NOVA INSTITUTE OF MEDICAL SCIENCES & RESEARCH CENTRE

DEPARTMENT OF PHYSIOLOGY

QUESTION BANK

PHYSIOLOGY IMPORTANT QUESTIONS FOR KNRUHS

GENERAL PHYSIOLOGY

MCQs (1 Mark)

1. Homeostasis
2. Cell membrane structure
3. Functions of cell membrane
4. Diffusion
5. Osmosis
6. Facilitated diffusion
7. Active transport
8. Sodium-potassium pump
9. Resting membrane potential
10. Action potential
11. Threshold potential
12. Refractory period
13. Body fluid compartments
14. Intracellular fluid (ICF)
15. Extracellular fluid (ECF)
16. Osmolarity
17. pH of blood
18. Buffer systems
19. Feedback mechanisms
20. Second messengers

PHYSIOLOGY IMPORTANT QUESTIONS FOR KNRUHS

VSAQ (3 Marks)

1. Homeostasis
2. Cell membrane
3. Diffusion
4. Osmosis
5. Facilitated diffusion
6. Active transport
7. Sodium-potassium pump
8. Resting membrane potential
9. Action potential
10. Refractory period
11. Body fluid compartments
12. Buffer systems
13. Feedback mechanisms
14. Osmolarity
15. pH regulation
16. Transport across cell membrane
17. Second messengers
18. Intercellular communication

SAQ (6 Marks)

1. Structure and functions of cell membrane
2. Transport across cell membrane
3. Diffusion and factors affecting diffusion

4. Osmosis and osmotic pressure

5. Active transport and examples

6. Sodium-potassium pump

7. Resting membrane potential

8. Action potential

9. Refractory periods

10. Body fluid compartments

11. Regulation of acid-base balance

12. Buffer systems of the body

13. Homeostasis and feedback mechanisms

14. Cell signaling and second messengers

15. Intercellular communication

LAQ (15 Marks)

1. Cell Membrane

* Structure

* Fluid mosaic model

* Functions

* Transport mechanisms

2. Transport Across Cell Membrane

* Diffusion

* Facilitated diffusion

* Osmosis

* Active transport

* Clinical significance

3. Resting Membrane Potential

PHYSIOLOGY IMPORTANT QUESTIONS FOR KNRUHS

* Definition

* Ionic basis

* Maintenance

* Significance

4. Action Potential

* Phases

* Ionic basis

* Propagation

* Refractory periods

5. Body Fluid Compartments

* Distribution of body fluids

* ICF and ECF

* Functions

* Clinical significance

6. Acid-Base Balance

* Buffer systems

* Regulation of pH

* Physiological importance

7. Homeostasis

* Definition

* Mechanisms

* Negative feedback

* Positive feedback

* Examples

High-Yield Revision List

1. Cell membrane

PHYSIOLOGY IMPORTANT QUESTIONS FOR KNRUHS

2. Transport across cell membrane

3. Diffusion

4. Osmosis

5. Active transport

6. Sodium-potassium pump

7. Resting membrane potential

8. Action potential

9. Refractory periods

10. Homeostasis

11. Body fluid compartments

12. Acid-base balance

13. Buffer systems

14. Feedback mechanisms

15. Second messengers

PHYSIOLOGY IMPORTANT QUESTIONS FOR KNRUHS

Blood (Hematology)

MCQs (1 Mark)

1. Normal hemoglobin values
2. Normal RBC count
3. Normal WBC count
4. Normal platelet count
5. Normal ESR values
6. Normal PCV values
7. Lifespan of RBC
8. Site of erythropoiesis
9. Vitamin required for erythropoiesis
10. Source of erythropoietin
11. Universal donor
12. Universal recipient
13. ABO blood groups
14. Rh factor
15. Clotting factors
16. Vitamin K-dependent clotting factors
17. Normal bleeding time
18. Normal clotting time
19. Functions of neutrophils
20. Functions of platelets

PHYSIOLOGY IMPORTANT QUESTIONS FOR KNRUHS

VSAQ (3 Marks)

