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39	A	B	C	D	E

PRACTICE QUESTIONS

Saudi Commission For Health Specialties (SCFHS)

CARSU

Cardiothoracic Surgery

EDITION

Demo

QUESTIONS

9

FORMAT

Limited Edition PDF

Before you begin

What this is

9 practice questions for Saudi Commission For Health Specialties (SCFHS) CARSU , 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, CARSU
- the question number
- the email address on your order

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

QUESTION 1

SINGLE CHOICE

A 65-year-old man with severe aortic stenosis and left ventricular ejection fraction (LVEF) of 20% is being evaluated for surgical aortic valve replacement (SAVR). Which of the following factors is most strongly associated with increased operative mortality in this patient?

- ☐ A Patient age above 65 years
- ☒ B Reduced left ventricular ejection fraction (LVEF < 30%)
- ☐ C Mild aortic regurgitation
- ☐ D Body surface area (BSA) greater than 2.0 m²

ANSWER B

WHY Reduced LVEF (especially <30%) is one of the strongest independent predictors of operative mortality and postoperative low cardiac output syndrome in patients undergoing SAVR. Age and BSA alone are not as strongly predictive as impaired ventricular function. Mild aortic regurgitation is generally well tolerated.

QUESTION 2

SINGLE CHOICE

During harvesting of the left internal mammary artery (LIMA) for CABG, which of the following maneuvers is most important to avoid injuring the phrenic nerve?

- ☐ A Skeletonization of the LIMA rather than pedicled harvesting
- ☒ B Careful dissection along the medial border of the LIMA, staying close to the artery
- ☐ C Wide dissection laterally away from the mediastinum
- ☐ D Use of electrocautery on the pericardiophrenic vessels

ANSWER B

WHY The phrenic nerve runs along the lateral pericardium, parallel and slightly lateral to the LIMA. Staying close to the medial border of the LIMA during dissection keeps the surgeon away from the nerve. Skeletonization does not address phrenic nerve risk, and lateral dissection increases the risk of injury.

QUESTION 3

SINGLE CHOICE

A patient with severe mitral regurgitation (MR) due to posterior leaflet prolapse is scheduled for mitral valve repair. Which of the following is the most appropriate surgical technique for isolated posterior leaflet prolapse?

- ☐ A Chordal transfer from the anterior leaflet
- ☐ B Edge-to-edge (Alfieri) stitch
- ☒ C Quadrangular resection of the prolapsing segment with ring annuloplasty
- ☐ D Mitral valve replacement with a mechanical prosthesis

ANSWER C

WHY Quadrangular (triangular) resection of the prolapsing posterior leaflet segment combined with annuloplasty ring implantation is the gold-standard, most durable technique for isolated posterior leaflet prolapse. Chordal transfer is more often used for anterior leaflet pathology, the Alfieri stitch is an adjunct, and replacement is reserved for unreparable valves.

QUESTION 4

SINGLE CHOICE

Six hours after an uncomplicated CABG, a patient has chest tube drainage of 250 mL/hr that is dark red and warm. Blood pressure is 80/50 mmHg and central venous pressure is rising. What is the most appropriate next step?

- ☐ A Observe and repeat hemoglobin in one hour
- ☐ B Increase the positive end-expiratory pressure (PEEP)
- ☒ C Take the patient emergently to the operating room for surgical re-exploration
- ☐ D Administer an additional dose of subcutaneous low-molecular-weight heparin

ANSWER C

WHY Drainage >200 mL/hr of fresh, warm, dark blood with hemodynamic instability and rising filling pressures is classic for active surgical bleeding/tamponade and mandates emergent re-exploration. Observation, PEEP adjustment, and additional anticoagulation are inappropriate in this scenario.

QUESTION 5

SINGLE CHOICE

A 60-year-old smoker presents with a solitary pulmonary nodule (SPN) of 2.2 cm in the right upper lobe. PET-CT shows a standardized uptake value (SUV) of 8 with no mediastinal uptake. What is the most appropriate next step in management?

- ☐ A Serial CT surveillance every 3 months
- ☐ B CT-guided fine needle aspiration
- ☒ C Surgical resection (wedge resection or lobectomy)
- ☐ D Empiric broad-spectrum antibiotics and repeat CT

ANSWER C

WHY An SPN >2 cm with PET avidity (SUV >2.5) is highly suspicious for malignancy. In a resectable patient, surgical resection — typically wedge resection for diagnosis or lobectomy with systematic lymph node dissection if malignancy is confirmed — is preferred. FNA may yield non-diagnostic results, and surveillance or antibiotics are inappropriate given the high suspicion.

QUESTION 6

SINGLE CHOICE

Which of the following is the most sensitive indicator of inadequate systemic perfusion during cardiopulmonary bypass?

- ☐ A Mean arterial pressure (MAP) alone
- ☐ B Arterial oxygen saturation (SaO₂) from the oxygenator
- ☒ C Mixed venous oxygen saturation (SvO₂)
- ☐ D Pump flow rate

ANSWER C

WHY Mixed venous oxygen saturation is the most sensitive indicator of the balance between systemic oxygen delivery and consumption. A drop in SvO₂ during CPB indicates inadequate tissue perfusion even when MAP and pump flow appear acceptable. MAP alone and oxygenator SaO₂ are less sensitive markers of tissue oxygenation.

QUESTION 7

SINGLE CHOICE

According to the Stanford classification, which of the following aortic dissections requires emergent surgical repair as the standard of care?

- ☒ **A** Type A (involving the ascending aorta)
- ☐ **B** Type B (involving only the descending aorta, distal to the left subclavian artery)
- ☐ **C** Intramural hematoma of the descending aorta without aortic dilatation
- ☐ **D** Penetrating atherosclerotic ulcer of the descending aorta in a stable patient

ANSWER A

WHY Stanford Type A dissections involve the ascending aorta and carry a mortality of approximately 1–2% per hour if untreated; emergent open surgical repair is the standard of care. Uncomplicated Type B dissections are managed medically with blood pressure control, and intramural hematoma/PAU of the descending aorta are managed selectively.

QUESTION 8

SINGLE CHOICE

Which of the following is the most common congenital cyanotic heart disease presenting beyond infancy that requires surgical correction?

- ☐ **A** Transposition of the great arteries (TGA)
- ☒ **B** Tetralogy of Fallot (TOF)
- ☐ **C** Hypoplastic left heart syndrome (HLHS)
- ☐ **D** Truncus arteriosus

ANSWER B

WHY Tetralogy of Fallot is the most common cyanotic congenital heart disease beyond infancy and typically presents with cyanosis, a harsh systolic ejection murmur, and 'tet spells.' TGA and truncus arteriosus usually present in the neonatal period, and HLHS presents shortly after birth with shock.

QUESTION 9

MULTIPLE CHOICE

Which of the following are characteristic clinical features of myasthenia gravis associated with thymoma? (Choose two.)

- ☒ **A** Fluctuating muscle weakness that worsens with activity and improves with rest
- ☒ **B** Involvement of cranial nerves producing ptosis and diplopia
- ☐ **C** Bradycardia and atrioventricular block on ECG
- ☐ **D** Bilateral lower limb deep vein thrombosis with pulmonary embolism

ANSWER **A** • **B**

WHY Myasthenia gravis classically causes fatigable weakness worsening with exertion and improving with rest, and frequently involves extraocular and bulbar muscles producing ptosis, diplopia, dysarthria, and dysphagia. Cardiac conduction abnormalities and venous thromboembolism are not typical features of thymoma-associated myasthenia gravis.