

**VINAYAKA MISSION'S RESEARCH FOUNDATION
(DEEMED TO BE UNIVERSITY), SALEM**

**B.H.M.S. DEGREE EXAMINATION – February 2023
First Year**

PHYSIOLOGY INCLUDING BIOCHEMISTRY PAPER - I

Time: Three hours

Maximum: 100 marks

I. Write long essays on any **TWO** of the following: (2 x 15 = 30)

- 1) Give the definition, normal values and variations of cardiac output. Explain the factors regulating cardiac output.
- 2) Enumerate the factors involved in blood coagulation and describe the intrinsic mechanism of coagulation.
- 3) Describe the role of kidneys in maintaining acid base balance.

II. Write short essays on any **TEN** of the following: (10 x 5 = 50)

- 4) Explain the distribution of body fluids.
- 5) Explain morphology of red blood cells.
- 6) Explain blood groups.
- 7) What are the precautions taken during transfusion by a Donor?
- 8) Describe the layers of wall of the heart.
- 9) Describe the rhythmicity of the heart.
- 10) Define Electrocardiogram, uses of ECG.
- 11) Explain the functions of Kidney.
- 12) Explain renal circulation.
- 13) Explain sneezing reflex.
- 14) Explain pulmonary function tests.
- 15) Describe the glands of skin.

III. Write short notes of the following: (Answer ALL): (10 x 2 = 20)

- 16) Describe the functions of skin.
- 17) Define dialysis. What is artificial kidney?
- 18) Define Pneumonia and its causes.
- 19) Define Nephron and its parts.
- 20) Define Osmotic diuresis.
- 21) Name four actions of heart.
- 22) Name six hormones which decrease blood pressure.
- 23) Define Erythrocyte sedimentation rate. And two methods to determine.
- 24) Define immunity. And write two types of immunity.
- 25) Define anticoagulants, name two anticoagulants.

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PHYSIOLOGY INCLUDING BIOCHEMISTRY PAPER - II

Time: Three hours

Maximum: 100 marks

I. Write long essays on any **TWO** of the following: (2 x 15 = 30)

- 1) Describe the function and regulation of secretion of bile. Enumerate the differences between liver bile and gall bladder bile.
- 2) Describe the functions of testis, add a note on factors affecting spermatogenesis.
- 3) Define reflex and its significance. Write properties of reflex.

II. Write short essays on any **TEN** of the following: (10 x 5 = 50)

- 4) Describe the mechanism of pancreatic secretion.
- 5) Functions of large intestine.
- 6) Describe metabolism of carbohydrates.
- 7) Describe the functional anatomy of ovary and functions of ovaries in brief.
- 8) Define infertility. What are the causes for infertility in male and females?
- 9) Define somatosensory system and types of sensation.
- 10) Describe the mechanism of hearing.
- 11) Define Vitamins. Name fat soluble vitamins and their deficiencies.
- 12) Define basal metabolic rate. How BMR is measured? Factors affects BMR.
- 13) Describe the mechanism of hormonal action.
- 14) Enumerate nutritional abnormalities.
- 15) Describe Spermatozoon and semen and its composition.

III. Write short notes of the following: (**Answer ALL**): (10 x 2 = 20)

- 16) Functions of brown adipose tissue.
- 17) Name types of movements of small intestine.
- 18) Functions of placenta.
- 19) Hormones responsible for the growth of mammary gland.
- 20) Define sleep and requirement of sleep.
- 21) Define papillary reflex and name three classification.
- 22) Explain ketone bodies.
- 23) Define Nutrition and nutrients.
- 24) Name types of muscle contraction.
- 25) What is the role of tympanic membrane?

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**B.H.M.S. DEGREE EXAMINATION – August 2022
First Year**

PHYSIOLOGY INCLUDING BIOCHEMISTRY: PAPER - I

Time: Three hours

Maximum: 100 marks

I. Write long essays on any **TWO** of the following: (2 x 15 = 30)

- 1) Define cardiac cycle. Describe various events of cardiac cycle with pressure and volume changes.
- 2) Enumerate the factors involved in blood coagulation and describe the intrinsic mechanism of coagulation.
- 3) Describe in detail the respiratory and cardio-vascular changes during exercise.