1. Functions of blood
2. Plasma proteins – functions and normal values
3. Red cell indices (MCV, MCH, MCHC)
4. ESR and its clinical significance
5. Polycythemia
6. Reticuloendothelial system (Monocyte-macrophage system)
7. Purpura
8. Fibrinolytic system
9. Arneth count
10. Cellular immunity
11. Humoral immunity
12. Cross-matching
13. Rh incompatibility
14. Platelet plug formation
15. Role of calcium in coagulation
16. Hemoglobin variants
17. Functions of neutrophils
18. Anticoagulants

SAQ (6 Marks)

1. Fate (catabolism) of hemoglobin
2. Thalassemia
3. Hemophilia – types and features
4. Clotting factors
5. Immunoglobulins

6. Landsteiner's law

7. Rh incompatibility / Erythroblastosis fetalis

8. Anticoagulants and mechanism of action

9. Functions of platelets and role in hemostasis

10. Cross-matching and blood transfusion reactions

11. Pernicious anemia

12. Megaloblastic anemia

13. Iron deficiency anemia

14. Hazards of blood transfusion

15. Opsonization and complement system

LAQ (15 Marks)

1. Erythropoiesis

* Definition

* Stages

* Regulation

* Factors affecting erythropoiesis

2. Blood Coagulation

* Hemostasis

* Intrinsic pathway

* Extrinsic pathway

* Common pathway

* Disorders of coagulation

3. Blood Groups

* ABO system

* Rh system

* Landsteiner's law

* Clinical importance

* Blood transfusion

* Hemolytic disease of the newborn

4. Anemia

* Definition

* Classification

* Causes

* Clinical features

5. Hemoglobin

* Structure

* Functions

* Synthesis

* Fate of hemoglobin

* Jaundice

6. Immunity

* Classification

* Cellular immunity

* Humoral immunity

* Immunoglobulins

7. Platelets and Hemostasis

* Formation

* Functions

* Platelet plug formation

* Coagulation and fibrinolysis

PHYSIOLOGY IMPORTANT QUESTIONS FOR KNRUHS

High-Yield Revision List

1. Erythropoiesis
2. Blood coagulation
3. ABO and Rh blood groups
4. Anemia
5. Hemoglobin and jaundice
6. Functions of blood
7. Plasma proteins
8. ESR
9. Red cell indices
10. Platelet functions
11. Landsteiner's law
12. Rh incompatibility
13. Cross-matching
14. Hemophilia
15. Immunoglobulins

PHYSIOLOGY IMPORTANT QUESTIONS FOR KNRUHS

MUSCLE PHYSIOLOGY

MCQs (1 Mark)

1. Functional unit of skeletal muscle

2. Sarcomere – definition

3. Contractile proteins of muscle

4. Regulatory proteins of muscle

5. Length of sarcomere

6. Neuromuscular junction

7. Neurotransmitter at NMJ

8. Motor unit

9. Resting membrane potential of skeletal muscle

10. T-tubules

11. Sarcoplasmic reticulum

12. Excitation-contraction coupling

13. Rigor mortis

14. Isometric contraction

15. Isotonic contraction

16. Muscle spindle

17. Golgi tendon organ

18. Treppe phenomenon

19. Summation of muscle contraction

20. Fatigue in skeletal muscle

PHYSIOLOGY IMPORTANT QUESTIONS FOR KNRUHS

VSAQ (3 Marks)

1. Structure of skeletal muscle
2. Sarcomere
3. Muscle proteins
4. Neuromuscular junction
5. Motor unit
6. Excitation-contraction coupling
7. Muscle spindle
8. Golgi tendon organ
9. Rigor mortis
10. Treppe
11. Isometric contraction
12. Isotonic contraction
13. Muscle fatigue
14. Red and white muscle fibers
15. Electromyography (EMG)
16. Latent period of muscle contraction

SAQ (6 Marks)

1. Structure and functions of neuromuscular junction
2. Excitation-contraction coupling
3. Properties of skeletal muscle
4. Muscle spindle and its functions
5. Golgi tendon organ and its functions
6. Types of muscle contractions
7. Red and white muscle fibers

8. Rigor mortis

9. Muscle fatigue

10. Electromyography

11. Motor unit and recruitment

12. Length-tension relationship in muscle

LAQ (15 Marks)

