Rajiv Gandhi University of Health Sciences, Karnataka

MBBS Phase – I Degree Examination - 22-Feb-2022

Time: Three Hours **Max. Marks: 100 Marks**

ANATOMY – PAPER I (RS3)
Q.P. CODE: 1075

Your answers should be specific to the questions asked.
Draw neat, labeled diagrams wherever necessary.

LONG ESSAYS **2 x 10 = 20 Marks**

1. Describe the parts, relations, blood supply, nerve supply and applied anatomy of submandibular salivary gland.

2. Describe the formation, course, relations, branches and applied aspects of Radial nerve.

SHORT ESSAYS **10 x 5 = 50 Marks**

3. Lateral wall of nasal cavity
4. Oogenesis
5. Microscopic structure of large artery
6. Azygos vein
7. Pectoralis major muscle
8. Major openings of the Diaphragm
9. Floor of fourth ventricle
10. Cubital fossa
11. Neural crest and its derivatives
12. Mediastinal surface of Right lung

SHORT ANSWERS **10 x 3 = 30 Marks**

13. Decidua
14. Parotid duct
15. Clavipectoral Fascia
16. Fornix of brain
17. Microscopic structure of Hyaline cartilage
18. First rib
19. Ear Ossicles
20. Interpeduncular fossa
21. Orbicularis occuli muscle
22. Gastrulation

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Rajiv Gandhi University of Health Sciences, Karnataka

MBBS Phase – I Degree Examination – 24-Feb-2022

Time: Three Hours **Max. Marks: 100 Marks**

ANATOMY – PAPER - II (RS3)
Q.P. CODE: 1076

Your answers should be specific to the questions asked.
Draw neat, labeled diagrams wherever necessary.

LONG ESSAYS **2 x 10 = 20 Marks**

1. Describe the supports of Uterus. Add a note on its development.
2. Describe Hip Joint. Add a note on applied aspects.

SHORT ESSAYS **10 x 5 = 50 Marks**

3. Obturator nerve
4. Gall bladder
5. Urogenital diaphragm
6. Describe the microscopic structure of kidney.
7. Development of urinary bladder
8. Stomach bed
9. Down's syndrome
10. Coeliac trunk
11. Second part of duodenum
12. Mesentery

SHORT ANSWERS **10 x 3 = 30 Marks**

13. Barr body
14. Ileocaecal valve
15. Deep inguinal lymph nodes
16. Menisci of knee joint
17. Ligaments of urinary bladder
18. Nerve supply and action of Hamstring muscles
19. Contents of deep perineal pouch
20. Draw and label microscopic structure of ovary
21. Derivatives of Hindgut
22. Development of Pancreas

Rajiv Gandhi University of Health Sciences, Karnataka

MBBS Phase – I Degree Examination - 28-Feb-2022

Time: Three Hours **Max. Marks: 100 Marks**

PHYSIOLOGY – I (RS3)
Q.P. CODE: 1077

Your answers should be specific to the questions asked
Draw neat, labeled diagrams wherever necessary

LONG ESSAYS **2 x 10 = 20 Marks**

1. Describe the secretion and regulation of gastric juice in different phases of secretion. Add a note on Peptic ulcer.
2. Describe in detail the neural regulation of Respiration. Add a note on periodic breathing.

SHORT ESSAYS **10 x 5 = 50 Marks**

3. Gastrointestinal hormones
4. Plasma proteins
5. Humoral Immunity
6. Blood indices
7. Draw normal ECG and explain its waves
8. Cerebral circulation
9. Micturition reflex
10. Cystometrogram
11. Ventilation perfusion ratio and its significance
12. Heart sounds

SHORT ANSWERS **10 x 3 = 30 Marks**

13. Reabsorption of water in kidney
14. Triple response
15. Vasomotor center
16. Anticoagulants
17. Megaloblastic anemia
18. Plasma clearance
19. Peristalsis
20. Intercellular connections
21. Dysbarism
22. Compliance in Lungs

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Rajiv Gandhi University of Health Sciences, Karnataka

MBBS Phase - I Degree Examination – 03-Mar-2022

Time: Three Hours **Max. Marks: 100 Marks**

PHYSIOLOGY - II (RS3)
QP Code: 1078

Your answers should be specific to the questions asked
Draw neat labeled diagrams wherever necessary

LONG ESSAYS **2 x 10 = 20 Marks**

1. Describe the Corticospinal tract with the help of a labeled diagram. What is the effect of lesion at the internal capsular level?
2. Describe the hormonal regulation of menstrual cycle.

SHORT ESSAYS **10 x 5 = 50 Marks**

3. Functions of Thalamus
4. Brown-sequard syndrome
5. Mechanism of color vision
6. Corpus luteum
7. Mechanism of hearing
8. Anti thyroid drugs
9. Crossed extensor reflex
10. Four properties of synapse
11. Functions of testosterone
12. Ascending reticular activating system

SHORT ANSWERS **10 x 3 = 30 Marks**

13. Rigor mortis
14. Differences between spasticity and rigidity
15. Physiological basis of pregnancy test
16. Neuroglia
17. Otolith organ
18. Functions of hypothalamus
19. Addisson’s disease
20. Intention tremor
21. Macular sparing
22. Depth perception

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Rajiv Gandhi University of Health Sciences, Karnataka

MBBS Phase – I Degree Examination - 05-Mar-2022

Time: Three Hours **Max. Marks: 50 Marks**

BIOCHEMISTRY – PAPER I (RS3)
QP Code: 1079

Your answers should be specific to the questions asked
Draw neat labeled diagrams wherever necessary
(Note: Both QP Codes 1079 and 1080 are to be, answered within total duration of three hours)
(Use separate Answer books for QP Code 1079 & 1080)

LONG ESSAYS **1 x 10 = 10 Marks**

1. Explain in detail the beta oxidation of palmitic acid. Add a note on its energetics.

SHORT ESSAYS **5 x 5 = 25 Marks**

2. Classification of enzymes with examples.
3. Digestion and absorption of carbohydrates
4. Metabolic functions of glycine
5. Hormonal regulation of blood glucose
6. Urea cycle

SHORT ANSWERS **5 x 3 = 15 Marks**

7. Detoxification by conjugation
8. Specificity of enzymes
9. Structure and functions of mitochondria
10. Tumour markers
11. Fatty liver

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Rajiv Gandhi University of Health Sciences, Karnataka

MBBS Phase – I Degree Examination – 05-Mar-2022

Time: Three Hours **Max. Marks: 50 Marks**

BIOCHEMISTRY – PAPER II (RS3)
Q.P. CODE: 1080

Your answers should be specific to the questions asked.
Draw neat, labeled diagrams wherever necessary.
(Note: Both QP Codes 1079 and 1080 are to be, answered within total duration of three hours)
(Use separate Answer books for QP Code 1079 & 1080)

LONG ESSAYS **1 x 10 = 10 Marks**

1. Write in detail about heme synthesis and its regulation. Add a note on Acute intermittent porphyria

SHORT ESSAYS **5 x 5 = 25 Marks**

2. Purine catabolism and its disorder
3. Role of protein buffers in acid-based balance
4. Biological value of proteins
5. Antioxidants
6. Glomerular function test

SHORT ANSWERS **5 x 3 = 15 Marks**

7. Gene therapy
8. Specific Dynamic Action (SDA)
9. Anion gap
10. Messenger RNA
11. Posttranscriptional modifications

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Rajiv Gandhi University of Health Sciences, Karnataka

MBBS Phase – I (CBME) Degree Examination - 22-Feb-2022

Time: Three Hours **Max. Marks: 100 Marks**

ANATOMY – PAPER I (RS-4)
Q.P. CODE: 1020
(QP contains two pages)

