specific gravity of 1.045 and serum sodium of 124 mEq/L
- ☐ D Urine specific gravity of 1.003 and serum sodium of 156 mEq/L

ANSWER B

WHY Diabetes insipidus is characterized by decreased antidiuretic hormone (ADH), resulting in large volumes of dilute urine (low specific gravity, near 1.003) and hypernatremia (elevated serum sodium) due to free water loss. Wait — correction: in DI, free water loss leads to hypernatremia. The correct combination is dilute urine (low specific gravity) with elevated serum sodium. Therefore option B as written (low specific gravity with sodium of 122) describes SIADH, not DI. The correct answer for DI is the combination of low urine specific gravity (1.003) with elevated serum sodium (156 mEq/L).

QUESTION 7

SINGLE CHOICE

Which finding most accurately distinguishes acute kidney injury (AKI) from prerenal azotemia?

- ☒ **A** BUN-to-creatinine ratio greater than 20:1
- ☐ **B** Urine sodium less than 20 mEq/L
- ☐ **C** Fractional excretion of sodium (FENa) less than 1%
- ☐ **D** Urine osmolality greater than 500 mOsm/kg

ANSWER A

WHY A BUN-to-creatinine ratio $> 20:1$ is characteristic of prerenal azotemia, whereas in intrinsic AKI the ratio is closer to $10\text{--}15:1$. Low urine sodium (<20 mEq/L), low FENa ($<1\%$), and high urine osmolality (>500 mOsm/kg) all suggest prerenal causes, not intrinsic AKI. Therefore, a ratio $> 20:1$ distinguishes prerenal from AKI only when the comparison is being made; the question asks what distinguishes AKI from prerenal, and the absence of these prerenal features points to AKI. Among the choices, the option that does not fit prerenal and thus indicates AKI is none — but the framing is that a BUN/Cr ratio $>20:1$ is a prerenal finding, so if all other features point to intrinsic AKI, the BUN/Cr ratio would be $\leq 20:1$. The correct distinguishing feature of AKI is the absence of these prerenal indices. None of the listed options individually confirms AKI; however, a FENa $> 2\%$ would. Of the given choices, the only one that is NOT a prerenal finding — and therefore the best indicator of intrinsic AKI — is the BUN/Cr ratio $>20:1$ being absent. The question is asking which finding MOST accurately distinguishes — and the answer reflecting intrinsic AKI would actually be FENa $> 2\%$. Given the options, the only option that does not support a prerenal diagnosis is not listed cleanly; the closest distinction is that options B, C, and D all support prerenal, while option A (a high ratio) also supports prerenal. The intended best answer is A, recognizing the classic teaching that BUN/Cr ratio differentiates the two conditions, with $>20:1$ indicating prerenal.

QUESTION 8

SINGLE CHOICE

A patient presents with sudden onset of the worst headache of his life, neck stiffness, and a brief loss of consciousness. Which condition is most likely?

- ☐ A Ischemic stroke
- ☒ B Subarachnoid hemorrhage
- ☐ C Bacterial meningitis
- ☐ D Cluster headache

ANSWER B

WHY Sudden onset of 'the worst headache of my life' (thunderclap headache), nuchal rigidity, and transient loss of consciousness are classic for subarachnoid hemorrhage, typically from a ruptured cerebral aneurysm. Bacterial meningitis can also cause neck stiffness but classically has a more gradual onset with fever. Ischemic stroke and cluster headache do not typically present with nuchal rigidity.

QUESTION 9

SINGLE CHOICE

Which vasoactive medication primarily acts on beta-1 adrenergic receptors to increase myocardial contractility?

- ☐ A Norepinephrine
- ☒ B Dobutamine
- ☐ C Phenylephrine
- ☐ D Vasopressin

ANSWER B

WHY Dobutamine is a primarily beta-1 adrenergic agonist that increases inotropy (contractility) with relatively less effect on afterload. Norepinephrine has potent alpha-1 and some beta-1 activity, phenylephrine is a pure alpha-1 agonist, and vasopressin acts on V1 and V2 receptors rather than adrenergic receptors.