1. Skeletal Muscle Contraction

* Structure of skeletal muscle

* Sarcomere

* Sliding filament theory

* Role of actin and myosin

* Mechanism of contraction

2. Excitation-Contraction Coupling

* Action potential

* Neuromuscular transmission

* Role of calcium

* Cross-bridge cycle

* Relaxation of muscle

3. Neuromuscular Junction

* Structure

* Mechanism of transmission

* End plate potential

* Disorders of NMJ

4. Properties of Skeletal Muscle

* Excitability

* Contractility

* Conductivity

* Extensibility

* Elasticity

* Muscle fatigue

5. Muscle Spindle and Golgi Tendon Organ

* Structure

* Functions

* Stretch reflex

* Clinical significance

6. Smooth Muscle and Cardiac Muscle

* Structure

* Functions

* Differences from skeletal muscle

* Comparison of all three muscle types

<u>High-Yield Revision List</u>

1. Sliding filament theory

2. Excitation-contraction coupling

3. Neuromuscular junction

4. Skeletal muscle contraction

5. Muscle spindle

6. Golgi tendon organ

7. Muscle fatigue

8. Motor unit

9. Isometric and isotonic contractions

10. Red and white muscle fibers

11. Length-tension relationship

12. Rigor mortis

13. Properties of skeletal muscle

14. Smooth muscle vs skeletal muscle

15. Cardiac muscle vs skeletal muscle

PHYSIOLOGY IMPORTANT QUESTIONS FOR KNRUHS

DIGESTIVE SYSTEM

MCQs (1 Mark)

1. Functions of the gastrointestinal tract
2. Enteric nervous system
3. Deglutition (swallowing)
4. Salivary glands
5. Composition of saliva
6. Functions of saliva
7. Gastric juice composition
8. Functions of hydrochloric acid (HCl)
9. Intrinsic factor
10. Pepsin
11. Gastrin
12. Secretin
13. Cholecystokinin (CCK)
14. Bile salts
15. Functions of bile
16. Pancreatic enzymes
17. Absorption of iron
18. Absorption of vitamin B12
19. Site of maximum absorption
20. Defecation reflex

PHYSIOLOGY IMPORTANT QUESTIONS FOR KNRUHS

VSAQ (3 Marks)

1. Functions of saliva
2. Composition of saliva
3. Deglutition
4. Gastric juice
5. Functions of HCl
6. Intrinsic factor
7. Gastrin
8. Secretin
9. Cholecystokinin (CCK)
10. Bile and its functions
11. Enterohepatic circulation
12. Pancreatic juice
13. Intestinal movements
14. Hunger contractions
15. Defecation reflex
16. Absorption of iron
17. Absorption of vitamin B12
18. Enteric nervous system

SAQ (6 Marks)

1. Salivary secretion and its regulation
2. Deglutition (mechanism of swallowing)
3. Gastric secretion and regulation
4. Functions of stomach
5. Pancreatic secretion and regulation

6. Bile secretion and functions

7. Enterohepatic circulation

8. Gastrointestinal hormones

9. Small intestinal movements

10. Digestion and absorption of carbohydrates

11. Digestion and absorption of proteins

12. Digestion and absorption of fats

13. Defecation reflex

14. Absorption of iron

15. Absorption of vitamin B12

LAQ (15 Marks)

1. Gastric Secretion

* Composition of gastric juice

* Mechanism of HCl secretion

* Regulation of gastric secretion

* Phases of gastric secretion

2. Salivary Secretion

* Composition

* Functions

* Mechanism of secretion

* Regulation

3. Pancreatic Secretion

* Composition

* Enzymes

* Regulation

* Functions

4. Bile

* Composition

* Functions

* Enterohepatic circulation

* Clinical importance

5. Digestion and Absorption of Carbohydrates

* Digestion in mouth, stomach and intestine

* Absorption mechanisms

6. Digestion and Absorption of Proteins

* Digestion

* Absorption

* Clinical significance

7. Digestion and Absorption of Fats

* Digestion

* Role of bile salts

* Absorption of lipids

8. Gastrointestinal Hormones

* Gastrin

* Secretin

* CCK

* GIP

* Functions and regulation

High-Yield Revision List

PHYSIOLOGY IMPORTANT QUESTIONS FOR KNRUHS

1. Gastric secretion and its regulation

2. Salivary secretion

3. Pancreatic secretion

4. Bile and enterohepatic circulation

5. Digestion and absorption of carbohydrates

6. Digestion and absorption of proteins

7. Digestion and absorption of fats

8. Gastrointestinal hormones

9. Deglutition

10. Defecation reflex

11. Functions of HCl

12. Intrinsic factor

13. Absorption of iron

14. Absorption of vitamin B12

15. Enteric nervous system

PHYSIOLOGY IMPORTANT QUESTIONS FOR KNRUHS

RENAL SYSTEM

MCQs (1 Mark)

