

CARDIOTHORACIC SURGERY

PAPER – I

Time : 3 hours
Max. Marks : 100

CTS/D/12/04/I

Attempt all questions in order.
Each question carries 10 marks.

1. Discuss Jones criteria for diagnosis of rheumatic fever and current rheumatic fever prophylaxis guidelines. 4+6
2. Illustrate the surgical anatomy of the aortic root. Briefly describe patient-prosthesis mismatch. Draw labeled diagrams to show methods of aortic root enlargement. 3+2+5
3. Define renovascular hypertension. Describe its pathophysiology and treatment modalities. 2+(4+4)
4. Draw a labeled diagram to show fetal circulation. What are the immediate changes that occur soon after birth and why do they occur? 5+5
5. Discuss the roles of trans-thoracic and transesophageal echo in heart surgeries. 5+5
6. Discuss empyema thoracis with respect to definition, etiology and management. 1+4+5
7. Mention the grades of pulmonary arterial hypertension. What are the methods of accessing the severity and reversibility of pulmonary arterial hypertension in children with congenital heart disease? 2+(5+3)
8. Discuss development of diaphragm, its surgical anatomy and management of hernia of Bochdalek. 4+3+3
9. Discuss in brief stem cell therapy in peripheral and myocardial angiogenesis with reference to (a) Source of stem cells (b) Methods of delivery with advantage and disadvantage of each method. 4+(3+3)
10. Can Tetralogy of Fallot (T.O.F) be called a monology? Justify your answer. Describe with diagram(s) the development of inter-ventricular septum and right-ventricular outflow tract and describe what happens in T.O.F. 3+7

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PAPER – II

Time : 3 hours
Max. Marks : 100

CTS/D/12/04/II

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1. Describe the concept and relevance of intracoronary shunts and stabilizers used in OPCAB. 4+3+3
2. Explain physiology of Fontan's principle. Briefly describe the evaluation of Fontan's operation and its current indications. 2+(4+4)
3. Describe the surgical anatomy of coronary arterial circulation. Discuss the rationale, advantages and limitations of retrograde coronary cardioplegia. 3+(1+3+3)
4. Describe the pathophysiology of ischemic mitral regurgitation. Discuss in brief the medical, surgical and percutaneous approaches to the disease. 4+(1+3+2)
5. Enumerate the drugs used, their role and results in thrombolytic treatment in prosthetic valve thrombosis. 2+4+4
6. Discuss the etiopathogenesis and management of acquired bronchopleural fistula. 3+7
7. Discuss the etiopathology and investigations for chronic constrictive pericarditis. What is post pericardiotomy syndrome? Briefly describe its management? 4+4+2
8. Classify and illustrate the lymph node stations in relation to the bronchogenic carcinoma. 10
9. Describe the risk factors for developing paraplegia during coarctation of aorta repair and management to prevent it. 5+5
10. Discuss the pathophysiology and importance of pulmonary veins and left atrial enlargement in the genesis of atrial fibrillation in valvular heart disease and role of surgical intervention. 10

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PAPER – III

Time : 3 hours
Max. Marks : 100

CTS/D/12/04/III

Attempt all questions in order.
Each question carries 10 marks.

1. Discuss TAVI with regards to: 3+4+3
 - a) Indications and valves used
 - b) Approach routes and
 - c) Complications.
2. Define and classify heart failure. Discuss current status of destination therapy in surgical management of chronic heart failure. (2+2)+6
3. Briefly describe the concept of "Tissue engineered heart valves" and the current status of heart valve banking and heart valve substitutes in India. 4+3+3
4. Define "Internet and Communication Technology (I.C.T)" and comment on the impact of I.C.T in remote patient monitoring and health outcomes in cardiac surgical patients. 10
5. Define acute coronary syndrome. Discuss in brief indications of CABG in acute coronary syndrome and pathophysiology of "no-reflow phenomenon". 2+(3+5)
6. What are enabling devices? Briefly describe the role of enabling devices in cardiac surgery? 3+7
7. Define "counter-pulsation". Describe physiological basis of IABP. What are its indications and complications? 2+3+(3+2)
8. Describe the concept of heart team. How do you think it will impact the future of CABG in India? 2+8
9. When is myocardial viability tests indicated? Discuss in brief the current modalities available for this test. 2+8
10. Discuss syntax trial under the following headings: 4+4+2
 - a) Design of the trial
 - b) Outcome of the trial
 - c) Impact on current practice of stenting and CABG
