

APRIL - 2001

[KD 025]

Sub. Code : 1501

M.Ch. DEGREE EXAMINATION.

(Higher Specialities)

Branch I — Thoracic Surgery

(Revised Regulations)

Paper I — BASIC SCIENCES

Time : Three hours

Maximum : 100 marks

Answer ALL questions.

1. Anatomy of Trachea

Indications of tracheal surgery and the procedures of tracheal resections. (25)

2. Anatomy of aortic root and various procedures in aortic root enlargement. (25)

3 Short notes on : (5 × 10 = 50)

- (a) Sites of aneurysm in coarctation of aorta.
- (b) Role of anticoagulants in cardiac surgery.
- (c) Sternal wound infection and management.
- (d) Anatomy of anterior papillary muscle.
- (e) Retrograde cardioplegia.

**MARCH - 2002**

**[KG 025]**

**Sub. Code : 1501**

**M.Ch. DEGREE EXAMINATION**

**(Higher Specialities)**

**(Revised Regulations)**

**Branch I — Thoracic Surgery**

**Paper I — BASIC SCIENCES**

**Time : Three hours**

**Maximum: 100 marks**

**Answer ALL questions.**

1. Discuss the consequences of reduced core temperature below 36°C. (25)
2. Describe the development of pulmonary artery. Describe the characteristics of pulmonary blood flow in diminutive or absent central pulmonary arteries. (25)
3. Write briefly on : (5 × 10 = 50)
  - (a) Cervical Aortic Arch
  - (b) Fungus ball in the lung
  - (c) Aberrant subclavian artery
  - (d) Bronchogenic cyst
  - (e) Truncus arteriosus.

**SEPTEMBER - 2002**

**[KH 025]**

**Sub. Code : 1501**

**M.Ch. DEGREE EXAMINATION**

**(Higher Specialities)**

**(Revised Regulations)**

**Branch I — Thoracic Surgery**

**Paper I — BASIC SCIENCES**

**Time : Three hours**

**Maximum : 100 marks**

**Answer ALL questions**

1. Anatomy of mitral complex. (25)
2. Anatomy of oesophagus and its lymphatic drainage. (25)
3. Write short notes on (5 × 10 = 50)
  - (a) Absent pulmonary valve syndrome.
  - (b) Carcinoid tumours.
  - (c) S.A. node
  - (d) Anatomy of atrial septal defect
  - (e) Bochdaleck hernia and development of diaphragm.

**APRIL - 2003**

**[RJ 025]**

**Sub. Code : 1501**

**M.Ch. DEGREE EXAMINATION.**

**(Higher Specialities)**

**(Revised Regulations)**

**Branch I — Thoracic Surgery**

**Paper I — BASIC SCIENCES**

**Time : Three hours**

**Maximum : 100 marks**

**Answer ALL questions.**

1. Describe the factors affecting cardiac output and its pharmacological manipulation. (25)
  2. Discuss the various types of carcinoma of esophagus and their management. (25)
  3. Short notes on : (5 × 10 = 50)
    - (a) Allan corpentier
    - (b) Taussig–Bing Anomaly
    - (c) Zenker's diverticulum
    - (d) Recurrent laryngeal nerve
    - (e) Thoracic duct.
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APRIL - 2004

[KK 025]

Sub. Code : 1501

B. Short notes : (10 × 5 = 50)

M.Ch. DEGREE EXAMINATION.

(Higher Specialities)

(Revised Regulations)

Branch I — Cardio Thoracic Surgery

Paper I — BASIC SCIENCES

Time : Three hours

Maximum : 100 marks

Theory : Two hours and  
forty minutes

Theory : 80 marks

M.C.Q. : Twenty minutes

M.C.Q. : 20 marks

Answer ALL the questions.

A. Essay :

(2 × 15 = 30)

(1) Describe the anatomy of Mitral valve apparatus. Describe the various methods of Mitral Valve repair.