II. Write short essays on any **TEN** of the following: (10 x 5 = 50)

- 4) Explain the collapsing tendency of lungs.
- 5) Explain fetal respiration and first breath.
- 6) What is hypoxia? Describe the types.
- 7) Explain the transport of oxygen in blood.
- 8) Explain heart sounds.
- 9) Describe the morphology and development of leucocytes.
- 10) Explain the factors necessary for erythropoiesis.
- 11) Explain the regulation of acid – base balance.
- 12) What is normal temperature, explain heat balance and regulation of body temperature.
- 13) Describe the process of urine formation
- 14) Explain the mechanism of micturition.
- 15) Explain the actions of hormones on renal tubules.

III. Write short notes of the following: (**Answer ALL**): (10 x 2 = 20)

- 16) Golgi apparatus.
- 17) Explain passive transport.
- 18) ABO blood groups.
- 19) Composition of muscle.
- 20) Functions of kidney.
- 21) Explain sebaceous glands.
- 22) Explain the reabsorption of glucose in renal tubule.
- 23) Define hypertension name the methods to measure hypertension.
- 24) Define syncope.
- 25) Define dead space.

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**B.H.M.S. DEGREE EXAMINATION – August 2022
First Year**

PHYSIOLOGY INCLUDING BIOCHEMISTRY PAPER - II

Time: Three hours

Maximum: 100 marks

I. Write long essays on any **TWO** of the following: (2 x 15 = 30)

- 1) Define vitamins. Name types of vitamins and their functions and deficiency of vitamins.
- 2) Explain the different parts of cerebellum, enumerate the different functions of cerebellum, write a note on cerebellar lesions.
- 3) Enumerate the corticosteroids. Describe the actions and regulations of secretion of aldosterone.

II. Write short essays on any **TEN** of the following: (10 x 5 = 50)

- 4) Describe the composition and functions of bile.
- 5) Describe the composition and functions of pancreatic juice.
- 6) Give an account of hypothalamo- hypophyseal relations.
- 7) Functions of Growth hormone.
- 8) Define menstruation, explain uterine changes.
- 9) Define receptors, classify them.
- 10) Explain auditory pathway.
- 11) Explain the mechanism of hearing.
- 12) Define carbohydrates. Classify carbohydrates.
- 13) Explain the mechanism of digestion of proteins.
- 14) Explain the different layers of gastro intestinal wall.
- 15) Name gastro intestinal hormones explain in detail gastrin.

III. Write short notes of the following: (Answer ALL): (10 x 2 = 20)

- 16) Liver function tests.
- 17) Define enzyme.
- 18) Functions of oxytocin.
- 19) Explain milk ejection reflex.
- 20) Tabes dorsalis.
- 21) Retina.
- 22) Dark adaptation.
- 23) Structure of neuron.
- 24) Pyramidal tracts.
- 25) Zollinger Ellison syndrome.

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B.H.M.S. DEGREE EXAMINATION – February 2022
First Year

PHYSIOLOGY INCLUDING BIOCHEMISTRY PAPER - I

Time: Three hours

Maximum: 100 marks

I. Write long essays on any **TWO** of the following: (2 x 15 = 30)

- 1) What is hypoxia? Describe the types. What are causes and affect of hypoxia? Add a note on oxygen therapy?
- 2) What are the different stages of urine formation? Explain the role of glomerulus of nephron in the formation of urine.
- 3) Define erythropoiesis. List the different stages of erythropoiesis. Describe the changes which take place in each stage and the factors necessary for erythropoiesis.

II. Write short essays on any **TEN** of the following: (10 x 5 = 50)

- 4) Define homeostasis, components of homeostasis.
- 5) Describe the active transport in a cell.
- 6) Enumerate the functions of red blood cells.
- 7) Functions of Hemoglobin.
- 8) Explain the morphology of white blood cells.
- 9) Define Immunization, types, explain one.
- 10) Explain the right side of heart.
- 11) Explain the events of cardiac cycle. Explain one event.
- 12) Explain counter current mechanism.
- 13) Explain normal respiration and altered patterns of respiration.
- 14) Define cyanosis. Explain the conditions when cyanosis occurs.
- 15) Describe the effects of exposure to cold.

