

POST GRADUATE EXAMINATION, MAY - 2018

MD PHYSIOLOGY  
(PAPER ONE)

GENERAL PHYSIOLOGY

[Time allotted: Three hours]

[Max Marks: 100]

Note: Attempt all questions  
Illustrate with suitable diagram.

Q. 1. Describe the generation of a hyperosmotic renal medulla and urine. (20)

Q. 2. Describe the classical and alternative pathway of complement system. (20)

Q. 3. Describe briefly: (3 x 10 = 30)

- a. Active transport.
- b. Mechanism of coagulation and disorders affecting blood coagulation.
- c. Body fluid compartments and their measurement.

Q. 4. Write short notes on: (5 x 6 = 30)

- a. Gibbs-Donnan equation
- b. Student's t test
- c. Tests used in assessment of iron deficiency
- d. Schematic broad outline of haemopoiesis
- e. Artificial kidney (Dialysis)

X

POST GRADUATE EXAMINATION, MAY - 2018

MD PHYSIOLOGY  
(PAPER TWO)

CARDIOVASCULAR PHYSIOLOGY, RESPIRATORY PHYSIOLOGY, G.I.T & HEPATIC PHYSIOLOGY,  
ENVIRONMENTAL & SPORTS PHYSIOLOGY, NUTRITION & METABOLISM

[Time allotted: Three hours]

[Max Marks: 100]

Note: Attempt all questions  
Illustrate with suitable diagram.

- Q. 1. Describe the regulation of cardiac output. Mention the effect of exercise on the same. (20)
- Q. 2. Describe the gastrointestinal motility. Enumerate the various reflexes operating in the intestines. (20)
- Q. 3. Describe briefly: (3 x 10 = 30)
- Pathophysiology of peptic ulcers
  - Pathophysiology of various hypoxias
  - Neural control of respiration
- Q. 4. Write short notes on: (5 x 6 = 30)
- Oxy hemoglobin dissociation curve and its significance
  - Periodic breathing
  - ECG
  - Caisson's disease
  - Anaphylactic shock

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X

## POST GRADUATE EXAMINATION, MAY - 2018

## MD PHYSIOLOGY

(PAPER THREE)

CNS & SPECIAL SENSES, ENDOCRINE PHYSIOLOGY, REPRODUCTIVE PHYSIOLOGY,  
NERVE-MUSCLE PHYSIOLOGY

[Time allotted: Three hours]

[Max Marks: 100]

Note: Attempt all questions  
Illustrate with suitable diagram.

- Q. 1. Describe the pathophysiology of pain in detail. Add a note on endogenous opioid system. (20)
- Q. 2. Describe menstrual cycle in detail and hormonal regulation of menstrual cycle. (20)
- Q. 3. Describe briefly: (3 x 10 = 30)
- Molecular mechanism of skeletal muscle contraction and relaxation
  - Define synapse and various properties of synaptic transmission
  - Calcium metabolism and its regulation
- Q. 4. Write short notes on: (5 x 6 = 30)
- Theories of colour vision
  - Light and dark adaptation
  - Parkinson's disease
  - Functions of limbic system
  - Functions of middle ear

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POST GRADUATE EXAMINATION, MAY - 2018

MD PHYSIOLOGY

(PAPER FOUR)

RECENT ADVANCES

[Time allotted: Three hours]

[Max Marks: 100]

**Note:** Attempt all questions  
Illustrate with suitable diagram.

**Q. 1.** Describe the basal ganglia, and list the pathways that interconnect them, along with the neurotransmitters in each pathway. (20)

**Q. 2.** Describe the role of second messengers in signal transduction and regulation of gene expression. (20)

**Q. 3. Describe briefly:** (3 x 10 = 30)

- a. Tubulo-glomerular feedback and glomerulo-tubular balance
- b. Acute effects of high altitude on respiration, and discuss acclimatization to altitude
- c. Types of glucose transporters found in the body and the function of each

**Q. 4. Write short notes on:** (5 x 6 = 30)

- a. Migrating motor complex (MMC)
- b. Sinus arrhythmia
- c. Effects of baroreceptor denervation
- d. CD4 and CD8 T lymphocytes
- e. On center and off center cells

X