



14695

**BRAINWARE UNIVERSITY**

Term End Examination 2025-2026

Programme – B.Sc.(PA)-2022/B.Sc.(PA)-2023

Course Name – Cardio-Vascular & Thoracic Surgery

Course Code - BPAC501

(Semester V)

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Brainware University
Barasat, Kolkata -700125

Full Marks : 60

Time : 2:30 Hours

[The figure in the margin indicates full marks. Candidates are required to give their answers in their own words as far as practicable.]

Group-A

(Multiple Choice Type Question)

1 x 15=15

1. Choose the correct alternative from the following :

- (i) Identify the primary cause of Ischaemic Heart Disease.
- | | |
|-----------------|--------------------|
| a) Hypertension | b) Atherosclerosis |
| c) Diabetes | d) Obesity |
- (ii) Indicate the symptom that is not typically associated with myocardial infarction.
- | | |
|---------------|---------------------------|
| a) Chest pain | b) Shortness of breath |
| c) Nausea | d) Increased urine output |
- (iii) Compare the ECG findings in IHD.
- | | |
|-------------------------|---------------------------|
| a) ST-segment elevation | b) Increased QRS duration |
| c) Absent P-wave | d) Constant RR interval |
- (iv) Indicate the most lethal arrhythmia post-MI leading to sudden cardiac death.
- | | |
|---------------------------------|-----------------------------|
| a) Atrial fibrillation | b) Ventricular fibrillation |
| c) Supraventricular tachycardia | d) First-degree heart block |
- (v) Identify the condition where CABG might be considered as a treatment option:
- | | |
|------------------------------|--|
| a) Rheumatic heart disease | b) Severe left main coronary artery stenosis |
| c) Peripheral artery disease | d) Aortic dissection |
- (vi) Give examples of two arteries that can be used for grafts in CABG:
- | | |
|---|----------------------------------|
| a) Aorta and pulmonary artery | b) Brachial and femoral arteries |
| c) Radial and internal mammary arteries | d) Carotid and cerebral arteries |
- (vii) Indicate the tool used to oxygenate the blood and pump it throughout the body during CABG:
- | | |
|------------------------------|---------------------|
| a) Pacemaker | b) Ventilator |
| c) Heart-lung bypass machine | d) Dialysis machine |
- (viii) Indicate the condition where the heart valve doesn't close tightly, causing blood to leak backward is called:
- | | |
|------------------|-------------|
| a) Stenosis | b) Prolapse |
| c) Regurgitation | d) Atresia |

- (ix) Select invasive procedure where a new valve is inserted within the old, damaged valve?
 a) Heart transplantation
 b) Surgical valve replacement
 c) TAVR
 d) Balloon angioplasty
- (x) Identify: When reviewing a chest X-ray, how can you identify the presence of pleural effusion in a patient with pleural disease?
 a) Increased lung expansion
 b) Clear lung fields
 c) Blunting of the costophrenic angles
 d) Prominent lung nodules
- (xi) Select the following is the primary indication for mechanical circulatory support (MCS) in post-cardiac surgery patients
 a) Hypovolemic shock
 b) Cardiogenic shock
 c) Septic shock
 d) Neurogenic shock
- (xii) Select the most common vessel used for vein harvesting in coronary artery bypass grafting (CABG) is:
 a) Radial artery
 b) Internal mammary artery
 c) Great saphenous vein
 d) Cephalic vein
- (xiii) Predict in the management of a patient with STEMI (ST-Elevation Myocardial Infarction), what is the first-line intervention if the facility has PCI (Percutaneous Coronary Intervention) capability?
 a) Fibrinolysis
 b) Coronary artery bypass grafting (CABG)
 c) Primary PCI
 d) Thrombolysis
- (xiv) Tell the most common cause of aortic stenosis in patients over 65 years old is:
 a) Congenital bicuspid aortic valve
 b) Rheumatic heart disease
 c) Infective endocarditis
 d) Degenerative calcific disease
- (xv) Interpret a patient with a history of chronic cough and recent weight loss undergoes imaging that reveals a large mass involving the diaphragm. Which of the following is the most likely diagnosis?
 a) Diaphragmatic hernia
 b) Mesothelioma
 c) Pleural effusion
 d) Pleural effusion

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Group-B

(Short Answer Type Questions)

3 x 5=15

2. Discuss the importance of hemodynamic monitoring in the post-operative care of cardiothoracic surgery patients. How does it impact patient outcomes? (3)
3. Name What are some potential complications associated with cardiopulmonary bypass, and how are they managed? (3)
4. Explain the difference between on-pump and off-pump coronary artery bypass grafting (CABG) procedures. (3)
5. Explain What are the common symptoms of valvular heart disease? (3)
6. Explain the management of CABG patient. (3)

OR

Write Why is myocardial protection crucial during cardiac surgery, and what methods are commonly used? (3)

Group-C

(Long Answer Type Questions)

5 x 6=30

7. Design a post-operative care plan for a patient who has undergone open-heart surgery, considering specific interventions for pain management, infection control, and prevention of complications. (5)
8. Discuss the potential complications and strategies for preventing and managing complications related to cardiopulmonary bypass in cardiac surgery. (5)
9. Explain the pathophysiological changes in the left ventricle in response to aortic stenosis. How do these changes influence the clinical presentation and management of the disease? (5)

10. Justify the indications for valve repair versus valve replacement in mitral valve disease. (5)
What are the advantages and disadvantages of each surgical option in the context of long-term patient outcomes?
11. Compare the outcomes of coronary artery bypass grafting (CABG) versus percutaneous coronary intervention (PCI) in the management of multi-vessel ischaemic heart disease. (5)
What are the indications for each approach?
12. Classify Chest wall tumors. Write in details about its management. (5)

OR

Explain the TNM staging and management of Non small cell lung carcinoma. (5)

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