1. Functional unit of kidney

2. Normal GFR value

3. Renal blood flow

4. Filtration fraction

5. Juxtaglomerular apparatus

6. Renin

7. Clearance

8. Inulin clearance

9. Creatinine clearance

10. Tubular reabsorption

11. Tubular secretion

12. Countercurrent mechanism

13. ADH

14. Aldosterone

15. Micturition reflex

16. Osmolality of plasma

17. Renal threshold for glucose

18. Concentrating mechanism of urine

19. Acidification of urine

20. Erythropoietin secretion by kidney

PHYSIOLOGY IMPORTANT QUESTIONS FOR KNRUHS

VSAQ (3 Marks)

1. Functions of kidney
2. Nephron
3. Juxtaglomerular apparatus
4. Renin
5. Glomerular filtration rate (GFR)
6. Clearance
7. Inulin clearance
8. Creatinine clearance
9. Tubular reabsorption
10. Tubular secretion
11. Countercurrent mechanism
12. ADH
13. Aldosterone
14. Renal threshold
15. Micturition reflex
16. Acid-base balance by kidney
17. Erythropoietin
18. Diuresis

SAQ (6 Marks)

1. Structure and functions of nephron
2. Glomerular filtration and factors affecting GFR
3. Juxtaglomerular apparatus and its functions
4. Renin–angiotensin–aldosterone system (RAAS)
5. Renal clearance and its significance

6. Inulin clearance

7. Creatinine clearance

8. Tubular reabsorption

9. Tubular secretion

10. Concentration and dilution of urine

11. Countercurrent mechanism

12. Regulation of water balance by ADH

13. Acidification of urine

14. Micturition reflex

15. Role of kidney in acid-base balance

LAQ (15 Marks)

1. Formation of Urine

* Glomerular filtration

* Tubular reabsorption

* Tubular secretion

* Regulation

2. Glomerular Filtration Rate (GFR)

* Definition

* Normal value

* Measurement

* Factors affecting GFR

3. Renal Clearance

* Definition

* Measurement

* Inulin clearance

* Creatinine clearance

* Significance

4. Countercurrent Mechanism

* Loop of Henle

* Vasa recta

* Concentration of urine

* Importance

5. Regulation of Water Balance

* ADH

* Osmoregulation

* Concentrated and dilute urine

6. Renin–Angiotensin–Aldosterone System (RAAS)

* Mechanism

* Regulation

* Functions

* Clinical significance

7. Micturition

* Physiology of micturition

* Micturition reflex

* Neural control

* Disorders

8. Acid-Base Balance by Kidney

* Mechanisms

* Bicarbonate reabsorption

* Hydrogen ion secretion

PHYSIOLOGY IMPORTANT QUESTIONS FOR KNRUHS

* Clinical significance

High-Yield Revision List

1. Formation of urine
2. GFR
3. Renal clearance
4. Inulin clearance
5. Creatinine clearance
6. Countercurrent mechanism
7. Concentration and dilution of urine
8. RAAS
9. ADH and water balance
10. Juxtaglomerular apparatus
11. Tubular reabsorption
12. Tubular secretion
13. Acid-base balance
14. Micturition reflex
15. Functions of kidney

PHYSIOLOGY IMPORTANT QUESTIONS FOR KNRUHS

CARDIOVASCULAR SYSTEM (CVS)

MCQs (1 Mark)

1. Normal cardiac output
2. Normal heart rate
3. Stroke volume
4. Ejection fraction
5. SA node – pacemaker of heart
6. AV node delay
7. Normal blood pressure
8. Pulse pressure
9. Mean arterial pressure
10. Cardiac cycle duration
11. First heart sound
12. Second heart sound
13. ECG waves
14. PR interval
15. QRS complex
16. T wave
17. Frank-Starling law
18. Coronary circulation
19. Baroreceptors
20. Bainbridge reflex

PHYSIOLOGY IMPORTANT QUESTIONS FOR KNRUHS

VSAQ (3 Marks)