Your answers should be specific to the questions asked
Draw neat, labeled diagrams wherever necessary

LONG ESSAYS **2 x 10 = 20 Marks**

1. A person was brought with severe chest pain and sweating since 20 minutes. Coronary angiogram revealed 90% blockage of left anterior descending artery.
   a) Describe the origin, branches and area of distribution of left coronary artery
   b) Add a note on coronary dominance of heart
   c) Write in detail about the venous drainage of heart
2. Write in detail about a) Presenting parts b) Coverings c) Relations d) Blood supply e) Applied anatomy of thyroid gland

SHORT ESSAYS **8 x 5 = 40 Marks**

3. Describe the origin, insertion, nerve supply action and structures under the cover of Deltoid.
4. Describe the features and structures attached to clavicle.
5. Describe the origin course branches and termination of posterior interrosseous nerve.
6. Describe the attachments of constrictors of pharynx. Mention the structures passing between the constrictors.
7. Describe the floor of the 4^{th} ventricle with a neat labelled diagram.
8. Draw a neat labelled diagram of transverse section of medulla oblongata at the level of sensory decussation.
9. Classify intraembryonic mesoderm. Enumerate its derivatives.
10. Compare and contrast the microscopic structure of sensory and sympathetic ganglia.

SHORT ANSWERS **10 x 3 = 30 Marks**

11. Mention the formation and fate of notochord.
12. Differentiate between tendon and aponeurosis with examples.
13. Mention the boundaries and contents of quadrangular space.
14. Name the major openings of diaphragm and their vertebral levels.
15. Mention the boundaries of transverse pericardial sinus and its clinical significance.
16. Write the attachments and action of lateral pterygoid muscle.
17. Name the dangerous layer of scalp and its clinical importance.
18. List the contents of middle ear.
19. Name the components of blood brain barrier.
20. Classify fibrous joints with examples.

Multiple Choice Questions **10 x 1 = 10 Marks**

21 i) Superior venacava opens into right atrium at the level of
   A. 2^{nd} right costal cartilage
   B. 2^{nd} left costal cartilage
   C. 3^{rd} right costal cartilage
   D. 3^{rd} left costal cartilage

21 ii) Left recurrent laryngeal nerve hooks around
   A. Pulmonary trunk
   B. Left common carotid artery
   C. Left subclavian artery
   D. Arch of aorta

21 iii) Structures passing through 4th compartment of extensor retinaculum of hand
- A. Abductor pollicis longus
- B. Extensor digitiminimi
- C. Extensor digitorum
- D. Flexor digitorum

21 iv) Which of the following is pneumatic bone
- A. Frontal
- B. Parietal
- C. Occipital
- D. Palatine

21 v) Filum terminale is a modification of
- A. Cranial dura mater
- B. Spinal dura mater
- C. Pia mater
- D. Arachnoid mater

22 i) Arrector pili muscle is supplied by
- A. Sensory nerve
- B. Motor nerve
- C. Parasympathetic nerve
- D. Sympathetic nerve

22 ii) Maxillary nerve comes out of skull through the following foramen
- A. Foramen lacerum
- B. Foramen rotundum
- C. Foramen ovale
- D. Foramen spinosum

22 iii) Muscles of tongue develop from
- A. Endoderm
- B. Ectoderm
- C. Mesoderm
- D. Connecting stalk

22 iv) Dermis of the skin is
- A. Dense regular connective tissue
- B. Dense irregular connective tissue
- C. Loose areolar tissue
- D. Adipose tissue

22 v) Maxillary sinus opens into
- A. Middle meatus
- B. Inferior meatus
- C. Superior meatus
- D. Supreme meatus

Rajiv Gandhi University of Health Sciences, Karnataka

MBBS Phase – I (CBME) Degree Examination - 24-Feb-2022

Time: Three Hours **Max. Marks: 100 Marks**

ANATOMY – PAPER - II (RS-4)
Q.P. CODE: 1021
(QP contains three pages)

Your answers should be specific to the questions asked
Draw neat, labeled diagrams wherever necessary

LONG ESSAYS **2 x 10 = 20 Marks**

1. Describe the inguinal canal under the following headings
   a) Boundaries
   b) Contents
   c) Mechanism to maintain the integrity of inguinal canal
   d) Applied anatomy

2. A 60 year old female complains of pain in the back of right thigh radiating to the sole. She is diagnosed with sciatica.
   a) Mention the anatomical basis of sciatica.
   b) Describe course, relations and branches of sciatic nerve.

SHORT ESSAYS **8 x 5 = 40 Marks**

3. Describe the microscopic structure of ovary with a neat labelled diagram.
4. Describe the boundaries and contents of Ischiorectral fossa.
5. Describe the process of midgut rotation. Add a note on associated anomalies.
6. Describe the relations of Liver.
7. Enumerate the sites of portocaval anastomosis. Explain the anatomical basis for hematemesis and caput medusae in portal hypertension
8. Describe indications, process and disadvantages of Amniocentesis
9. Describe the supports of uterus and its clinical significance.
10. Describe the presenting parts, relations and nerve supply of Urinary bladder

SHORT ANSWERS **10 x 3 = 30 Marks**

11. Mention the derivatives of ventral and dorsal pancreatic bud
12. Enumerate the posterior relations of the kidney
13. List the structures present at transpyloric plane
14. Compare and contrast the microscopic features of ureter and vas deferens
15. Mention the formation of femoral sheath. Enumerate its contents
16. List the muscles causing inversion and eversion
17. Name the boundaries of epiploic foramen
18. Explain the clinical importance of Recto-uterine pouch
19. Enumerate the contents of superficial perineal pouch
20. Draw a neat labelled diagram of microscopic structure of fundus of stomach

Multiple Choice Questions **10 x 1 = 10 Marks**

21 i) The blood supply of urinary bladder is by
   A. Superior vesical artery
   B. Obturator artery
   C. Superior epigastric artery
   D. Ovarian artery

21 ii) All are contents of rectus sheath **<u>EXCEPT</u>**
   A. Superior epigastric artery
   B. Inferior epigastric artery
   C. Pyramidalis muscle
   D. Piriformis muscle

21 iii) The left suprarenal vein drains into
- A. Left gonadal vein
- B. Inferior vena cava
- C. Splenic vein
- D. Left renal vein

21 iv) The following structure is the content of adductor canal
- A. Sciatic nerve
- B. Obturator artery
- C. Saphenous nerve
- D. Short saphenous vein

21 v) Medial plantar nerve supplies
- A. Medial 3½ toes
- B. Medial 2½ toes
- C. Medial 4 toes
- D. Medial 3 toes

22 i) Trisomy 21 is
- A. Down's syndrome
- B. Patau's syndrome
- C. Edward's syndrome
- D. Turner's syndrome

22 ii) Urorectal septum develops between
- A. Urogenital sinus and cloaca
- B. Primitive urogenital sinus and primitive rectum
- C. Allantois and cloaca
- D. Analcanal and cloaca

22 iii) Axis of pelvic inlet is
- A. Vertical
- B. Downwards and backwards
- C. Transverse
- D. Downwards and forwards

22 iv) Lateral head of Gastrocnemius is supplied by
- A. Tibial nerve
- B. Common Peroneal nerve
- C. Sciatic nerve
- D. Obturator nerve

22 v) Microscopic structure of testis contains
- A. Paneth cells
- B. Sertoli cells
- C. Pituicytes
- D. Langerhan cells

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Rajiv Gandhi University of Health Sciences, Karnataka

MBBS Phase – I (CBME) Degree Examination - 28-Feb-2022

Time: Three Hours **Max. Marks: 100 Marks**

PHYSIOLOGY – PAPER - I (RS-4)
Q.P. CODE: 1022
(QP contains two pages)

Your answers should be specific to the questions asked
Draw neat, labeled diagrams wherever necessary

LONG ESSAYS **2 x 10 = 20 Marks**

1. Define cardiac output. Mention its normal value. Describe the factors regulating it.
2. How is oxygen carried in blood? Describe oxygen – Hemoglobin dissociation curve and factors affecting it.