(2) Describe the anatomy of the aortic root. Discuss the surgical management of the small aortic root.

- (1) Frank-Starling law
- (2) Mibinone in cardiac surgery
- (3) Triangle of Koch
- (4) Ischaemic pre conditioning
- (5) Scimitar syndrome
- (6) Myocardial hibernation
- (7) Pulmonary function tests
- (8) Aschoff nodule
- (9) Kaplan-Meier model
- (10) PEEP.

**AUGUST - 2004**

**[KL 025]**

**Sub. Code : 1501**

**M.Ch. DEGREE EXAMINATION.**

**(Higher Specialities)**

**(Revised Regulations)**

**Branch I — Cardio Thoracic Surgery**

**Paper I — BASIC SCIENCES**

**Time : Three hours**

**Maximum : 100 marks**

**Theory : Two hours and  
forty minutes**

**Theory : 80 marks**

**M.C.Q. : Twenty minutes**

**M.C.Q. : 20 marks**

**Answer ALL questions.**

**I. Essay : (2 × 15 = 30)**

**(1) Discuss the cardiopulmonary bypass setup for infant cardiac surgery.**

**(2) Explain the lung volumes and discuss about the various pulmonary function tests and their clinical application.**

**II. Short notes : (10 × 5 = 50)**

**(a) Grading of pulmonary vascular disease.**

**(b) Membrane oxygenator.**

**(c) Free radical scavengers.**

**(d) Venous drainage of the heart.**

**(e) Development of interventricular septum.**

**(f) Amiodarone.**

**(g) Anatomy of the aortic root.**

**(h) Polytetrafluoroethylene vascular graft.**

**(i) Retrograde coronary sinus perfusion.**

**(j) Histology of tracheo-bronchial epithelium and origin of various tumors of the lung.**

**FEBRUARY - 2005**

**[KM 025]**

**Sub. Code : 1501**

**M.Ch. DEGREE EXAMINATION.**

**(Higher Specialities)**

**(Revised Regulations)**

**Branch I — Cardio Thoracic Surgery**

**Paper I — BASIC SCIENCES**

**Time : Three hours**

**Maximum : 100 marks**

**Theory : Two hours and  
forty minutes**

**Theory : 80 marks**

**M.C.Q. : Twenty minutes**

**M.C.Q. : 20 marks**

**Answer ALL the questions.**

**I. Essay :**

**(2 × 15 = 30)**

**(1) Describe in detail recent advances in myocardial protection in adult cardiac surgery.**

**(2) Discuss the fibrous skeleton of the heart and its surgical implications.**

**II. Short notes :**

**(10 × 5 = 50)**

**(a) Discuss the blood supply of the SA node and its surgical importance.**

**(b) Discuss in detail the lymphatic drainage of the lung.**

**(c) Discuss the aetiology of Bronchiectasis.**

**(d) Describe the life cycle of Echinococcus Granulosis.**

**(e) Describe the anatomy of the broncho pulmonary segments.**

**(f) Discuss the aetiology and treatment of Chylothorax.**

**(g) Pectus Excavatum.**

**(h) SVC Obstruction.**

**(i) Discuss Mediastinal cysts.**

**(j) Development of Inter Ventricular Septum.**

FEBRUARY - 2006

[KO 025]

Sub. Code : 1501

**M.Ch. DEGREE EXAMINATION.**

(Higher Specialities)

(Revised Regulations)

Branch I — Cardio Thoracic Surgery

Paper I — BASIC SCIENCES

Time : Three hours

Maximum : 100 marks

Theory : Two hours and  
forty minutes

Theory : 80 marks

M.C.Q. : Twenty minutes

M.C.Q. : 20 marks

Answer ALL questions.

I. Essay questions : (2 × 15 = 30)

1. Describe venous drainage of heart and discuss its applied significance.

2. Describe in brief development of interventricular septum. Describe various classifications of VSDs and discuss the clinical relevance of each classification.