1. Cardiac output
2. Stroke volume
3. Ejection fraction
4. Conducting system of heart
5. SA node
6. AV node
7. Heart sounds
8. Pulse
9. Pulse pressure
10. Mean arterial pressure
11. ECG
12. Baroreceptor reflex
13. Bainbridge reflex
14. Coronary circulation
15. Venous return
16. Cardiac reserve
17. Sinus arrhythmia
18. Heart rate regulation

SAQ (6 Marks)

1. Cardiac cycle
2. Heart sounds and their significance
3. Cardiac output and its regulation
4. ECG – waves and significance
5. Conducting system of heart

6. Arterial blood pressure and regulation

7. Pulse and its examination

8. Frank-Starling law of heart

9. Coronary circulation

10. Baroreceptor reflex

11. Regulation of heart rate

12. Factors affecting cardiac output

13. Venous return

14. Jugular venous pulse

15. Heart block

LAQ (15 Marks)

1. Cardiac Cycle

* Definition

* Phases

* Pressure and volume changes

* Heart sounds

* Importance

2. Electrocardiogram (ECG)

* Principle

* Lead system

* Waves, intervals and segments

* Clinical significance

3. Cardiac Output

* Definition

* Measurement

* Regulation

* Factors affecting cardiac output

4. Arterial Blood Pressure

* Definition

* Normal values

* Regulation

* Short-term and long-term control

5. Conducting System of Heart

* Components

* Pacemaker activity

* Conduction pathway

* Heart block

6. Heart Sounds

* Mechanism

* Characteristics

* Added sounds and murmurs

7. Coronary Circulation

* Blood supply of heart

* Regulation

* Clinical significance

<u>High-Yield Revision List</u>

1. Cardiac cycle

2. ECG

3. Cardiac output

4. Arterial blood pressure

5. Conducting system of heart

6. Heart sounds

7. Frank-Starling law

8. Coronary circulation

9. Baroreceptor reflex

10. Pulse and pulse pressure

11. Venous return

12. Regulation of heart rate

13. Heart block

14. Ejection fraction

15. Mean arterial pressure

PHYSIOLOGY IMPORTANT QUESTIONS FOR KNRUHS
RESPIRATORY SYSTEM

MCQs (1 Mark)

1. Functions of the respiratory system

2. Normal respiratory rate

3. Tidal volume

4. Vital capacity

5. Total lung capacity

6. Residual volume

7. Dead space

8. Surfactant

9. Compliance of lungs

10. Alveolar ventilation

11. Oxygen dissociation curve

12. Bohr effect

13. Chloride shift

14. Respiratory membrane

15. Partial pressure of oxygen (PO_2)

16. Partial pressure of carbon dioxide (PCO_2)

17. Respiratory center

18. Hering–Breuer reflex

19. Hypoxia

20. Cyanosis

VSAQ (3 Marks)

1. Functions of respiration

2. Surfactant

3. Dead space

4. Tidal volume

5. Vital capacity

6. Residual volume

7. Compliance of lungs

8. Respiratory membrane

9. Oxygen dissociation curve

10. Bohr effect

11. Chloride shift

12. Hypoxia

13. Cyanosis

14. Hering–Breuer reflex

15. Respiratory center

16. Alveolar ventilation

17. Artificial respiration

18. Pulmonary circulation

SAQ (6 Marks)

1. Mechanics of respiration

2. Lung volumes and capacities

3. Surfactant and its functions

4. Gas exchange across respiratory membrane

5. Transport of oxygen in blood

6. Transport of carbon dioxide in blood

7. Oxygen dissociation curve and factors affecting it

8. Regulation of respiration

9. Respiratory centers

10. Hypoxia – types and causes

11. Cyanosis

12. Pulmonary function tests

13. Compliance of lungs

14. Dead space and its significance

15. Hering–Breuer reflex

LAQ (15 Marks)

