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**First BPTH (2012) Examination, Summer  
(Phase - III All Other Remaining UG/PG Courses) - 2020  
HUMAN PHYSIOLOGY - II**

Total Duration : Section A + B = 3 Hours

Total Marks : 80

**SECTION - A & SECTION - B**

- Instructions :**
- 1) Use **blue/black** ball point pen only.
  - 2) **Do not write anything on the blank portion of the question paper.** If written anything, such type of act will be considered as an attempt to resort to unfair means.
  - 3) **All questions are compulsory.**
  - 4) The number to the **right** indicates **full marks.**
  - 5) Draw diagrams **wherever necessary.**
  - 6) Distribution of syllabus in Question Paper is only meant to cover entire syllabus within the stipulated frame. The Question paper pattern is a mere guideline. Questions can be asked from any paper's syllabus into any question paper. Students cannot claim that the Question is out of syllabus. As it is only for the placement sake, the distribution has been done.
  - 7) Use a common answer book for all sections.

**SECTION - "A" SAQ (50 Marks)**

1. Short answer question (any five out of six) : [5 × 3 = 15]

- a) Functions of blood.
- b) Ovulatory phase of menstrual cycle.
- c) Gigantism.
- d) Structure of Cell membrane.
- e) Regulation of thyroid hormone secretion.
- f) Presbiopia.

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[5 × 7 = 35]

2. Short answer question (any five out of six) :

- a) Oxygen debt.
- b) Respiratory adaptations to exercise.
- c) Strength duration curve.
- d) Renin angiotensin system.
- e) Oxygen - Hb dissociation curve.
- f) Lead II ECG.

**SECTION - "B" LAQ (30 Marks)**

3. Long answer question (any one out of two) :

[1 × 15 = 15]

- a) Describe sarcotubular system. What is excitation - contraction coupling?
- b) Describe properties of skeletal muscle fiber.

4. Long answer question (any one out of two) :

[1 × 15 = 15]

- a) Describe lateral spinothalamic tract.
- b) Describe synaptic transmission in CNS. Enumerate properties of synapse.



First B.P.T.H. (2012) Examination, Summer - 2021  
HUMAN PHYSIOLOGY - II

Total Duration 3 Hours



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  - 7) Use a common answer book for all sections.

**SECTION "A" (SAQ) (50 Marks)**

- I. Short answer question (any five out of six): [5 × 3 = 15]
- a) Deglutition
  - b) What is LH surge? Describe the various phases of ovarian cycle.
  - c) Define GFR. Give its normal value. State the determinants of GFR.
  - d) Draw a neat and labeled diagram of visual pathway. Discuss the various lesions across the pathway
  - e) Define immunity. Discuss cell mediated immunity
  - f) Define homeostasis. Describe the positive feedback mechanism

2. Short answer question (any five out of six):
- a) Discuss the characteristic features of pulmonary circulation
  - b) Define Shock. Discuss the various stages of circulatory shock.
  - c) Describe the role of insulin in blood glucose homeostasis
  - d) Functions of basal ganglia. Add a note on Parkinsonism.
  - e) Give the classification of nerves. Explain any 4 properties of the nerves.
  - f) Discuss the various physiological changes observed in a person acclimatized at high altitude

**SECTION "B" (LAQ) (30 Marks)**

3. Long answer question (any one out of two): [1 × 15 = 15]
- a) State the various modes of carbon dioxide transport in blood. Describe in detail the Chloride shift. Discuss Haldane effect.
  - b) i) Define cardiac output, stroke volume, cardiac index, & ejection fraction with their normal values. [4]
  - ii) Discuss the determinants and factors affecting the cardiac output. [9]
  - iii) Name any 2 methods for measuring cardiac output. [2]
4. Long answer question (any one out of two) [1 × 15 = 15]
- a) Discuss in detail the various properties of skeletal & cardiac muscles. [11]
  - b) i) Describe the dorsal column pathway. [2]
  - ii) Describe the sensations carried by this tract. [2]
  - iii) What is sensory ataxia? [2]



First B.P.TH. (2012) Examination, Phase - II Summer  
HUMAN PHYSIOLOGY



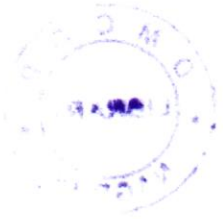
Total Duration : 3 Hours

Total Marks : 80

- Instructions :**
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  - 3) All questions are compulsory.
  - 4) The number to the right indicates full marks.
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  - 7) Use a common answerbook for all sections.

SECTION "A" SAQ (50 Marks)

1. Short answer question (any five out of six) : [5 × 3 = 15]
  - a) Active transport across the cell membrane.
  - b) State the functions of middle ear.
  - c) Erythroblastosis Foetalis.
  - d) Define GFR. Give its normal value. State the determinants of GFR.
  - e) Acromegaly.
  - f) Functions of saliva.
  
2. Short answer question (any five out of six) : [5 × 7 = 35]
  - a) Define Shock. State the various compensatory mechanisms occurring during non-progressive stage of shock.
  - b) Describe the properties of Synapse.