SHORT ESSAYS **8 x 5 = 40 Marks**

3. What is normal GFR? Explain the factors regulating it
4. Explain Rh incompatibility
5. An adult aged 22 years with history of diarrhoea and vomiting of one day duration comes to the OPD. On examination the patient was in altered sensorium, BP-low, tachycardia, thready pulse, cold clammy extremities
   a) What is the probable diagnosis?
   b) Explain the reflex that comes into action in the above condition
6. Describe the intrinsic mechanism of coagulation
7. Explain Phases of gastric acid secretion
8. Describe renal function tests
9. Write composition and functions of saliva
10. Explain chemical regulation of respiration

SHORT ANSWERS **10 x 3 = 30 Marks**

11. What is the basis for resting membrane potential?
12. Enumerate the cause and features of hemophilia
13. What is ejection fraction? Write its significance
14. Explain the role of surfactant in lung mechanics
15. Explain the absorption of fat in the small intestine
16. Define transport maximum for glucose and give normal value
17. What is the physiological importance of mitochondria
18. Enumerate the factors affecting erythropoiesis
19. Draw a neat labelled diagram of Lead II ECG
20. Give the physiological importance of Na+ / K+ pump

Multiple Choice Questions **10 x 1 = 10 Marks**

21 i) Gastric acid secretion is increased by
   A. Presence of acid in small intestine
   B. Presence of chyme in stomach
   C. Presence of protein breakdown product in small intestines
   D. Distension of small bowel

21 ii) Dynamic lung volume is
   A. Tidal volume
   B. Timed vital capacity
   C. Vital capacity
   D. Expiratory reserve volume

21 iii) Normal platelet count is
- A. 4000-11000 / cu.mm
- B. 1.5-4L/cu.mm
- C. 5-6 million/cu.mm
- D. More than 6 million/cu.mm

21 iv) In Cushing's reflex there is
- A. Increased HR increased BP
- B. Decreased HR increased BP
- C. Increased HR decreased BP
- D. Decreased HR decreased BP

21 v) First heart sound
- A. Marks the onset of ventricular systole
- B. Caused by the closure of atrio ventricular value
- C. Best heard over aortic and pulmonary areas
- D. Characterized by high pitch and sharp sound

22 i) Apneustic center is situated in
- A. Pons
- B. Medulla
- C. Internal capsule
- D. Spinal cord

22 ii) The normal end diastolic volume is
- A. 80-100 ml
- B. 100-120 dl
- C. 120-140 ml
- D. 140-160 µl

22 iii) Site of absorption of vit B12
- A. Duodenum
- B. Proximal jejunum
- C. Distal ileum
- D. Colon

22 iv) Inulin has the property of
- A. Partially secreted by the tubules
- B. Freely filtered at Bowman's capsule
- C. Partially reabsorbed by the tubules
- D. Excreted negligibly in urine

22 v) Voluntary control of micturition is under the control of
- A. Pudendal nerve
- B. Pelvic nerve
- C. Hypo gastric nerve
- D. Thoracic nerve

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Rajiv Gandhi University of Health Sciences, Karnataka

MBBS Phase – I (CBME) Degree Examination - 03-Mar-2022

Time: Three Hours **Max. Marks: 100 Marks**

PHYSIOLOGY – PAPER - II (RS-4)
Q.P. CODE: 1023
(QP contains two pages)

Your answers should be specific to the questions asked
Draw neat, labeled diagrams wherever necessary

LONG ESSAYS **2 x 10 = 20 Marks**

1. Name the Nuclei of basal ganglia and explain functions of basal ganglia. Add a note on Parkinson's disease.

2. Name the hormones of thyroid gland and explain in detail about the functions of thyroxine. Add a note on hypothyroidism.

SHORT ESSAYS **8 x 5 = 40 Marks**

3. Compare fast versus slow muscle fibers.
4. Pain suppression system in the brain and spinal cord.
5. An adult aged 32 years comes to causality with history of fall from tree and injury to lower back two days back. Patient is unable to move both lower limbs. On examination patient is conscious, tone in lower limb is decreased and reflexes are lost. X-ray and MRI showed – transection of spinal cord at mid thoracic level.
    a) What is the diagnosis?
    b) What is the basis for decreased tone?
    c) What will be the finding of Babinski sign?

    .
6. Explain carbohydrate and fat metabolism in Type II Diabetes Mellitus.
7. Describe with neat diagram uterine changes during menstrual cycle with hormonal influence
8. Write formation, drainage of aqueous humour and add a note on glaucoma
9. Explain structure of Organ of corti and signal transduction
10. Describe cardiovascular changes during isometric exercise.

SHORT ANSWERS **10 x 3 = 30 Marks**

11. Heat rigor
12. Explain Gonadal and sexual differentiation of foetus into male.
13. List functions of limbic system.
14. What is Aphasia and write the types
15. Types of waves in Electroencephalography.
16. Write features of Acromegaly.
17. List functions of the prostate gland.
18. List functions of middle ear.
19. Draw labelled diagram of relaxed Sarcomere.
20. Define stress and write adaptive changes.

Multiple Choice Questions **10 x 1 = 10 Marks**

21 i) Repolarization in a motor nerve is due to
    A. Influx of chloride ion
    B. Efflux of potassium ion
    C. Efflux of calcium ion
    D. Influx of sodium ion

21 ii) Hormones which have effect on the adjacent cells are called
    A. Classical hormones
    B. Neurohormones
    C. Paracrine hormones
    D. Autocrine hormones

21 iii) Increased secretion of growth hormone after puberty leads to
- A. Cretinism
- B. Dwarfi sm
- C. Acromegaly
- D. Gigantism

21 iv) Diabetes insipidus occurs due to the deficiency of
- A. Growth hormone
- B. Insulin
- C. ADH
- D. Thyroxine

21 v) The process of degeneration of peripheral nerve distal to the site of injury is termed
- A. Starling's degeneration
- B. Marey's degeneration
- C. Wallerian degeneration
- D. Brodmann's degeneration

22 i) The pain due to the inflammation of appendix felt around the umbilicus is an example for
- A. Referred pain
- B. Visceral pain
- C. Somatic pain
- D. Slow pain

22 ii) CSF is absorbed by
- A. Choroid plexus
- B. Central canal
- C. Arachnoid villi
- D. Third ventricle

22 iii) Near vision is tested by
- A. Snellen's chart
- B. Jaeger's chart
- C. Ishihara's chart
- D. Color ribbon

22 iv) Ovulation occurs at the end of
- A. Proliferative phase
- B. Secretory phase
- C. Midluteal phase
- D. Bleeding phase

22 v) Heat loss center is present in
- A. Lateral pons
- B. Medial pons
- C. Anterior hypothalamus
- D. Posterior hypothalamus

Rajiv Gandhi University of Health Sciences, Karnataka

MBBS Phase – I (CBME) Degree Examination - 05-Mar-2022

Time: Three Hours **Max. Marks: 100 Marks**

BIOCHEMISTRY – PAPER I (RS-4)
QP Code: 1024
(QP contains three pages)

Your answers should be specific to the questions asked
Draw neat labeled diagrams wherever necessary

LONG ESSAYS **2 x 10 = 20 Marks**

1. A 8 year old boy was brought to orthopaedic OPD with a complaint of abnormal gait for the past 3 months. Clinical examination showed tenderness over Tibia.
Laboratory investigation data revealed

Investigation	Patient report	Normal range
Serum Calcium	8.2 mg/dl	8.6-10.5 mg/dl
Serum Phosphate	2.3 mg/dl	2.3-4.5 mg/dl
Serum Vitamin D	3 ng/ml	8-55 ng/ml

   a. Name the vitamin D deficiency disorder in the above case
   b. What is the RDA of vitamin D?
   c. Explain the formation of calcitriol
   d. Describe the role of calcitriol in calcium homeostasis

2. Explain glycogenolysis. Write the difference between Liver and Muscle glycogenolysis. Mention the role of insulin and glucagon in glycogenolysis.

