

April-2001

[KD 005]

Sub. Code : 1151

D.M. DEGREE EXAMINATION

(Higher Specialities)

Branch II — Cardiology

(Revised Regulations)

Paper I — BASIC SCIENCES — CARDIOLOGY

Time : Three hours

Maximum : 100 marks

Answer ALL questions

1. Discuss the Newer Risk Factors in Atherosclerosis and Coronary Artery Disease. (25)
2. Describe the embryological basis for common Congenital Heart Diseases. (25)
- 3 Write short notes on : (5 × 10 = 50)
 - (a) Carvedilol.
 - (b) Prevalence of cardiovascular diseases in India.
 - (c) Circadian Rhythm.
 - (d) Pericardial Fluid Examination.
 - (e) LV function in HOCM.

[KE 005]

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Branch II — Cardiology

Paper I — BASIC SCIENCES — CARDIOLOGY

Time : Three hours

Maximum : 100 marks

Answer ALL questions.

1. Describe the principles of measurement of myocardial blood flow in humans and the importance of coronary flow reserve. (25)
2. What is myocardial wall stress and how does it influence preload and afterload and which way also it influences the myocardial oxygen demand? (25)
3. Write short notes on : (5 × 10 = 50)
 - (a) Trans fatty acids
 - (b) Differentiation between post infarct diastolic and systolic heart failure
 - (c) Pousieulles Law and its relevance to the control of blood pressure
 - (d) Role of ryanodine receptor
 - (e) Describe how exercise causes arteriolar dilatation.

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Branch II — Cardiology

Paper I — BASIC SCIENCES — CARDIOLOGY

Time : Three hours -Maximum : 100 marks

Answer ALL questions.

1. Describe the normal developmental abnormalities of the Conotruncus. Describe the clinical findings, diagnosis and management of one of the congenital defects of the Conotruncus. (25)
2. Describe the major ion channels that regulate vascular tone. Which of these are susceptible to drug action. (25)
3. Write short notes on : (5 × 10 = 50)
 - (a) Primary prevention of hypertension
 - (b) Function of Phospholamban
 - (c) Mechanism of preconditioning
 - (d) Pathophysiology of constrictive pericarditis
 - (e) Heart rate variability.

September-2002

[KH 005]

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D.M. DEGREE EXAMINATION.

(Higher Specialities)

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Branch II — Cardiology

Paper I — BASIC SCIENCES — CARDIOLOGY

Time : Three hours

Maximum : 100 marks

Answer ALL questions.

1. Discuss the development, signs, symptoms and treatment of transposition of great vessels. (25)
2. Write in detail about segmental approach to congenital heart diseases. (25)
3. Write short notes on : (5 × 10 = 50)
 - (a) Role of statins in coronary artery disease
 - (b) Endothelial relaxing factor
 - (c) Right ventricle
 - (d) HIS bundle electrography
 - (e) Write about second heart sound in health and disease.

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Paper I — BASIC SCIENCES — CARDIOLOGY

Time : Three hours

Maximum : 100 marks

Answer ALL questions.

1. Discuss the role of infections in the pathogenesis of Atherosclerotic Coronary Artery Disease. (25)
 2. Describe the ultra structure of the myocardium and give a note on excitation-contraction coupling of working myocardial cell. (25)
 3. Write short notes on : (5 × 10 = 50)
 - (a) Nebivolol
 - (b) 'J' wave
 - (c) ECG changes in Hyperkalemia
 - (d) Absence of the pericardium
 - (e) AIDS and cardiovascular system.
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Branch II — Cardiology

Paper I — BASIC SCIENCES — CARDIOLOGY

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.

A. Essay :

(2 × 15 = 30)

(1) Describe in detail about arterial matrix and its role in atherosclerosis.

(2) Draw the diagram of cardiac cycle incorporating the left ventricular and left atrial pressures, phonocardiogram and ECG and discuss briefly.

B. Write briefly about :

(10 × 5 = 50)

- (1) Myocardial contractile proteins
- (2) Altered physiology in cardiac tamponade
- (3) Ischemic preconditioning
- (4) Small dense LDL
- (5) Dippers and nondippers
- (6) Arginin vasopressin
- (7) Myocardial wall stress
- (8) Tissue ACE
- (9) Ventricular noncompaction
- (10) Embryological basis of conotruncal anomalies.

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Paper I — BASIC SCIENCES — CARDIOLOGY

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. (1) Describe in detail the anatomy and physiology of vascular endothelium. (15)

(2) Discuss the anatomy and physiology of specialized conduction system of the heart with special reference to the accessory pathways. (15)

II. Write briefly about : (10 × 5 = 50)

(a) G proteins

(b) Altered physiology in constrictive pericarditis

- (c) Myocardial stunning
 - (d) Apoptosis
 - (e) Lepirudin
 - (f) Aspirin resistance
 - (g) Myocardial bridges
 - (h) Apoproteins
 - (i) BNP
 - (j) Embryologic basis of Ebstein's anomaly.
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Paper I — BASIC SCIENCES — CARDIOLOGY

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 in detail the development of
Cono truncal septum and its implications in Cardiology.**

**(2) Describe in detail the development of inter
atrial septum and its implications.**

II. Short notes :

(10 × 5 = 50)

(a) Lipo-protein a (Lpa).