II. Short notes : (10 × 5 = 50)

- (a) Applied anatomy of thoracic esophagus
- (b) 1<sup>st</sup> heart sound
- (c) Particulate emboli during CPB
- (d) Complement activation during open heart surgery
- (e) Group A  $\beta$  hemolytic streptococci
- (f)  $\beta$  blockers in cardiac surgery
- (g) Applied anatomy of bronchopulmonary segments
- (h) Pathophysiology of pneumothorax
- (i) Etiopathogenesis of Aortoarteritis
- (j) History of ASD closure.



**AUGUST - 2006**

**[KP 025]**

**Sub. Code : 1501**

**M.Ch. DEGREE EXAMINATION.**

**(Higher Specialities)**

**(Revised Regulations)**

**Branch I — Cardio Thoracic Surgery**

**Paper I — BASIC SCIENCES**

**Time : Three hours**

**Maximum : 100 marks**

**Theory : Two hours and  
forty minutes**

**Theory : 80 marks**

**M.C.Q. : Twenty minutes**

**M.C.Q. : 20 marks**

**Answer ALL questions.**

**I. Essay questions :**

**(1) Discuss the surgical anatomy of mitral valve apparatus and its applied significance. (20)**

**(2) Discuss the surgical anatomy of mediastinum with special reference to mediastinal tumours. (15)**

**(3) Discuss various endoscopic diagnostic procedures for the diagnosis of thoracic diseases of surgical importance. (15)**

**II. Write short notes :**

**(6 × 5 = 30)**

**(a) Role of CT angio for evaluation of coronary artery disease.**

**(b) Role of platelets in cardiovascular surgery.**

**(c) Surgical anatomy of diaphragm.**

**(d) Patent Foramen ovale.**

**(e) Protamine.**

**(f) Double lumen endotracheal tube.**

FEBRUARY - 2007

[KQ 025]

Sub. Code : 1501

M.Ch. DEGREE EXAMINATION.

(Higher Specialities)

(Revised Regulations)

Branch I — Cardio Thoracic Surgery

Paper I — BASIC SCIENCES

Time : Three hours

Maximum : 100 marks

Theory : Two hours and  
forty minutes

Theory : 80 marks

M.C.Q. : Twenty minutes

M.C.Q. : 20 marks

Answer ALL the questions.

I. Essay Questions :

1. Discuss the anatomy of the aortic root and outline the various procedures for aortic root enlargement. (20)
2. Discuss the lymphatic drainage of the lungs with reference to bronchogenic carcinoma. (15)
3. Discuss the coagulation cascade and outline the mechanism of action of various anticoagulant and pro coagulant medications. (15)

II. Write short notes on :

(6 × 5 = 30)

1. Esophageal manometry.
  2. Sequestration of lung.
  3. Lobar emphysema.
  4. Scimitar syndrome.
  5. Drug resistant acid fast bacilli.
  6. Pancoast's tumour.
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August-2007

**[KR 025]**

**Sub. Code : 1501**

II. Write short notes :

(6 × 5 = 30)

M.Ch. DEGREE EXAMINATION.

(Higher Specialities)

(Revised Regulations)

Branch I — Cardio Thoracic Surgery

Paper I — BASIC SCIENCES

Time : Three hours

Maximum : 100 marks

Theory : Two hours and  
forty minutes

Theory : 80 marks

M.C.Q. : Twenty minutes

M.C.Q. : 20 marks

Answer ALL the questions.

I. Essay questions :

(1) Describe in brief development of interventricular septum. Describe various classifications of VSDs and discuss the clinical relevance of each classification. (20)

(2) Discuss the anatomy of diaphragm with special reference to different diaphragmatic hernias. (15)

(3) Discuss "Pulmonary function parameters" in relation to cardiothoracic surgery. (15)

- (a) Thoracoplasty.
- (b) Saphenofemoral incompetence.
- (c) Diabetic foot.
- (d) Leiomyoma of oesophagus.
- (e) LIMA.
- (f)  $\beta$  Blockers in cardiac surgery.