SHORT ESSAYS **8 x 5 = 40 Marks**

3. A pregnant lady who visited primary health care centre for antenatal check-up with complaints of tiredness and easy fatigability was found to be anemic. Peripheral smear showed microcytic hypochromic anemia.
   a. Name the mineral associated with the above disorder
   b. Write the dietary sources and RDA of the above mineral
   c. Write the biochemical functions of above mineral.

4. A 60 year old obese man, who underwent master health check-up was found to have mild hepatomegaly with fatty liver changes.
   a. What is fatty liver?
   b. Enumerate the causes of fatty liver
   c. Explain the role of lipotropic factors in preventing fatty liver.

5. Mention blood buffers. Explain the role of Lungs in acid base balance.

6. List five functions of phosphorous.

7. Describe steps in Ketogenesis. Mention two conditions associated with Ketonuria.

8. What is chemiosmotic hypothesis? Explain how proton gradient is utilized for ATP synthesis.

9. Describe competitive inhibition of enzymes with two examples.

10. Define Basal Metabolic Rate (BMR). Mention four factors affecting BMR.

SHORT ANSWERS **10 x 3 = 30 Marks**

11. Mention three functions of cholesterol.

12. What is HbA1C (Glycated Hemoglobin)? Mention its significance.

13. What are therapeutic enzymes? Give two examples with their therapeutic application.

14. What is facilitated diffusion? Give one example.

15. What is the role of Anti Diuretic Hormone (ADH) in water balance? Name the disorder associated with its deficiency.

16. What is Alkali reserve? List two causes of metabolic acidosis.

17. What is Marasmus? List two features of Marasmus.

18. Define Km. What is the significance of Km?

19. Name three mucopolysaccharides and write their functions.

20. Troponins are more specific cardiac marker compared to creatine kinase – Justify.

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Multiple Choice Questions **10 x 1 = 10 Marks**

21 i) Galactosyl transferase is marker for
- A. Cell membrane
- B. Mitochondria
- C. Lysosomes
- D. Golgi complex

21 ii) Osteogenesis imperfecta is due to defect in:
- A. Actin
- B. Collagen
- C. Keratin
- D. Crystallin

21 iii) Bile acid is derived from
- A. Cholesterol
- B. Glycerol
- C. Fatty acids
- D. Billirubin

21 iv) Inulin is a polymer of
- A. Glucose
- B. Fructose
- C. Mannose
- D. Galactose

21 v) Which of the following mineral is best known for antioxidant role?
- A. Calcium
- B. Iron
- C. Phosphorus
- D. Selenium

22 i) Positive nitrogen balance is seen in
- A. Pregnancy
- B. Malignancies
- C. Malnutrition
- D. Chronic illness

22 ii) Enzymes synthesized in inactive form is called as
- A. Coenzymes
- B. Apoenzymes
- C. Proenzymes
- D. Lysozymes

22 iii) Phospholipid deficiency in respiratory distress syndrome is
- A. Sphingomyelin
- B. Phosphatidyl ethanolamine
- C. Plasmalogen
- D. Lecithin

22 iv) Administration of loop diuretics leads to
- A. Metabolic acidosis
- B. Metabolic alkalosis
- C. Respiratory acidosis
- D. Respiratory alkalosis

22 v) Hyponatremia is seen in
- A. Addison’s disease
- B. Cushing’s disease
- C. Primary hyperaldosteronism
- D. Steroid therapy

Rajiv Gandhi University of Health Sciences, Karnataka

MBBS Phase – I (CBME) Degree Examination - 08-Mar-2022

Time: Three Hours **Max. Marks: 100 Marks**

BIOCHEMISTRY – PAPER II (RS-4)
Q.P. CODE: 1025
(QP contains three pages)

Your answers should be specific to the questions asked
Draw neat, labeled diagrams wherever necessary

LONG ESSAYS **2 x 10 = 20 Marks**

1. A child of two years presented with convulsions. He was taking normal feeds. But his mother observed mousy odour of child's urine. Urine ferric chloride test was positive. Plasma phenylalanine was found to be elevated. He was diagnosed to have phenyl Ketonuria
    a) What is the biochemical defect in phenyl Ketonuria?
    b) Describe the catabolism of phenylalanine
    c) Give the biochemical reasons for mousy odour in this case

2. Describe protein biosynthesis in prokaryotes. Mention three inhibitors of protein biosynthesis

SHORT ESSAYS **8 x 5 = 40 Marks**

3. A 45 year old man presented with severe back pain and weakness. He had lost 7 kgs in last three months. He complained of loss of appetite and fatigue. X-ray showed punched out lesions. Urine is positive for Bence Jones protein
    a) Name the disorder in above case
    b) What are Bence Jones proteins?
    c) What is the electrophoretic pattern that is observed in this case?

4. A known case of diabetes and hypertension on irregular treatment presented with swelling of both lower limbs and puffiness of face. He was diagnosed with chronic kidney disease (CKD)
    a) Mention two biochemical parameters altered in CKD.
    b) Explain the test to assess glomerular function of Kidney.

5. What is Porphyria? Write the types of porphyria. Mention enzyme defect and clinical features of acute intermittent porphyria

6. How are free radicals generated? Describe the free radical scavenging systems

7. List the hormones which function with cAMP as second messenger. Describe the mechanism of action of steroid hormones

8. Enumerate the reactions of purine salvage pathway. Name the disorders that is associated with this pathway and write its clinical features

9. What are restriction endonucleases? Give two examples. Explain their role in Recombinant DNA technology

10. What is polymerase chain reaction (PCR)? Explain the steps in PCR. Write two applications of PCR

SHORT ANSWERS **10 x 3 = 30 Marks**

11. List out the assays done for evaluation of thyroid function. Enumerate the laboratory findings in hyperthyroidism

12. What is detoxification? Give two examples of detoxification by oxidative reaction

13. What are reference intervals? List out two pre analytical variables

14. What is Southern Blotting Technique? Mention its applications

15. Name three nucleotides and write their biological importance

16. What is innate and adaptive immune response?

17. Give three examples of tumour markers and write their clinical importance

18. Write the serum and urinary biochemical findings in hemolytic jaundice

19. What are oncogenes? What are the factors that activate oncogenes?

20. What are essential amino acids? Give examples

Multiple Choice Questions **10 x 1 = 10 Marks**

21 i) Heme is converted to bilirubin in
- A. Mitochondria
- B. Microsomes
- C. Golgi apparatus
- D. Plasma membrane

21 ii) Immunoglobulin which crosses placenta is
- A. IgG
- B. IgA
- C. IgM
- D. IgD

21 iii) The amino acid which **do not** allow formation of alpha helix is
- A. Glutamate
- B. Proline
- C. Tyrosine
- D. Histidine