(b) Oxidized LDL.

(c) Adrenergic receptor.

(d) Laplace law.

(e) Paradoxical splitting of second sound.

(f) Pulsus paradoxus.

(g) Inheritance patterns in LQTS.

(h) Hepato Jugular reflex.

(i) Homocysteine.

(j) Coronary collaterals.

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Branch II – Cardiology

Paper I — BASIC SCIENCES – CARDIOLOGY

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 various factors that regulate Cardiac output. Describe the methods used for the calculation of Cardiac output. (20)

(2) Give a brief account of the role of renin-angiotensin system in the regulation of blood pressure in humans. Discuss the current role of angiotensin receptor blockers in cardiology. (15)

(3) Describe foetal circulation. (15)

II. Short notes :

(6 × 5 = 30)

- (a) Systemic vascular resistance.
 - (b) Quantification of left to right shunts.
 - (c) Coronary flow reserve.
 - (d) Left ventricular pressure – volume loop.
 - (e) Nebivolol.
 - (f) Torsemide.
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Branch II — Cardiology

Paper I — BASIC SCIENCES — CARDIOLOGY

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. Long Essay :

1. Discuss Renin-Angiotensin-Aldosterone system, its role in Heart Failure and its application in treatment of Heart Failure. (20)

2. Discuss physiology of coronary circulation. (15)

3. Discuss ventricular remodeling. (15)

II. Short notes :

(6 × 5 = 30)

(a) Pulmonary vascular resistance

(b) Torcetrapib

(c) Split second heart sound

(d) T-Wave alternans

(e) Specific indices of global LV systolic function

(f) Myocardial stunning.

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II. Short notes :

(6 × 5 = 30)

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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. Long Essay :

1. Discuss Endothelial function in health and disease and its role in early coronary artery disease. (20)
2. Discuss diastolic function in health and disease. Add a note on its evaluation. (15)
3. Discuss embryogenesis of cono truncal anomalies. (15)

- (a) Metabolic syndrome.
 - (b) Third Heart sound.
 - (c) Poly unsaturated fatty acids.
 - (d) Treppe phenomenon.
 - (e) Venturi effect.
 - (f) Ashman phenomenon.
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August 2008

[KT 005]

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D.M. DEGREE EXAMINATION

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Branch II - Cardiology

Paper I – BASIC SCIENCES - CARDIOLOGY

Q.P. Code: 161151

Time: Three hours

Maximum: 100 Marks

ANSWER ALL QUESTIONS

Draw suitable diagrams wherever necessary.

I. Essays:

2 x 20 = 40 Marks

1. Discuss cardio-vascular changes in normal pregnancy.
2. Discuss Aortic- Arch anomalies.

II. Write short notes on:

10 x 6 = 60 Marks

1. First – Heart sound
 2. Starlings's law.
 3. HDL – Cholesterol.
 4. Determinants of myocardial oxygen demand (MVO₂).
 5. Heparin induced thrombocytopenia.
 6. Ranolazine.
 7. Pulsus Acternans.
 8. ST-Segment elevation on surface ECG.
 9. Hypokalemia
 10. Pericardium.
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February 2009

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Paper I – BASIC SCIENCES - CARDIOLOGY

Q.P. Code: 161151

Time: Three hours

Maximum: 100 Marks

Answer ALL questions

Draw suitable diagrams wherever necessary.

I. Essays:

2 x 20 = 40

1. Embryogenesis of coronary circulation and its malformations.
2. Genetic basis of cardiovascular diseases.

II. Write short notes on:

10 x 6 = 60

1. Biomarkers of atherosclerosis.
2. Transfatty acids.
3. Non ionic contrast agents.
4. Pulsus paradoxus.
5. Cannon waves.
6. Upstream Glycoprotein II b/III a inhibitors in Acute coronary syndrome.
7. Fascicular blocks.
8. Anatomy of mitral valve.
9. Action potential of cardiac muscle.
10. Dynamic auscultation.

August 2009

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Paper I – BASIC SCIENCES - CARDIOLOGY

Q.P. Code: 161151

Time: Three hours

Maximum: 100 Marks

Answer ALL questions

Draw suitable diagrams wherever necessary.

I. Essays:

2 x 20 = 40

1. Discuss “Foetal Circulation”.
2. Discuss “Cono – Truncal anomalies”.

II. Write short notes on:

10 x 6 = 60

1. Third heart sound (S3).
2. Fick's principles.
3. Lipoprotein – A (LP (a)).
4. Pulmonary vascular resistance (PVR).
5. Anti-factor Xa compounds.
6. Ivabradine.
7. Pulsus paradoxus.
8. Q-T interval on ECG.
9. Hypercalcemia.
10. Right ventricle.