[KS 025]

Sub. Code : 1501

M.Ch. DEGREE EXAMINATION.

(Higher Specialities)

(Revised Regulations)

Branch I — Cardio Thoracic Surgery

Paper I — BASIC SCIENCES

Q.P. Code : 1811501

Time : Three hours                      . Maximum : 100 marks

Answer ALL questions.

I. Essay questions :

1. Describe the anatomy of collateral circulation in co-arcuation aorta below subclavian artery and its clinical-importance. (20)

2. Describe the conduction system of the heart and its surgical importance. (20)

II. Short notes : (10 × 6 = 60)

- (1) Pathology of lung cancer.
- (2) Gastro-oesophageal reflux.
- (3) Overdrive pacing.
- (4) Cardiac cycle.

(5) Development of interventricular septum.

(6) Oxygen haemoglobin dissociation curve.

(7) Cardiac metabolism.

(8) Marker cardiac enzymes.

(9) Bronchopulmonary segments.

(10) Echo/doppler assessment of severity of mitral regurgitation.

August 2008

[KT 025]

Sub. Code: 1501

**M.Ch. DEGREE EXAMINATION**

**(Higher Specialities)**

**(Revised Regulations)**

**Branch I – Cardio Thoracic Surgery**

**Paper I– BASIC SCIENCES**

*Q.P. Code: 181501*

**Time: Three hours**

**Maximum: 100 Marks**

**ANSWER ALL QUESTIONS**

**Draw suitable diagrams wherever necessary.**

**I. Essays:**

**(2 x 20 = 40)**

1. Describe the anatomy of tricuspid valve and discuss the various surgical procedures performed to correct tricuspid regurgitation.
2. Describe the various fungal infections of lung and heart which are of interest to cardiothoracic surgeon and their treatment.

**II. Write short notes on:**

**(10 x 6 = 60)**

1. Trabecula septomarginalis.
  2. Epsilon amino caproic acid.
  3. Pneumocystis carinii.
  4. Bulbus cordis.
  5. Aschoff nodule.
  6. Oxygen Dissociation curve.
  7. Alveolocapillary membrane.
  8. Natriuretic peptide.
  9. Blood supply of trachea.
  10. Lower oesophageal sphincter.
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August 2009

[KV 025]

Sub. Code: 1501

**MASTER OF CHIRURGIAE (M.Ch.) DEGREE EXAMINATIONS**

**(Higher Specialities)**

**(Revised Regulations)**

**Branch I – Cardio Thoracic Surgery**

**Paper I– BASIC SCIENCES**

*Q.P. Code: 181501*

**Time: Three hours**

**Maximum: 100 Marks**

**Answer ALL questions**

**Draw suitable diagrams wherever necessary.**

**I. Essays:**

**(2 x 20 = 40)**

1. Discuss the surgical anatomy of the normal conduction system and outline its importance in various cardiac surgical procedures.
2. Describe the anatomy of the aortic root and outline the various surgical procedures to enlarge small aortic annulus.

**II. Write short notes on:**

**(10 x 6 = 60)**

1. Left superior vena cava.
2. Ductus arteriosus.
3. Aspergilloma.
4. Anatomy of left internal mammary artery.
5. Pulmonary functions tests.
6. INR.
7. Phospho diesterase inhibitors.
8. Broncho pulmonary segments.
9. PEEP.
10. Cervical rib.