21 iv) Histones are rich in
- A. Glutamic acid and aspartic acid
- B. Glycine and serine
- C. Methionine and cysteine
- D. Arginine and Histidine

21 v) Which of the following is a termination codon?
- A. AAG
- B. CAG
- C. CAA
- D. UAG

22 i) In which of the following phase of cell cycle DNA replication takes place
- A. G_1
- B. G_2
- C. S
- D. M

22 ii) Which of the following antioxidant enzyme is selenium dependent?
- A. Glutathione peroxidase
- B. Glutathione reductase
- C. NADPH oxidase
- D. Catalase

22 iii) Which of the following compound used in the treatment of gout is a competitive inhibitor of xanthine oxidase?
- A. Probenicid
- B. Allopurinol
- C. Colchicine
- D. Acetaminophen

22 iv) Normal serum level of albumin is
- A. 1.5 to 2.5 gm/dl
- B. 3.5 to 5 gm /dl
- C. 6 to 7.5 gm/dl
- D. 9 to 11 gm/dl

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MBBS Phase - I Degree Examination – 03-Mar-2022

Time: Three Hours **Max. Marks: 100 Marks**

PHYSIOLOGY - II (RS3)
QP Code: 1078

Your answers should be specific to the questions asked
Draw neat labeled diagrams wherever necessary

LONG ESSAYS **2 x 10 = 20 Marks**

1. Describe the Corticospinal tract with the help of a labeled diagram. What is the effect of lesion at the internal capsular level?
2. Describe the hormonal regulation of menstrual cycle.

SHORT ESSAYS **10 x 5 = 50 Marks**

3. Functions of Thalamus
4. Brown-sequard syndrome
5. Mechanism of color vision
6. Corpus luteum
7. Mechanism of hearing
8. Anti thyroid drugs
9. Crossed extensor reflex
10. Four properties of synapse
11. Functions of testosterone
12. Ascending reticular activating system

SHORT ANSWERS **10 x 3 = 30 Marks**

13. Rigor mortis
14. Differences between spasticity and rigidity
15. Physiological basis of pregnancy test
16. Neuroglia
17. Otolith organ
18. Functions of hypothalamus
19. Addisson’s disease
20. Intention tremor
21. Macular sparing
22. Depth perception

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Rajiv Gandhi University of Health Sciences, Karnataka

MBBS Phase – I Degree Examination - 05-Mar-2022

Time: Three Hours **Max. Marks: 50 Marks**

BIOCHEMISTRY – PAPER I (RS3)
QP Code: 1079

Your answers should be specific to the questions asked
Draw neat labeled diagrams wherever necessary
(Note: Both QP Codes 1079 and 1080 are to be, answered within total duration of three hours)
(Use separate Answer books for QP Code 1079 & 1080)

LONG ESSAYS **1 x 10 = 10 Marks**

1. Explain in detail the beta oxidation of palmitic acid. Add a note on its energetics.

SHORT ESSAYS **5 x 5 = 25 Marks**

2. Classification of enzymes with examples.
3. Digestion and absorption of carbohydrates
4. Metabolic functions of glycine
5. Hormonal regulation of blood glucose
6. Urea cycle

SHORT ANSWERS **5 x 3 = 15 Marks**

7. Detoxification by conjugation
8. Specificity of enzymes
9. Structure and functions of mitochondria
10. Tumour markers
11. Fatty liver

MBBS Phase – I Degree Examination - 05-Mar-2022

Time: Three Hours **Max. Marks: 50 Marks**

BIOCHEMISTRY – PAPER I (RS3)
QP Code: 1079

Your answers should be specific to the questions asked
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9. Structure and functions of mitochondria
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MBBS Phase – I Degree Examination – 05-Mar-2022

Time: Three Hours **Max. Marks: 50 Marks**

BIOCHEMISTRY – PAPER II (RS3)
Q.P. CODE: 1080

Your answers should be specific to the questions asked.
Draw neat, labeled diagrams wherever necessary.
(Note: Both QP Codes 1079 and 1080 are to be, answered within total duration of three hours)
(Use separate Answer books for QP Code 1079 & 1080)

LONG ESSAYS **1 x 10 = 10 Marks**

1. Write in detail about heme synthesis and its regulation. Add a note on Acute intermittent porphyria

SHORT ESSAYS **5 x 5 = 25 Marks**

2. Purine catabolism and its disorder
3. Role of protein buffers in acid-based balance
4. Biological value of proteins
5. Antioxidants
6. Glomerular function test

SHORT ANSWERS **5 x 3 = 15 Marks**

7. Gene therapy
8. Specific Dynamic Action (SDA)
9. Anion gap
10. Messenger RNA
11. Posttranscriptional modifications

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MBBS Phase – I (CBME) Degree Examination - 08-Mar-2022

Time: Three Hours **Max. Marks: 100 Marks**

BIOCHEMISTRY – PAPER II (RS-4)
Q.P. CODE: 1025
(QP contains three pages)

Your answers should be specific to the questions asked
Draw neat, labeled diagrams wherever necessary

LONG ESSAYS **2 x 10 = 20 Marks**

1. A child of two years presented with convulsions. He was taking normal feeds. But his mother observed mousy odour of child's urine. Urine ferric chloride test was positive. Plasma phenylalanine was found to be elevated. He was diagnosed to have phenyl Ketonuria
    d) What is the biochemical defect in phenyl Ketonuria?
    e) Describe the catabolism of phenylalanine
    f) Give the biochemical reasons for mousy odour in this case

2. Describe protein biosynthesis in prokaryotes. Mention three inhibitors of protein biosynthesis

SHORT ESSAYS **8 x 5 = 40 Marks**

3. A 45 year old man presented with severe back pain and weakness. He had lost 7 kgs in last three months. He complained of loss of appetite and fatigue. X-ray showed punched out lesions. Urine is positive for Bence Jones protein
    d) Name the disorder in above case
    e) What are Bence Jones proteins?
    f) What is the electrophoretic pattern that is observed in this case?

4. A known case of diabetes and hypertension on irregular treatment presented with swelling of both lower limbs and puffiness of face. He was diagnosed with chronic kidney disease (CKD)
    c) Mention two biochemical parameters altered in CKD.
    d) Explain the test to assess glomerular function of Kidney.

5. What is Porphyria? Write the types of porphyria. Mention enzyme defect and clinical features of acute intermittent porphyria

6. How are free radicals generated? Describe the free radical scavenging systems

7. List the hormones which function with cAMP as second messenger. Describe the mechanism of action of steroid hormones

8. Enumerate the reactions of purine salvage pathway. Name the disorders that is associated with this pathway and write its clinical features

9. What are restriction endonucleases? Give two examples. Explain their role in Recombinant DNA technology

10. What is polymerase chain reaction (PCR)? Explain the steps in PCR. Write two applications of PCR

SHORT ANSWERS **10 x 3 = 30 Marks**

11. List out the assays done for evaluation of thyroid function. Enumerate the laboratory findings in hyperthyroidism

12. What is detoxification? Give two examples of detoxification by oxidative reaction

13. What are reference intervals? List out two pre analytical variables

14. What is Southern Blotting Technique? Mention its applications

15. Name three nucleotides and write their biological importance

16. What is innate and adaptive immune response?

17. Give three examples of tumour markers and write their clinical importance

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- E. 1.5 to 2.5 gm/dl
- F. 3.5 to 5 gm /dl
- G. 6 to 7.5 gm/dl
- H. 9 to 11 gm/dl

22 v) End product of catabolism of protein is?
- A. Urea

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B. Uric acid
C. Creatinine
D. Orotic acid

MBBS Phase – I (CBME) Degree Examination - 13-May-2022

Time: Three Hours **Max. Marks: 100 Marks**

ANATOMY – PAPER I (RS-4)
Q.P. CODE: 1020
(QP contains two pages)

