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**MD Physiology
EXAMINATION, Nov 2016**

Paper First

**GENERAL AND CELLULAR PHYSIOLOGY INCLUDING GENETIC BASIC AND
HISTORICAL PERSPECTIVES.**

Time: Three Hours]

[Maximum Marks: 100

Note: Attempt all questions. Draw well labeled diagrams wherever necessary.

1. Describe genesis of membrane potential and explain Gibbs Donnan equilibrium. [20]
2. Discuss , the sequence of electrical & ionic events leading from an action potential in motor nerve to contraction of a skeletal muscle. [20]
3. Write short notes on: [10x6]
 - a. Epitopes
 - b. Patch clamp technique
 - c. Zinc fingers
 - d. Apoptosis
 - e. Growth factors
 - f. Cell adhesion molecules.

Printed page (s): 1

Paper Code: MD-106

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**MD Physiology
EXAMINATION, Nov 2016**

Paper Second

**SYSTEMIC PHYSIOLOGY (SYSTEM PROVIDING TRANSPORT, NUTRITION AND
ENERGY INCLUDING COMPARATIVE PHYSIOLOGY)**

Time: Three Hours]

[Maximum Marks: 100

Note: Attempt all questions. Draw well labeled diagrams wherever necessary.

1. Mention the pulmonary function tests useful in assessing the diagnosis and prognosis of a lung disease. [20]
2. Describe the conduction system of the heart. Explain the physiological significance of AV nodal delay. [20]
3. Describe renal control of acid-base balance. [20]
4. Write briefly about – [10x4]
 - a. How does administration of anti-D help mothers with Rh incompatibility.
 - b. Cytokines
 - c. Brown fat
 - d. Lactose intolerance

Printed page (s): 1

Paper Code: MD-107

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MD Physiology
EXAMINATION, Nov 2016

Paper Third

**SYSTEMIC PHYSIOLOGY (SYSTEM CONCERNED WITH PROCREATION,
REGULATION AND NEURAL CONTROL)**

Time: Three Hours]

[Maximum Marks: 100

Note: Attempt all questions. Draw well labeled diagrams wherever necessary.

1. Describe and explain the various characteristic features of visceral pain. [25]
2. Describe the body pools of calcium and discuss the hormonal regulations of blood calcium levels. [25]
3. Discuss the role of chromosomes, hormones and related factors in sex determination and development. [20]
4. Write notes on: [10x3]
 - a. Regulation of coronary blood flow
 - b. Insulin – Glucagon molar ratio
 - c. Electro – encephalogram (EEG)

Printed page (s): 1

Paper Code: MD-108

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**MD Physiology
EXAMINATION, June 2016**

Paper Fourth

APPLIED PHYSIOLOGY INCLUDING RECENT ADVANCES.

Time: Three Hours]

[Maximum Marks: 100

Note: Attempt all questions. Draw well labeled diagrams wherever necessary.

1. Describe the recent concept of relationship between thyroid disorders and type 2 diabetes mellitus. [25]
2. Discuss the physiology of acclimatization at high altitude. [25]
3. Write short notes on – [10x5]
 - a. Heart rate variability.
 - b. Brown fat
 - c. Circadian rhythm and sleep
 - d. Free radicals
 - e. O₂ deficit & O₂ dept.

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**MD Physiology
EXAMINATION, June 2016**

Paper First

**GENERAL AND CELLULAR PHYSIOLOGY INCLUDING GENETIC BASIC AND
HISTORICAL PERSPECTIVES.**

Time: Three Hours]

[Maximum Marks: 100

Note: Attempt all questions. Draw well labeled diagrams wherever necessary.

1. Describe the principle ways that the chemical messengers in the extracellular fluid produce changes inside cells, including gene expression. [20]
2. Describe genesis of membrane potential & explain Gibbs- Donnan equilibrium. [20]
3. Write short notes on: [10x6]
 - a. Role of G-protein as intracellular signaling molecules
 - b. Neurophins
 - c. Epitopes
 - d. Oxidative phosphorylation enzymes of mitochondria
 - e. Apoptosis
 - f. Classification of nerve fibers .

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**MD Physiology
EXAMINATION, June 2016**

Paper Second

**SYSTEMIC PHYSIOLOGY (SYSTEM PROVIDING TRANSPORT, NUTRITION AND
ENERGY INCLUDING COMPARATIVE PHYSIOLOGY)**

Time: Three Hours]

[Maximum Marks: 100

Note: Attempt all questions. Draw well labeled diagrams wherever necessary.

1. Explain the various factors that contribute to the elastic recoil tendency of the lung. Correlate the respiratory problem in emphysema & Respiratory distress syndrome with the role of these factors. [20]
2. Discuss the mechanisms that help to regulate mean arterial blood pressure soon after blood loss. [20]
3. Describe various tests employed to evaluate the functions of kidney. [20]
4. Write briefly about – [10x4]
 - a. It has been observed that plasma from anaemic animals is injected intravenously into normal animals, the reticulocyte count of normal animals raises sharply. How would you explain this experimental observation?
 - b. Biological oxidation
 - c. Reasons for salt restricted diet in hypertension.
 - d. Steatorrhoea

Printed page (s): 1

Paper Code: MD-107

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**MD Physiology
EXAMINATION, Nov 2016**

Paper Third

**SYSTEMIC PHYSIOLOGY (SYSTEM CONCERNED WITH PROCREATION,
REGULATION AND NEURAL CONTROL)**

Time: Three Hours]

[Maximum Marks: 100

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**MD Physiology
EXAMINATION, June 2016**

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