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February 2010

[KW 025]

Sub. Code: 1501

**MASTER OF CHIRURGIAE (M.Ch.) DEGREE EXAMINATIONS**

**(Higher Specialities)**

**(Revised Regulations)**

**Branch I – Cardio Vascular and Thoracic Surgery**

**(Common to all Candidates)**

**Paper I– BASIC SCIENCES**

*Q.P. Code: 181501*

**Time: Three hours**

**Maximum: 100 Marks**

**Answer ALL questions**

**Draw suitable diagrams wherever necessary.**

**I. Essays:**

**(2 x 20 = 40)**

1. Describe the development of pulmonary venous system and left atrium. Describe briefly the various anomalies due to maldevelopment.
2. What are the various organisms responsible for Nosocomial infections in recovery rooms and intensive care units? Describe methods of preventing them.

**II. Write short notes on:**

**(10 x 6 = 60)**

1. Amiodarone.
2. Drug induced colitis.
3. Right ductus arteriosus.
4. Tracheal strictures.
5. Hyponatremia.
6. Diaphragmatic hernia.
7. Mesothelioma.
8. Peek expiratory flow rate.
9. Metabolic alkalosis.
10. Aschoff nodule.

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February 2011

[KY 025]

Sub. Code: 1501

**MASTER OF CHIRURGIAE (M.Ch.) DEGREE EXAMINATIONS**

**(Super Specialities)**

**Branch I – Cardio Vascular and Thoracic Surgery**

**(Revised Regulations)**

**Common to all Candidates**

**Paper I – BASIC SCIENCES**

*Q.P. Code: 181501*

**Time: Three hours**

**Maximum: 100 Marks**

**Answer ALL questions**

**Draw suitable diagrams wherever necessary.**

**I. Essays:**

**(2 x 20 = 40)**

1. Describe the normal development of interatrial septum and classify atrial septal defects, Discuss the management of sinus venosus type of ASD.
2. Describe the conduction system of the heart and its anomalies, with its surgical relevance.

**II. Write short notes on:**

**(10 x 6 = 60)**

1. Atrial Isomerism.
2. Persistent Left Superior Vena Cava.
3. Membrane Oxygenators.
4. Prosthetic valve endocarditis.
5. Flail chest.
6. Bronchogenic cyst.
7. Noonan-Shumway.
8. Protamine reactions.
9. Milrinone.
10. Surgical Anatomy of Trachea.

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August 2011

[KZ 025]

Sub. Code: 1501

**MASTER OF CHIRURGIAE (M.Ch.) DEGREE EXAMINATION**  
**(SUPER SPECIALITIES)**  
**BRANCH I – CARDIO VASCULAR AND THORACIC SURGERY**  
**BASIC SCIENCES**  
*Q.P. Code: 181501*

**Time : 3 hours**  
**(180 Min)**

**Maximum : 100 marks**

**Answer ALL questions in the same order.**

**I. Elaborate on :**

**Pages Time Marks**  
**(Max.) (Max.) (Max.)**

- |   |    |    |    |
|---|----|----|----|
| 1. What perfusion strategy would you adopt for arch Aneurysms?<br>Discuss the technique.  | 11 | 35 | 15 |
| 2. A 45 year old person has come up for double valve<br>replacement. What would be your preferred method of<br>Myocardial management? | 11 | 35 | 15 |

**II. Write notes on :**

- |   |   |    |   |
|---|---|----|---|
| 1. Conduction System in the Heart.  | 4 | 10 | 7 |
| 2. Anticoagulants used in Cardiac Surgery and monitoring<br>their levels. | 4 | 10 | 7 |
| 3. Management of ARDS.  | 4 | 10 | 7 |
| 4. Nosocomial infections.   | 4 | 10 | 7 |
| 5. Anatomy of the Trachea and techniques of mobilization.                 | 4 | 10 | 7 |
| 6. Options available in Prosthetic Heart Valves.                          | 4 | 10 | 7 |
| 7. Assessment of the Pulmonary function.                                  | 4 | 10 | 7 |
| 8. Anomalies of the Mitral Valve.   | 4 | 10 | 7 |
| 9. Classification of left Ventricular out flow tract obstruction.         | 4 | 10 | 7 |
| 10. Treatment of MDR TB.  | 4 | 10 | 7 |

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[LB 025]

AUGUST 2012

Sub. Code: 1501

M.Ch – CARDIO VASCULAR AND THORACIC SURGERY

Paper – I BASIC SCIENCES

Q.P. Code: 181501

Time : 3 hours  
(180 Min)

Maximum : 100 marks

Answer ALL questions in the same order.