Your answers should be specific to the questions asked
Draw neat, labeled diagrams wherever necessary

LONG ESSAYS **2 x 10 = 20 Marks**

1. Describe shoulder joint under following headings
   a) Type of joint and articular surfaces
   b) Ligaments
   c) Movements and muscles causing them
   d) Blood and nerve supply
   e) Applied anatomy

2. A person aged about 65 years came to hospital with a complaint of bleeding from thick large ulcer on the side of the tongue which is present since one year and not responding to antibiotics. He is diagnosed with carcinoma of tongue.
   a) Explain the mode of spread of carcinoma of tongue
   b) Explain the presenting parts, muscles and nerve supply of tongue

SHORT ESSAYS **8 x 5 = 40 Marks**

3. . Write in detail about origin, course, relations and muscles supplied by anterior interosseous nerve.
4. . Describe the extent, branches and relations of Arch of Aorta.
5. . Compare and contrast spermatogenesis and oogenesis.
6. Write in detail about the bronchopulmonary segments and its applied aspects.
7. Describe the venous drainage of face. Add a note on dangerous area of face.
8. Compare and contrast microscopic structure of large sized artery and large sized vein.
9. Draw a neat labelled diagram of section of mid brain at the level of superior colliculus.
10. Describe sulci, gyri and functional areas of frontal lobe.

SHORT ANSWERS **10 x 3 = 30 Marks**

11. Mention any six derivatives of neural crest cells.
12. List any three modifications of deep fascia.
13. Enumerate three peculiarities of clavicle
14. Name the pleural recesses and its function
15. Mention the root value, vessel accompanying and muscle supplied by phrenic nerve.
16. Name extraocular muscles of Orbit. Mention their nerve supply
17. Name the structures pierced by parotid duct. Where does it open?
18. Mention the contents of carotid sheath. List any three structures piercing the carotid sheath
19. Draw a neat labelled diagram of transverse section of spinal cord showing the ascending and descending tracts.
20. Describe arterial supply of long bone.

Multiple Choice Questions **10 x 1 = 10 Marks**

21 i) Pace maker of heart is
   A. S A node
   B. A V node
   C. Bundle of His
   D. Purkinje fibres

21 ii) Anterior intercostal artery is a branch of
- A. Descending thoracic aorta
- B. Arch of aorta
- C. Pericardiacophrenic artery
- D. Internal thoracic artery

21 iii) Root value of Axillary nerve is
- A. C_8 & T_1
- B. C_7 & C_8
- C. C_6 & C_7
- D. C_5 & C_6

21 iv) Coracoid process is an example of
- A. Traction epiphysis
- B. Atavistic epiphysis
- C. Pressure epiphysis
- D. Aberrant epiphysis

21 v) Nerve supplying Carotid sinus is
- A. Vagus nerve
- B. Accessory nerve
- C. Glossopharygeal nerve
- D. Facial nerve

22 i) Serous demilune is present in
- A. Serous salivary gland
- B. Pancreas
- C. Mixed salivary gland
- D. Mucous salivary gland

22 ii) Nasolacrimal duct opens into
- A. Supreme meatus
- B. Superior meatus
- C. Middle meatus
- D. Inferior meatus

22 iii) Sclerotome give rise to
- A. Tendon
- B. Muscle
- C. Bone
- D. Skin

22 iv) Great cerebral vein is formed by
- A. Two internal cerebral veins
- B. Two middle cerebral veins
- C. Two vertebral veins
- D. Two thalamostriate veins

22 v) Sternocleidomastoid muscle is supplied by
- A. Spinal accessory nerve
- B. Hypoglossal nerve
- C. Glossopheryngeal nerve
- D. Vagus nerve

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MBBS Phase – I (CBME) Degree Examination - 09-May-2022

Time: Three Hours **Max. Marks: 100 Marks**

PHYSIOLOGY – PAPER - I (RS-4)
Q.P. CODE: 1022
(QP contains two pages)

Your answers should be specific to the questions asked
Draw neat, labeled diagrams wherever necessary

LONG ESSAYS **2 x 10 = 20 Marks**

1. List out the components and functions of gastric juice. Explain the regulation of secretion of gastric juice.
2. Define Glomerular Filtration Rate. Mention normal values and explain the factors affecting glomerular filtration.

SHORT ESSAYS **8 x 5 = 40 Marks**

3. . Explain mechanisms of Innate immunity.
4. . Explain intrinsic mechanism of coagulation.
5. . Define Cardiac index. Mention its normal value and explain the factors influencing it
6. Explain non-progressive stages of Hypovolemic shock with signs and symptoms.
7. An elderly female who was a known case of Ischemic heart disease presented with history of breathlessness, orthopnoea, fatigue, swelling of both feet since last 10 days. On examination pedal oedema was seen, Jugular venous pulse (JVP) was raised, crepitations were heard on auscultation.
   a) What is the probable diagnosis?
   b) What is the physiologic basis for pedal oedema and raised JVP
   c) What is the physiologic basis for treating the case with diuretics
8. Describe process of oxygen transport in blood and explain O2-Hb dissociation curve
9. Define micturition and explain the mechanism involved in it.
10. Indications and different methods of Artificial respiration.

SHORT ANSWERS **10 x 3 = 30 Marks**

11. What is co-transport? Give two examples
12. Name three Interleukins with their functions.
13. What is Thrombocytopenia? List its effects
14. Define Erythrocyte Sedimentation Rate. Give normal value and its significance
15. What is PR-interval? Give its significance
16. Significance of 'Isovolumetric contraction' during each cardiac cycle.
17. Windkessel effect and its significance
18. Write the cause and features of Achalasia cardia
19. Cheyne-stroke breathing.
20. Asphyxia.

Multiple Choice Questions **10 x 1 = 10 Marks**

21 i) Tight junctions are not present at
   A. Intestinal mucosa
   B. Renal tubules
   C. Choroid plexus
   D. Liver sinusoids

21 ii) The normal plasma protein value in g/dL
   A. <2
   B. 2 to 4
   C. 6 to 8
   D. >8

21 iii) Lifespan of RBC expressed in months
- A. 1
- B. 2
- C. 3
- D. 4

21 iv) T wave in ECG is produced due to
- A. Atrial depolarization
- B. Ventricular depolarization
- C. Atrial repolarization
- D. Ventricular repolarization

21 v) Korotkoff sound are produced due to
- A. Turbulence to the flow of blood
- B. Laminar flow of blood
- C. Closure of AV valves
- D. Closure of semilunar valve

22 i) The normal tidal volume in ml
- A. 300
- B. 500
- C. 700
- D. 900

22 ii) The normal value of anatomical dead space in ml
- A. 50
- B. 150
- C. 250
- D. 350

22 iii) Interruption of respiration during swallowing is called
- A. Deglutition apnea
- B. Sleep apnea
- C. Hyperpnea
- D. Dyspnea

22 iv) The process of concentrating urine is the main function of
- A. Cortical nephron
- B. Descending loop of Henle
- C. Juxtamedullary nephron
- D. Collecting duct

22 v) The factor that delay gastric emptying
- A. Vagal
- B. Gastrin
- C. Carbohydrate rich meal
- D. Protein rich meal

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MBBS Phase – I (CBME) Degree Examination - 11-May-2022

Time: Three Hours **Max. Marks: 100 Marks**

PHYSIOLOGY – PAPER - II (RS-4)
Q.P. CODE: 1023
(QP contains two pages)

Your answers should be specific to the questions asked
Draw neat, labeled diagrams wherever necessary

LONG ESSAYS **2 x 10 = 20 Marks**

1. List out the functional divisions and functions of cerebellum. Add a note on cerebellar dysfunction.

2. List out the hormones of adrenal cortex and explain in detail about the functions of cortisol. Add a note on Cushing's syndrome.