III. Write short notes of the following: (**Answer ALL**): (10 x 2 = 20)

- 16) Explain cell membrane.
- 17) Explain ribosomes and types of ribosomes.
- 18) Define Excitability and stimulus.
- 19) Define anemia with three causes.
- 20) Describe Mast Cell.
- 21) Define blood pressure, methods to measure blood pressure.
- 22) Define pulse and transmission of pulse.
- 23) Name renal function tests.
- 24) Name movement of thoracic cage.
- 25) Spirometer.

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PHYSIOLOGY INCLUDING BIOCHEMISTRY PAPER – II

Time: Three hours

Maximum: 100 marks

I. Write long essays on any **TWO** of the following: (2 x 15 = 30)

- 1) What are the different types of salivary glands? Describe the composition, functions and regulation of secretion of saliva.
- 2) Describe menstrual cycle. Explain ovarian changes taking place during menstrual cycle.
- 3) Enumerate the descending tracts of spinal cord. Describe in detail the pyramidal tracts. Write a note on the effects of upper and lower motor neuron lesions.

II. Write short essays on any **TEN** of the following: (10 x 5 = 50)

- 4) Name gastro intestinal Hormones explain gastrin.
- 5) Describe the stages of Mastication.
- 6) Describe Menopause.
- 7) Define Puberty what are the changes during puberty in females.
- 8) Define receptors. And classification of receptors.
- 9) Name the proteins in diet. add a note on digestion of proteins.
- 10) Functions of Rods and Cones. And a note on Rhodopsin.
- 11) Which are hormones secreted from Thyroid gland, add a note on hypothyroidism?
- 12) Hormones secreted from Endocrine Pancreas, and enumerate the mode of action and regulation of Insulin.
- 13) Name the disease of spinal cord. Explain any two of them.
- 14) Name the causes for infertility in females.
- 15) Development of Mammary gland and explain milk secretion.

III. Write short notes of the following: (Answer ALL): (10 x 2 = 20)

- 16) Define Vitamins and types of vitamins.
- 17) Hormones secreted by Testes.
- 18) Functions of prostatic fluid.
- 19) Define synapse. Classify synapse.
- 20) Mention three types of carbohydrates in human diet.
- 21) Mention storage of lipids in body.
- 22) What is Role of tympanic membrane?
- 23) Define Enzyme and its functions.
- 24) Explain Zollinger- Ellison syndrome.
- 25) Define placenta name three hormones from placenta.

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B.H.M.S. DEGREE EXAMINATION – August 2021

First Year

PHYSIOLOGY INCLUDING BIOCHEMISTRY PAPER - I

Time: Three hours

Maximum: 100 marks

I. Write long essays on any **TWO** of the following: (2 x 15 = 30)

- 1) What is meant by Haemostasis? Enumerate coagulation factors and explain in detail the process of coagulation of blood.
- 2) Explain the following regional circulations mentioning their own significance and factors influencing them
 - i) Cerebral ii) Splanchnic and iii) Skeletal muscle circulation.
- 3) Define respiratory centre and explain in detail regulation of respiration.

II. Write short essays on any **TEN** of the following: (10 x 5 = 50)

- 4) Donnan membrane equilibrium.
- 5) Heart sounds.
- 6) Glomerular filtration.
- 7) Cardiac output.
- 8) Hypoxia.
- 9) T.Lymphocytes.
- 10) Renin angiotensin II mechanism.
- 11) Stages of erythropoiesis and maturation factors required.
- 12) Leads of E.C.G.
- 13) Transport of Oxygen.
- 14) Explain structure and functions of the skin.
- 15) Explain the regulation of body temperature.



III. Write short notes of the following: (**Answer ALL**): (10 x 2 = 20)

- 16) Mitochondria.
- 17) Macrophages.
- 18) Cyanosis.
- 19) Tonsils.
- 20) Sebum.
- 21) Pulmonary surfactant.
- 22) Purkinje fibers.
- 23) E.C.F.
- 24) Baro receptors.
- 25) Carbonic anhydrase.