**I. Elaborate on:**

Pages Time Marks  
(Max.)(Max.)(Max.)

- |   |    |    |    |
|---|----|----|----|
| 1. Describe the Broncho pulmonary segments and discuss the aetiopathology and management of Bronchiectasis. | 16 | 35 | 15 |
| 2. Discuss the embryology and anatomy of Interventricular septum.   | 16 | 35 | 15 |

**II. Write notes on:**

- |   |   |    |   |
|---|---|----|---|
| 1. Describe His bundle mapping and its uses.  | 4 | 10 | 7 |
| 2. Classify Co-arctation of aorta and its surgical management.  | 4 | 10 | 7 |
| 3. Elaborate on additives used in Cardioplegia.   | 4 | 10 | 7 |
| 4. Causes and management of Chylothorax.  | 4 | 10 | 7 |
| 5. Indications, contra indications, hemodynamics, insertion and weaning of Intra Aortic balloon pump. | 4 | 10 | 7 |
| 6. Surgical management of Pharyngeal diverticulum.  | 4 | 10 | 7 |
| 7. Diagnosis and management of Malignant pleural mesothelioma.  | 4 | 10 | 7 |
| 8. Central fibrous body, its attachment and structures passing through it.                            | 4 | 10 | 7 |
| 9. Causes, clinical features and management of ARDS.  | 4 | 10 | 7 |
| 10. Atrial pacing.  | 4 | 10 | 7 |

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**M.Ch. – CARDIO VASCULAR AND THORACIC SURGERY**  
**Paper – I BASIC SCIENCES**  
*Q.P.Code: 181501*

**Time: Three Hours**

**Maximum: 100 marks**

**I. Elaborate on:**

**(2X15=30)**

1. Discuss the technique of total circulatory arrest in infants with complex defects coming up for surgical correction.
2. Pathology of reperfusion injuries and techniques to lessen impact of reperfusion injuries.

**II. Write notes on:**

**(10X7=70)**

1. Compare the anatomy of the right versus left pulmonary artery.
2. Blood supply of trachea and bronchus.
3. Diagrammatically show the lymph nodal stations in the mediastinum and thoracic cavity.
4. Dysphagia lusoria.
5. Anatomy of the aortic root.
6. Anatomy of the sternum and methods useful in preventing dehiscence.
7. Anatomy of right ventricular outflow tract.
8. Diagnosis of pulmonary embolism.
9. Etiology of mitral stenosis.
10. Left SVC embryology and surgical relevance.

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**(LE 025)**

**FEBRUARY 2014**

**Sub. Code:1501**

**M.Ch. – CARDIO VASCULAR AND THORACIC SURGERY**

**Paper – I BASIC SCIENCES**

*Q.P.Code: 181501*

**Time: Three Hours**

**Maximum: 100 marks**

**I. Elaborate on:**

**(2X15=30)**

1. Describe the development of Aortic arches & mention various surgical Anomalies that can result because of congenital malformations.
2. Role of pulmonary function test in cardio thoracic surgery

**II. Write Notes on:**

**(10X7=70)**

1. Patho-anatomy of Double chamber right ventricle
2. Pathology of Extra lobar Sequestration
3. Applied physiology of Oxygen – hemoglobin dissociation curve.
4. Etiology of Primary pulmonary hypertension.
5. Conditions causing Dysphagia lusoria
6. Describe Cardiac pacemaker& its applications
7. Surgical anatomy of diaphragm.
8. Ultrafiltration technique in pediatric cardiac surgery
9. Schatzki`s ring
10. Left Fibrous Trigone Relations.

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