SHORT ESSAYS **8 x 5 = 40 Marks**

3. Describe the steps involved in actin-myosin interaction and the generation of power stroke.

4. Describe with neat labelled diagram of Dorsal column-medial Lemniscal pathway from upper limb.

5. What is referred pain? Explain theories of referred pain

6. Describe pituitary and thyroid Dwarfism.

7. Describe Ovarian changes during menstrual cycle with hormonal regulation.

8. A couple married since 5 years and history of not conceiving comes to the doctor for advice. Male partner underwent semen analysis and female partner was also investigated.
   a) What are the tests for female partner to confirm ovulation?
   b) What sperm count indicates Oligospermia?

9. Draw neat diagram of taste buds and explain its functions.

10. Describe the role of skin and cutaneous circulation in maintaining body temperature.

SHORT ANSWERS **10 x 3 = 30 Marks**

11. What is Rigor Mortis and write its significance

12. What is Oxygen debt?

13. Write features of Upper motor neuron lesion.

14. Draw a neat labeled diagram of muscle spindle.

15. Functions of cerebrospinal fluid.

16. Functions of calcitonin.

17. Hypogonadism in the male.

18. Explain Weber's test and its interpretation.

19. Explain myopia with corrections.

20. Physiological consequence of sedentary life style

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Multiple Choice Questions **10 x 1 = 10 Marks**

21 i) Hyperpolarization in a motor nerve is due to
- A. Influx of chloride ion
- B. Continued efflux of potassium ion
- C. Efflux of calcium ion
- D. Influx of sodium ion

21 ii) Parturition reflex is an example of
- A. Negative feedback mechanism
- B. Positive feedback mechanism
- C. Neural regulation
- D. Chronotropic regulation

21 iii) Increased secretion of growth hormone before puberty leads to
- A. Cretinism
- B. Dwarfism
- C. Acromegaly
- D. Gigantism

21 iv) Myxoedema is due to
- A. Euthyroidism in children
- B. Hypothyroidism in adults
- C. Hyperthyroidism in children
- D. Hyperthyroidism in adults

21 v) Stretch reflex is an example for
- A. Monosynaptic
- B. Polysynaptic
- C. Conditional reflex
- D. Cortical reflex

22 i) Temporary cessation of function of the nerve due to its compression is
- A. Neuropraxia
- B. Axonotmesis
- C. Neurotmesis
- D. Chromatolysis

22 ii) The example of synthetic sensation is
- A. Touch
- B. Pain
- C. Stereognosis
- D. Temperature

22 iii) Color vision is tested by
- A. Snellen’s chart
- B. Jaeger’s chart
- C. Ishihara’s chart
- D. Landolt’s chart

22 iv) The phase of a menstrual cycle occurring after ovulation is
- A. Proliferative phase
- B. Secretory phase
- C. Midluteal phase
- D. Bleeding phase

22 v) Action potential in a motor neuron develops at
- A. Soma
- B. Dendrite
- C. Initial segment of Axon
- D. Nodes of Ranvier

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MBBS Phase – I (CBME) Degree Examination - 05-May-2022

Time: Three Hours **Max. Marks: 100 Marks**

BIOCHEMISTRY – PAPER I (RS-4)
QP Code: 1024
(QP contains three pages)

Your answers should be specific to the questions asked
Draw neat labeled diagrams wherever necessary

LONG ESSAYS **2 x 10 = 20 Marks**

1. A 10-year-old boy with poor nutritional intake was brought to the ophthalmology OPD with history of difficulty in vision in dim light. Incidentally, on examination, he had few lesions on skin. A provisional diagnosis of vitamin deficiency was made.
   (a) Name the fat-soluble vitamin deficiency associated with the above case.
   (b) Write the recommended dietary allowance (RDA) for above vitamin.
   (c) Explain Wald's visual cycle.
   (d) Write any two other functions of this vitamin.
2. Write the steps in beta-oxidation of palmitic acid. Explain the energetics of the pathway.

SHORT ESSAYS **8 x 5 = 40 Marks**

3. A known diabetic patient on regular insulin treatment was brought to the casualty in a semi-comatose state. He had history of vomiting and diarrhea for the past two days and his food intake was reduced. His random blood sugar (RBS) on admission was 45mg/dl.
   (a) Interpret the glucose value in the above case.
   (b) Explain hormonal regulation of blood glucose level.
4. An elderly patient with history of chronic smoking presented to medicine OPD with history of difficulty in breathing. Following respiratory system examination, physician made a diagnosis of chronic obstructive airway disease and his arterial blood was sent for arterial blood gas (ABG) analysis.
   (a) Write the probable acid-base disorder in the above condition.
   (b) Mention the compensatory mechanisms for the above acid-base disorder.
   (c) Write the biological reference interval for:
      (i) Blood pH (ii) Blood pCO2 (iii) Plasma bicarbonate
5. Classify enzymes and give one example to each class.
6. Explain the components of electron transport chain.
7. Mention the significance of gluconeogenesis. Write the reactions catalyzed by the key enzymes of gluconeogenesis.
8. Mention the biological reference interval for serum sodium. Write any three biochemical functions of sodium. List two causes for hyponatremia.
9. Explain five factors affecting basal metabolic rate (BMR).
10. Explain the regulation of serum calcium level.

SHORT ANSWERS **10 x 3 = 30 Marks**

11. Define respiratory quotient (RQ). Mention the RQ for carbohydrate. Name one condition responsible for decrease in RQ.
12. Explain uniport, symport and antiport transport system with one example for each.
13. Name any three mucopolysaccharides and write their biological importance.
14. Name three therapeutic enzymes and write their uses.
15. Name essential fatty acids. Mention two functions of essential fatty acids.
16. Mention the metabolic pathways in Liver that are activated during starvation.
17. Write the biochemical functions of iodine. Mention the disorder associated with iodine deficiency.
18. What is anion gap? Write two conditions associated with high anion gap acidosis.

19. Name three enzyme profile in liver diseases and mention their diagnostic significance.

20. What is leptin? Mention its biological importance.

Multiple Choice Questions **10 x 1 = 10 Marks**

21 i) Which one of the following enzymes is present in lysosomes?
- A. Phospholipase
- B. Aldolase
- C. Acetyl CoA carboxylase
- D. HMG CoA reductase

21 ii) Which one of the following is a noncompetitive inhibitor?
- A. Allopurinol
- B. Iodoacetate
- C. Methotrexate
- D. Lovastatin

21 iii) Which one of the following is a dietary fibre?
- A. Starch
- B. Heparin
- C. Pectin
- D. Dextrin

21 iv) Which one of the following is involved in the formation of liposomes?
- A. Lipoproteins
- B. Triglyceride
- C. Free cholesterol
- D. Phospholipids

21 v) Which one of the following is an allosteric inhibitor of phosphofructokinase?
- A. Fructose-6-phosphate
- B. Fructose-2, 6 bisphosphate
- C. AMP
- D. Citrate

22 i) Lipoprotein lipase is activated by
- A. Apo A-I
- B. Apo B 100
- C. Apo E
- D. Apo C – II

22 ii) Which one of the following is a feature of Ehlers-Danlos syndrome?
- A. Loose skin
- B. Poor wound healing
- C. Ectopia lentis
- D. Brittle bones

22 iii) The daily requirement of vitamin D in adult males is
- A. 10 microgram
- B. 20 microgram
- C. 30 microgram
- D. 40 microgram