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- c) Describe left ventricular pressure and volume changes during cardiac cycle.
- d) Describe Anti Diuretic Hormone.
- e) Draw a neat and labelled diagram of Oxygen haemoglobin dissociation curve. Add a note on Bohr's effect.
- f) State the differences between Fast and Slow muscle fibers.

**SECTION "B" LAQ (30 Marks)**

Long answer question (any one out of two) :

**[1 × 15 = 15]**

- a) Describe three important ascending tracts in central nervous system.
- b) Describe the carbondioxide transport in the body.

Long answer question (any one out of two) :

**[1 × 15 = 15]**

- a) What are the energy sources used during muscle contraction? Describe the molecular mechanism of muscle contraction. Add a note on myasthenia gravis.
- b) Describe in detail the various cardio-respiratory changes occurring during moderate intensity exercise.



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First B.P.TH. (2012) Examination, Summer - 2023 (Phase III)  
HUMAN PHYSIOLOGY

Total Duration : 3 Hours

Total Marks : 80

- Instructions :
- 1) Use **black ball point pen only**
  - 2) Do not write anything on the blank portion of the question paper. If written anything, such type of act will be considered as an attempt to resort to unfair means.
  - 3) All questions are **compulsory**.
  - 4) The number to the **right** indicates **full marks**.
  - 5) Draw diagrams **wherever necessary**.
  - 6) Distribution of syllabus in Question Paper is only meant to cover entire syllabus within the stipulated frame. The Question paper pattern is a mere guideline. Questions can be asked from any paper's syllabus into any question paper. Students cannot claim that the Question is out of syllabus. As it is only for the placement sake, the distribution has been done.
  - 7) Use a common answerbook for all sections.

Section "A" SAQ (50 Marks)

1. Short answer question (any five out of six) :

[5 × 3 = 15]

- a) Rh incompatibility.
- b) Facilitated diffusion.
- c) Actions of testosterone.
- d) Juxta glomerular apparatus.
- e) Functions of bile.
- f) Acromegaly.

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[5 × 7 = 35]

2. Short answer question (any five out of six) :

- a) Origin and spread of cardiac impulse.
- b) Oxygen debt.
- c) Hypoxia.
- d) Resting membrane potential.
- e) Stretch reflex.
- f) Oxygen haemoglobin dissociation curve.

Section "B" LAQ (30 Marks)

3. Long answer question (any one out of two) :

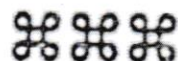
[1 × 15 = 15]

- a) Draw a well labelled diagram of sarcomere. Describe the molecular basis of muscle contraction. Enumerate the differences between slow and fast muscle.
- b) Define Cardiac output and cardiac index. Describe the regulation of Cardiac output.

4. Long answer question (any one out of two) :

[1 × 15 = 15]

- a) Enumerate the ascending tracts of the Spinal cord. Describe in detail the Spinothalamic tracts. Add a note on Brown - Sequard Syndrome
- b) Describe the neural regulation of Respiration. Add a note on Periodic breathing.



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First B.P.TH. (2012) Examination, Summer - 2025 Phase - II

**HUMAN PHYSIOLOGY**



Total Duration : 3 Hours

Total Marks : 80

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  - 3) **All questions are compulsory.**
  - 4) The number to the **right** indicates **full** marks.
  - 5) Draw diagrams **wherever** necessary.
  - 6) Distribution of syllabus in Question Paper is only meant to cover entire syllabus within the stipulated frame. The Question paper pattern is a mere guideline. Questions can be asked from any paper's syllabus into any question paper. Students cannot claim that the Question is out of syllabus. As it is only for the placement sake, the distribution has been done.
  - 7) Use a common answerbook for **all** sections.

**SECTION-A (SAQ) (50 Marks)**

1. Short Answer Questions (Solve any 5 out of 6): [5×3=15]

- a) What is Gain of a control mechanism ? What is its significance?
- b) What is Laplace Law ? Give its application.
- c) Classify White Blood Cells with important functions of each.
- d) Define Sarcomere. Enumerate important properties of Skeletal muscle.
- e) Define Glomerular Filtration Rate (GFR). Give its normal value.
- f) Define Isometric and Isotonic Contraction with suitable example of each.

2. **Short Answer Questions (Solve any 5 out of 6):** [5×7=35]

- Acromegaly.
- Describe the Juxta-Glomerular apparatus. Add a note on diuretics.
- Cushing's Syndrome.
- Draw a neat & labeled diagram of Respiratory membrane. Explain the factors affecting diffusion across the membrane.
- Describe Cardio- respiratory changes during acute exercise.
- Describe the role of respiratory centers in neural regulation of respiration.

**SECTION-B (LAQ) (30 Marks)**

3. **Long Answer Questions (Solve any 1 out of 2):** [1×15=15]

- Define Hemostasis. What are the stages of hemostasis? Explain in detail the mechanism blood coagulation.
- Explain in detail the Sliding filament theory of Skeletal muscle contraction. Add a note on energetics of muscle contraction.

4. **Long Answer Questions (Solve any 1 out of 2):** [1×15=15]

- Describe and differentiate the properties of skeletal, cardiac & smooth muscle.
- Describe Diabetes Mellitus under following headings:  
 Definition  
 Types  
 Causes  
 Pathophysiology  
 Clinical Features  
 Physiological basis of Treatment