1. Transport of Oxygen

* Forms of oxygen transport

* Oxygen–hemoglobin dissociation curve

* Factors shifting the curve

* Significance

2. Transport of Carbon Dioxide

* Forms of transport

* Chloride shift

* Significance

3. Regulation of Respiration

* Neural regulation

* Chemical regulation

* Respiratory centers

* Chemoreceptors

4. Mechanics of Respiration

* Inspiration

* Expiration

* Muscles involved

* Intrapleural pressure changes

5. Lung Volumes and Capacities

* Definitions

* Normal values

* Measurement

* Clinical significance

6. Hypoxia

* Definition

* Types

* Causes

* Effects

7. Pulmonary Function Tests (PFTs)

* Spirometry

* Lung volumes

* Clinical applications

8. Oxygen-Hemoglobin Dissociation Curve

* Factors causing right and left shift

* Bohr effect

* Physiological importance

High-Yield Revision List

1. Transport of oxygen

2. Transport of carbon dioxide

3. Oxygen dissociation curve

4. Regulation of respiration

5. Respiratory centers

6. Mechanics of respiration

7. Lung volumes and capacities

8. Hypoxia

9. Pulmonary function tests

10. Surfactant

11. Dead space

12. Compliance of lungs

13. Chloride shift

14. Bohr effect

15. Hering–Breuer reflex

PHYSIOLOGY IMPORTANT QUESTIONS FOR KNRUHS

ENDOCRINOLOGY

MCQs (1 Mark)

1. Definition of hormone
2. Mechanism of action of hormones
3. Anterior pituitary hormones
4. Posterior pituitary hormones
5. Growth hormone (GH)
6. Prolactin
7. Oxytocin
8. ADH (Vasopressin)
9. Thyroxine (T_4)
10. Triiodothyronine (T_3)
11. Calcitonin
12. Parathyroid hormone (PTH)
13. Insulin
14. Glucagon
15. Cortisol
16. Aldosterone
17. Adrenaline
18. Noradrenaline
19. Diabetes mellitus
20. Diabetes insipidus

PHYSIOLOGY IMPORTANT QUESTIONS FOR KNRUHS

VSAQ (3 Marks)

1. Classification of hormones
2. Mechanism of hormone action
3. Functions of growth hormone
4. Functions of prolactin
5. Functions of ADH
6. Functions of oxytocin
7. Functions of thyroid hormones
8. Calcitonin
9. Parathyroid hormone
10. Functions of insulin
11. Functions of glucagon
12. Cortisol
13. Aldosterone
14. Adrenal medullary hormones
15. Diabetes mellitus
16. Diabetes insipidus
17. Cushing's syndrome
18. Acromegaly

SAQ (6 Marks)

1. Growth hormone – actions and regulation
2. Pituitary gland and its hormones
3. Thyroid hormones – actions and regulation
4. Parathyroid hormone and calcium metabolism

5. Insulin – actions and regulation

6. Glucagon – actions and regulation

7. Endocrine functions of pancreas

8. Adrenal cortex hormones

9. Cortisol – actions and regulation

10. Aldosterone – actions and regulation

11. Adrenal medulla and catecholamines

12. Diabetes mellitus

13. Diabetes insipidus

14. Cushing's syndrome

15. Acromegaly and gigantism

LAQ (15 Marks)

1. Pituitary Gland

* Anatomy

* Anterior pituitary hormones

* Posterior pituitary hormones

* Functions and regulation

2. Growth Hormone

* Actions

* Regulation

* Hypersecretion and hyposecretion

* Clinical disorders

3. Thyroid Gland

* Synthesis of thyroid hormones

* Actions

* Regulation

* Disorders

4. Endocrine Pancreas

* Insulin

* Glucagon

* Regulation of blood glucose

* Diabetes mellitus

5. Adrenal Gland

* Adrenal cortex

* Adrenal medulla

* Hormones and functions

* Regulation

6. Parathyroid Hormone

* Calcium and phosphate metabolism

* Actions

* Regulation

* Disorders

7. Mechanism of Hormone Action

* Receptor types

* Second messengers

* Steroid hormone action

* Clinical importance

High-Yield Revision List

1. Pituitary gland and its hormones

PHYSIOLOGY IMPORTANT QUESTIONS FOR KNRUHS

2. Growth hormone

3. Thyroid hormones

4. Insulin

5. Glucagon

6. Diabetes mellitus

7. Adrenal cortex hormones

8. Cortisol

9. Aldosterone

10. Adrenal medulla

11. Parathyroid hormone

12. Calcium metabolism

13. ADH

14. Diabetes insipidus

15. Mechanism of hormone action

PHYSIOLOGY IMPORTANT QUESTIONS FOR KNRUHS

REPRODUCTIVE SYSTEM

MCQs (1 Mark)