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B.H.M.S. DEGREE EXAMINATION – August 2021

First Year

PHYSIOLOGY INCLUDING BIOCHEMISTRY PAPER - II

Time: Three hours

Maximum: 100 marks

I. Write long essays on any **TWO** of the following: (2 x 15 = 30)

- 1) Describe the structure and functions of thyroid gland. Explain how Thyroid function is assessed.
- 2) Give an account of composition and functions of pancreatic juice. How is the secretion regulated?
- 3) Enumerate the different ascending tracts of spinal cord and explain the course and termination of Pain pathway.

II. Write short essays on any **TEN** of the following: (10 x 5 = 50)

- 4) Describe the process of gastric emptying.
- 5) Explain functions of Placenta.
- 6) Basal ganglia.
- 7) Define Carbohydrates and classify them with examples.
- 8) Describe the different errors of refraction of Eye and how are they corrected?
- 9) Explain about essential amino acids.
- 10) Explain Urea cycle.
- 11) Define and describe enzymes with examples.
- 12) Explain Vitamin 'C' in terms of sources, requirement and functions.
- 13) Name the hormones of Adrenal Cortex and Mention their functions.
- 14) Describe Hypothalamus.
- 15) Spermatogenesis.

III. Write short notes of the following: (Answer ALL): (10 x 2 = 20)

- 16) Functions of Thalamus.
- 17) Reticular formation.
- 18) Cerebrospinal fluid.
- 19) Dark adaption.
- 20) Corpus luteum.
- 21) Aromatic amino acids.
- 22) Lipopoly saccharide.
- 23) Body mass index.
- 24) Nyctalopia.
- 25) Puberty.

**VINAYAKA MISSION'S RESEARCH FOUNDATION
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B.H.M.S. DEGREE EXAMINATION – October 2021

First Year

PHYSIOLOGY INCLUDING BIOCHEMISTRY PAPER - I

Time: Three hours

Maximum: 100 marks

I. Write long essays on any **TWO** of the following: (2 x 15 = 30)

- 1) Explain the Homeostasis in the body with suitable examples.
- 2) What is hypoxia? Describe the types, causes and effects of hypoxia. Add a note on oxygen therapy.
- 3) Define Cardiac cycle. Describe various events of cardiac cycle with pressure and volume changes.

II. Write short essays on any **TEN** of the following: (10 x 5 = 50)

- 4) Describe fetal Circulation.
- 5) Explain cardiac Murmurs.
- 6) Explain the measurement functional residual capacity.
- 7) Explain carbon monoxide poisoning.
- 8) Compare cardiac muscle and skeletal muscle.
- 9) What are the functions of Red Blood Corpuscles?
- 10) Explain Anemia with signs and symptoms.
- 11) What are the functions of blood?
- 12) Describe Peculiarities of renal circulation.
- 13) Explain the Reabsorption in water in renal tubules.
- 14) Explain Respiratory quotient or Respiratory exchange ratio.
- 15) Give account of micturition.

III. Write short notes of the following: (**Answer ALL**): (10 x 2 = 20)

- 16) Explain Dead Space.
- 17) Explain Mountain Sickness.
- 18) Define Hypertension.
- 19) Define Myocardial infarction.
- 20) Explain the functions of skin.
- 21) Explain the role of hypothalamus in temperature regulation.
- 22) Explain Dialysis.
- 23) Explain the reabsorption of sodium in renal tubules.
- 24) List the functions of skin.
- 25) Explain fatigue.

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B.H.M.S. DEGREE EXAMINATION – October 2021

First Year

PHYSIOLOGY INCLUDING BIOCHEMISTRY PAPER - II

Time: Three hours

Maximum: 100 marks

I. Write long essays on any **TWO** of the following: (2 x 15 = 30)

- 1) Define Proteins. Explain the chemistry, Metabolism, Digestion of proteins.
- 2) Describe composition, secretion, functions, regulation of bile Juice.
- 3) Enumerate the descending tracts of spinal cord. Describe in detail pyramidal tracts. Write a note on the effects of upper and lower motor neuron lesions.

