[KM 124]　　　　　　　　**Sub. Code : 2021**

M.D. DEGREE EXAMINATION.

(Revised Regulations)

Branch V — Physiology

Paper II — CIRCULATION, RESPIRATION, ENVIRONMENTAL PHYSIOLOGY AND EXCRETION

Time : Three hours　　　　　Maximum : 100 marks

Theory : Two hours and　　　　Theory : 80 marks
　　forty minutes

M.C.Q. : Twenty minutes　　　M.C.Q. : 20 marks

Answer ALL questions.

Draw suitable diagrams wherever necessary.

I.　Essay :　　　　　　　　　(2 × 15 = 30)

(1)　Describe the conduction system of the heart. Explain the physiological significance of A-VNODAL delay.

(2)　Describe the role of kidneys in the conservation of electrolytes & water in the ECF.

II.　Write short notes on :　　　　(10 × 5 = 50)

(a)　Describe three properties of the heart and their physiological significance.

(b)　Normal electrical axis of the heart and its applied aspect.

(c)　Describe the factors regulating GFR.

(d)　Countercurrent mechanism.

(e)　Describe the physiological responses during acclimatization

(f)　Phonocardiogram

(g)　Chemical regulation of blood pressure.

(h)　Cardio acceleratory and deacceleratory mechanisms.

(i)　Role of surfactants in pulmonary function

(j)　Describe chemo receptors and their role in the regulation of respiration.

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[KP 124]　　　　　**Sub. Code : 2021**

M.D. DEGREE EXAMINATION.

Branch V — Physiology

Paper II — CIRCULATION, RESPIRATION, ENVIRONMENTAL PHYSIOLOGY AND EXCRETION

Time : Three hours　　　　Maximum : 100 marks

Theory : Two hours and　　　Theory : 80 marks
　　forty minutes

M.C.Q. : Twenty minutes　　M.C.Q. : 20 marks

Answer ALL questions.

Draw suitable diagrams wherever necessary.

I.　Essay :

(1)　Define acidosis and alkalosis. Explain the role of blood, kidneys and lungs in the regulation of pH of blood.　(20)

(2)　Explain the mechanism of genesis of hemorrhagic shock : Write in detail the normal compensatory mechanism.　(15)

(3)　Describe in detail the conducting system in the heart.　(15)

II.　Write short notes on :　　　(6 × 5 = 30)

(a)　Role of urea in Medullary osmotic gradient.

(b)　Structure-function relationship in proximal convoluted tubules.

(c)　2, 3 DPG in oxy Hemoglobin dissociation curve.

(d)　Explanation of E.C.G changes following Myocardial infarction.

(e)　Brown fat.

(f)　Urinary Bladder following complete spinal Transection.

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[KQ 121]   Sub. Code : 2021

M.D. DEGREE EXAMINATION.

Branch V — Physiology

CIRCULATION, RESPIRATION, ENVIRONMENTAL PHYSIOLOGY AND EXCRETION

Common to :

Paper II — (Old/New/Revised Regulations)

(Candidates admitted from 1988–89 onwards)

And

Paper II — (For candidates admitted from 2004–05 onwards)

Time : Three hours   Maximum : 100 marks

Theory : Two hours and   Theory : 80 marks
forty minutes

M.C.Q. : Twenty minutes   M.C.Q. : 20 marks

Answer ALL questions.

Draw suitable diagrams wherever necessary.

I.   Essay :

1.   Discuss the role of cardiovascular baroreceptors in the short-term regulation of blood pressure.   (20)

2.   Describe the mechanism and regulation of surfactant synthesis in lungs and explain the role of surfactant in mechanics of breathing.   (15)

3.   Discuss the importance of tubuloglomercular feedback in the regulation of kidney functions.   (15)

II.   Write short notes on :   (6 × 5 = 30)

(a)   Acute mountain sickness.

(b)   Left ventricular pressure-volume loop in systolic and diastolic dysfunctions.

(c)   Role of glomerular mesangial cells in glomerular filtration.

(d)   Effects of sympathetic and parasympathetic stimulation on pacemaker potential.

(e)   Medullary central pattern generator for respiration.

(f)   Application of Bernoulli's principle in dynamics of blood flow.

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MARCH 2008

[KS 122]   **Sub. Code : 2019**

M.D. DEGREE EXAMINATION.

Branch V — Physiology

Paper II — CIRCULATION, RESPIRATION, ENVIRONMENTAL
PHYSIOLOGY, COMPARATIVE PHYSIOLOGY AND EXCRETION

(Common to all candidates)

Q.P. Code : 202019

Time : Three hours   Maximum : 100 marks

Answer ALL questions.

Draw diagram wherever necessary.

I.   Essay Questions :   (2 × 20 = 40)

1.   Describe the mechanisms of control of the cardio vascular
system.   (20)

2.   Describe the cardio - respiratory changes during exercise.

(20)

II.   Write Short notes on :   (10 × 6 = 60)

1.   Law of Laplace and its physiological applications

2.   Juxtaglomerular feedback

3.   The role of counter - current mechanism in producing
hypertonic and hypotonic urine

4.   Renal handling of H^+ secretion

5.   Compensatory mechanism of shock

6.   Carotid chemoreceptors

7.   Effects of gravity on cardiovascular system

8.   Oxygen therapy

9.   High pressure nervous syndrome

10.   Pathophysiology of asthma.

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[KT 122]   **Sub. Code: 2019**

M.D. DEGREE EXAMINATION

Branch V – Physiology

Paper II – CIRCULATION, RESPIRATION, ENVIRONMENTAL PHYSIOLOGY, COMPARATIVE PHYSIOLOGY AND EXCRETION

(Common to all candidates)

Q.P. Code : 202019

Time : Three hours   **maximum : 100 marks**

Draw suitable diagram wherever necessary.

Answer ALL questions.

I. Essay questions :   **(2 X 20 = 40)**

1. "Hypertension is a syndrome not a disease". Discuss.

2. Explain elaboratively regulation of respiration – various mechanisms involved.

II. Write short notes on :   **(10 X 6 = 60)**

1. Cardiac cycle.

2. Counter current mechanism.

3. Hypoxia.

4. SCUBA

5. Respiratory distress syndrome.

6. ECG.

7. Renin Angiotension system.

8. Atonic bladder

9. Heart Sounds.

10. GFR

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