1. Functions of testes
2. Functions of ovaries
3. Spermatogenesis
4. Spermiogenesis
5. Testosterone
6. Sertoli cells
7. Leydig cells
8. Menstrual cycle duration
9. Ovulation
10. Corpus luteum
11. Estrogen
12. Progesterone
13. Puberty
14. Menopause
15. Fertilization
16. Implantation
17. Human chorionic gonadotropin (hCG)
18. Lactation
19. Oxytocin
20. Contraceptive methods

PHYSIOLOGY IMPORTANT QUESTIONS FOR KNRUHS

VSAQ (3 Marks)

1. Functions of testes
2. Testosterone
3. Sertoli cells
4. Leydig cells
5. Spermatogenesis
6. Spermiogenesis
7. Functions of estrogen
8. Functions of progesterone
9. Ovulation
10. Corpus luteum
11. Menstrual cycle
12. Menopause
13. Puberty
14. Fertilization
15. Implantation
16. Pregnancy test (hCG)
17. Lactation
18. Contraception

SAQ (6 Marks)

1. Spermatogenesis
2. Functions and regulation of testosterone
3. Oogenesis
4. Menstrual cycle

5. Ovulation and its hormonal regulation

6. Functions of estrogen

7. Functions of progesterone

8. Physiological changes during pregnancy

9. Placenta and its functions

10. Lactation

11. Parturition (labor)

12. Fertilization and implantation

13. Contraceptive methods

14. Menopause

15. Puberty

LAQ (15 Marks)

1. Spermatogenesis

* Definition

* Stages

* Hormonal regulation

* Clinical significance

2. Menstrual Cycle

* Phases

* Hormonal changes

* Ovarian and uterine cycles

* Clinical significance

3. Female Sex Hormones

* Estrogen

* Progesterone

* Actions

* Regulation

4. Pregnancy

* Physiological changes

* Hormonal changes

* Maintenance of pregnancy

5. Placenta

* Structure

* Functions

* Placental hormones

* Fetomaternal exchange

6. Lactation

* Hormonal control

* Milk secretion

* Milk ejection reflex

7. Parturition

* Mechanism of labor

* Hormonal regulation

* Stages of labor

High-Yield Revision List

1. Spermatogenesis

2. Menstrual cycle

3. Ovulation

4. Estrogen

5. Progesterone

6. Testosterone

7. Oogenesis

8. Placenta and its functions

9. Pregnancy

10. Lactation

11. Parturition

12. Fertilization

13. Implantation

14. Menopause

15. Contraceptive methods

PHYSIOLOGY IMPORTANT QUESTIONS FOR KNRUHS

CENTRAL NERVOUS SYSTEM (CNS)

MCQs (1 Mark)

1. Neuron – structural and functional unit of nervous system
2. Synapse
3. Neurotransmitters
4. Reflex arc
5. Types of reflexes
6. Resting membrane potential
7. Action potential
8. Saltatory conduction
9. Synaptic transmission
10. Excitatory postsynaptic potential (EPSP)
11. Inhibitory postsynaptic potential (IPSP)
12. Muscle spindle
13. Stretch reflex
14. Golgi tendon organ
15. Cerebellum
16. Basal ganglia
17. Thalamus
18. Hypothalamus
19. Reticular formation
20. Cerebrospinal fluid (CSF)

VSAQ (3 Marks)

1. Neuron

2. Synapse

3. Neurotransmitters

4. Reflex arc

5. Properties of synapse

6. Muscle spindle

7. Golgi tendon organ

8. Stretch reflex

9. Cerebellum

10. Basal ganglia

11. Thalamus

12. Hypothalamus

13. Reticular formation

14. CSF

15. Blood-brain barrier

16. Sleep

17. Memory

18. EEG

SAQ (6 Marks)

1. Structure and functions of neuron

2. Synaptic transmission

3. Reflex arc and reflex action

4. Properties of reflexes

5. Muscle spindle and stretch reflex

6. Golgi tendon organ

7. Cerebellum and its functions

8. Basal ganglia and its functions

9. Thalamus and its functions

10. Hypothalamus and its functions

11. Cerebrospinal fluid – formation, circulation and functions

12. Blood-brain barrier

13. Sleep and its stages

14. Memory and learning

15. Electroencephalogram (EEG)

LAQ (15 Marks)