II. Write short essays on any **TEN** of the following: (10 x 5 = 50)

- 4) Explain Transportation and utilization of fats.
- 5) Explain urea cycle.
- 6) Define peristalsis. Explain different types of peristalsis.
- 7) Give an account of postural reflexes.
- 8) Describe how the pitch of the sound is analyzed in human ear (theories of hearing)
- 9) Draw a diagram of visual pathway and explain it.
- 10) What are female sex hormones? Explain action of one hormone.
- 11) Describe the puberty changes in male.
- 12) Classify the hormones secreted by Adrenal Cortex. Explain the actions of Cortisol.
- 13) What are catecholamines? Explain the regulation and secretion of Catecholamines.
- 14) Write an essay on gastric motility. What are the factors influencing gastric motility?
- 15) Explain the functions of saliva.

III. Write short notes of the following: (**Answer ALL**): (10 x 2 = 20)

- 16) Define vitamins and name fat soluble vitamins.
- 17) Deficiency of mineral in body leads to which problem.
- 18) Explain hunger contraction.
- 19) Defecation and nervous control.
- 20) Babinski sign.
- 21) Tests for hearing.
- 22) Cataract.
- 23) Intra uterine contraceptive device.
- 24) Define Diabetes. Name the types of diabetes.
- 25) Thyroglobulin.

**VINAYAKA MISSION'S RESEARCH FOUNDATION
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**B.H.M.S. DEGREE EXAMINATION – December 2020
First Year**

PHYSIOLOGY INCLUDING BIOCHEMISTRY PAPER – I

Time: Three hours

Maximum: 100 marks

I. Write long essays on any **TWO** of the following:

(2 x 15 = 30)

- 1) Classify blood groups. Describe physiology of ABO and Rh blood group systems. Enumerate effects of mismatched transfusion.
- 2) Describe in detail the production and propagation of cardiac impulse with the help of a neat diagram.
- 3) Name different Volumes and Capacities of Lungs. How are they measured?

II. Write short essays on any **TEN** of the following:

(10 x 5 = 50)

- 4) What is ultra filtration?
- 5) Classify Leucocytes and describe their functions.
- 6) Counter current mechanism in Kidneys.
- 7) Pulmonary Circulation.
- 8) P.R. Interval.
- 9) Functions of Plasma Proteins.
- 10) Properties of Cardiac muscle.
- 11) Describe platelets and their functions.
- 12) Mechanism of micturition.
- 13) Coronary Circulation.
- 14) E.S.R.
- 15) Pyrexia or Fever.

III. Write short notes of the following: (**Answer ALL**):

(10 x 2 = 20)

- 16) Nucleolus.
- 17) Einthoven's law.
- 18) Respiratory membrane.
- 19) Peripheral resistance.
- 20) Mitosis.
- 21) Functions of Spleen.
- 22) Renal Erythropoietin factor.
- 23) Diffusion.
- 24) Layers of Epidermis.
- 25) Forced Expiratory Volume (F.E.V) or Vital capacity.

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B.H.M.S. DEGREE EXAMINATION – December 2020

First Year

PHYSIOLOGY INCLUDING BIOCHEMISTRY PAPER - II

Time: Three hours

Maximum: 100 marks

I. Write long essays on any **TWO** of the following: (2 x 15 = 30)

- 1) What are Glucocorticoids? Describe their functions and control of their secretion?
- 2) Define and describe the process of deglutition. Write a note on achalasia Cardia.
- 3) Describe Connections and functions of Cerebellum.

II. Write short essays on any **TEN** of the following: (10 x 5 = 50)

- 4) Enterohepatic recirculation of bile salts.
- 5) Ovulation.
- 6) R.E.M sleep.
- 7) Digestion and absorption of Proteins.
- 8) Color blindness.
- 9) Taste buds and physiology of sensation of taste.
- 10) Kreb's Cycle.
- 11) Vitamin B₁₂ and Folic acid.
- 12) Transport and storage of Iron in human body.
- 13) Parathormone.
- 14) Cerebro spinal fluid.
- 15) Conditioned reflexes.

III. Write short notes of the following: (**Answer ALL**): (10 x 2 = 20)

- 16) Referred Pain.
- 17) Broca's area or motor speech centre.
- 18) Aqueous humour.
- 19) Conduction deafness.
- 20) Testosterone.
- 21) Phospholipids.
- 22) Neuro glia.
- 23) S.D.A (Specific Dynamic Action)
- 24) Scurvy.
- 25) ADH (Ante diuretic hormone).