1. Synapse

* Structure

* Mechanism of synaptic transmission

* Properties of synapse

* Significance

2. Reflex Action

* Reflex arc

* Types of reflexes

* Stretch reflex

* Clinical importance

3. Cerebellum

* Functional anatomy

* Functions

* Cerebellar lesions

* Clinical significance

4. Hypothalamus

* Nuclei

* Functions

* Regulation of autonomic and endocrine activities

5. Cerebrospinal Fluid (CSF)

* Formation

* Circulation

* Functions

* Clinical significance

6. Sleep

* Types and stages

* EEG changes

* Mechanism and functions

7. Memory

* Types

* Mechanism

* Factors affecting memory

8. Basal Ganglia

* Components

* Functions

* Disorders

High-Yield Revision List

1. Synapse and synaptic transmission

2. Reflex arc and reflex action

3. Muscle spindle and stretch reflex

4. Cerebellum

5. Hypothalamus

6. Basal ganglia

7. Thalamus

8. Cerebrospinal fluid (CSF)

9. Blood-brain barrier

10. Sleep and its stages

11. Memory

12. EEG

13. Neurotransmitters

14. Golgi tendon organ

15. Reticular formation

PHYSIOLOGY IMPORTANT QUESTIONS FOR KNRUHS

SPECIAL SENSES

MCQs (1 Mark)

1. Refractive media of the eye

2. Power of the eye

3. Accommodation

4. Near point

5. Far point

6. Rods and cones

7. Rhodopsin

8. Blind spot

9. Visual pathway

10. Pupillary light reflex

11. Aqueous humor

12. Intraocular pressure

13. Myopia

14. Hypermetropia

15. Astigmatism

16. Presbyopia

17. Organ of Corti

18. Auditory pathway

19. Vestibular apparatus

20. Taste buds

21. Olfactory receptors

PHYSIOLOGY IMPORTANT QUESTIONS FOR KNRUHS

VSAQ (3 Marks)

1. Rods and cones
2. Rhodopsin
3. Blind spot
4. Accommodation
5. Aqueous humor
6. Pupillary light reflex
7. Myopia
8. Hypermetropia
9. Astigmatism
10. Presbyopia
11. Organ of Corti
12. Vestibular apparatus
13. Auditory pathway
14. Taste buds
15. Olfactory receptors
16. Color vision
17. Dark adaptation
18. Light adaptation

SAQ (6 Marks)

1. Accommodation reflex
2. Errors of refraction and their correction
3. Visual pathway

4. Functions of rods and cones

5. Color vision and color blindness

6. Dark adaptation and light adaptation

7. Formation and drainage of aqueous humor

8. Organ of Corti and mechanism of hearing

9. Auditory pathway

10. Vestibular apparatus and maintenance of equilibrium

11. Taste sensation

12. Olfactory sensation

13. Pupillary reflexes

14. Hearing mechanism

15. Intraocular pressure and glaucoma

LAQ (15 Marks)

1. Visual Pathway

* Retina

* Optic nerve

* Optic chiasma

* Optic tract

* Visual cortex

* Visual field defects

2. Accommodation

* Mechanism

* Neural pathway

* Changes during near vision

* Clinical significance

3. Errors of Refraction

* Myopia

* Hypermetropia

* Astigmatism

* Presbyopia

* Correction

4. Hearing

* Structure of ear

* Organ of Corti

* Mechanism of hearing

* Auditory pathway

5. Vestibular Apparatus

* Structure

* Functions

* Maintenance of equilibrium

* Clinical significance

6. Taste Sensation

* Taste buds

* Primary tastes

* Pathway

* Functions

7. Olfactory Sensation

* Olfactory receptors

* Pathway

* Mechanism of smell

PHYSIOLOGY IMPORTANT QUESTIONS FOR KNRUHS

High-Yield Revision List

1. Visual pathway
2. Accommodation reflex
3. Errors of refraction
4. Rods and cones
5. Color vision and color blindness
6. Dark and light adaptation
7. Aqueous humor and glaucoma
8. Organ of Corti
9. Mechanism of hearing
10. Auditory pathway
11. Vestibular apparatus
12. Taste sensation
13. Olfactory sensation
14. Pupillary reflexes
15. Intraocular pressure

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