22 iv) Which one of the following mineral is present in Vitamin B12?
- A. Calcium
- B. Cobalt
- C. Chromium
- D. Copper

22 v) An example for cardiac glycoside is
- A. Digitalis
- B. Sorbitol
- C. Glucuronic acid
- D. Mannosamine

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MBBS Phase – I (CBME) Degree Examination - 07-May-2022

Time: Three Hours **Max. Marks: 100 Marks**

BIOCHEMISTRY – PAPER II (RS-4)
Q.P. CODE: 1025
(QP contains three pages)

Your answers should be specific to the questions asked
Draw neat, labeled diagrams wherever necessary

LONG ESSAYS **2 x 10 = 20 Marks**

1. A 50 year old obese man with history of alcoholism presented with acute pain and swelling of the great toe. His laboratory investigations revealed serum uric acid level of 10mg/dl. A diagnosis of gout was made and further evaluation was suggested.
   (a) Explain the steps in the formation of uric acid.
   (b) Mention the causes of primary and secondary gout.
   (c) Write the basis for treatment of gout with the drug allopurinol.
2. Enumerate the steps in recombinant DNA technology. Explain the role of vectors used in recombinant DNA technology. Write two medical applications of recombinant DNA technology.

SHORT ESSAYS **8 x 5 = 40 Marks**

3. A 60 year old man who is a known case of diabetes mellitus and hypertension presented with passing frothy urine, nausea and hiccups. Following biochemical investigations, blood urea and serum creatinine were elevated and a diagnosis of chronic kidney disease (CKD) was made.
   (a) Where is urea formed in the body?
   (b) Mention the biological reference interval for blood urea.
   (c) Mention one pre-renal, renal and post-renal cause for increase in blood urea level.
4. .A young patient who presented with fever, nausea, vomiting and yellowish discoloration of eyes was diagnosed to be suffering from viral hepatitis.
   (a) Write the serum and urine biochemical findings in a case of hepatic jaundice.
   (b) Write the type van den Bergh reaction seen in above case.
5. .Name five tumor markers and write their diagnostic significance.
6. Explain the role of antioxidants in prevention of free radical injury.
7. Explain the steps of DNA replication in prokaryotes.
8. Explain the structure and functions of DNA.
9. Name five plasma proteins and write their functions.
10. Enumerate the biologically important compounds formed from glycine. Write their significance.

SHORT ANSWERS **10 x 3 = 30 Marks**

11. Name the essential amino acids and write their significance.
12. Name three immunoglobulins and write their functions.
13. Name three variables leading to pre-analytical errors in clinical laboratory.
14. What is Western blotting technique? Write its applications.
15. Write three features of genetic code.
16. Enumerate three Transmethylation reactions.
17. Enumerate three examples for post-translational modification of proteins.
18. What are porphyrias? Write the enzyme defects of any two porphyrias.
19. Write the mechanism of action of steroid hormones.
20. Name three compounds formed from tryptophan and write their significance.

Multiple Choice Questions **10 x 1 = 10 Marks**

Rajiv Gandhi University of Health Sciences, Karnataka

21 i) Which one of the following is a peptide?

A. Collagen
B. Hemoglobin
C. Myoglobin
D. Inulin

21 ii) N- Acetyl glutamate (NAG) regulates which of the following urea cycle enzymes?

A. Carbamoyl phosphate synthetase I
B. Ornithine transcarbamoylase
C. Argininosuccinate synthetase
D. Arginase

21 iii) Bence Jones protein is seen in

A. Hepatoma
B. Multiple myeloma
C. Ovarian cancer
D. Colon cancer

21 iv) Which one of the plasma protein is decreased in patients with nephrotic syndrome?

A. Albumin
B. Immunoglobulin
C. Alpha2 macroglobulin
D. Beta globulins

21 v) In which hemoglobin iron is present in ferric state?

A. Sulfhemoglobin
B. Carboxyhemoglobin
C. Methemoglobin
D. Sickle cell hemoglobin

22 i) The conjugating agent for bilirubin is

A. Glycine
B. Cysteine
C. Glutamine
D. Glucuronate

22 ii) During DNA replication, supercoiling is removed by

A. Polymerase
B. Topoisomerase
C. Helicase
D. Ligase

22 iii) Which of the following enzyme is elevated in obstructive jaundice?

A. Alkaline phosphatase
B. Neuron specific enolase
C. Acid phosphatase
D. Lipoprotein lipase

22 iv) Sugar present in RNA is

A. Ribose
B. Ribulose
C. Deoxyribose
D. Xylose

22 v) The closeness of the result of a quality control to its true value is termed as

A. Sensitivity
B. Specificity
C. Accuracy
D. Precision

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Rajiv Gandhi University of Health Sciences, Karnataka

MBBS Phase – I Degree Examination - 13-May-2022

Time: Three Hours **Max. Marks: 100 Marks**

ANATOMY – PAPER - I (RS3)
Q.P. CODE: 1075

Your answers should be specific to the questions asked.
Draw neat, labeled diagrams wherever necessary.

LONG ESSAYS **2 x 10 = 20 Marks**

1. Describe in detail gross anatomy of the lung. Add a note on its applied anatomy.
2. Describe in detail about the parotid gland. Add a note on its applied anatomy.

SHORT ESSAYS **10 x 5 = 50 Marks**

3. Primitive streak.
4. Radial artery.
5. Ossification.
6. Intercostal space.
7. Floor of IV ventricle.
8. Axillary nerve.
9. Paranasal air sinuses.
10. Medial wall of middle ear.
11. Median cubital vein.
12. Histology of Elastic artery.

SHORT ANSWERS **10 x 3 = 30 Marks**

13. Pericardial sinuses.
14. Platysma.
15. Layers of skin.
16. Rotator cuff muscles.
17. Mediastinum – sub division and enumerate contents of posterior mediastinum.
18. Carotid sheath.
19. Synovial joint features.
20. Quadrangular space.
21. Waldeyer’s ring.
22. Corpus callosum – types of fibres and parts.

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Rajiv Gandhi University of Health Sciences, Karnataka

MBBS Phase – I Degree Examination - 09-May-2022

Time: Three Hours **Max. Marks: 100 Marks**

PHYSIOLOGY – I (RS3)
Q.P. CODE: 1077

Your answers should be specific to the questions asked
Draw neat, labeled diagrams wherever necessary

LONG ESSAYS **2 x 10 = 20 Marks**

1. Define cardiac cycle and give its normal duration. Describe the mechanical events that take place during a cardiac cycle with help of a diagram.

2. Define immunity and give the types of immunity. Describe the cell mediated immunity and humoral immunity.

SHORT ESSAYS **10 x 5 = 50 Marks**

3. Negative feedback mechanism
4. Functions of plasma proteins
5. Define Erythropoiesis. Describe its stages.
6. Intrinsic mechanism of coagulation.
7. Functions of liver
8. Role of surfactant in lungs
9. Active transport.
10. Regulation of coronary circulation
11. Renin – angiotensin system
12. Define glomerular function rate. Describe the factors affecting it.

SHORT ANSWERS **10 x 3 = 30 Marks**

13. Erythrocyte sedimentation rate.
14. Gastrin.
15. Define and classify hypoxia.
16. Draw a labelled diagram of ECG.
17. Hormones secreted by the kidney
18. Gap junctions.
19. Reticulo-endothelial system
20. Land Steiner law
21. List the phases of deglutition
22. Steatorrhea

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Rajiv Gandhi University of Health Sciences, Karnataka

MBBS Phase – I Degree Examination - 11-May-2022

Time: Three Hours **Max. Marks: 100 Marks**

PHYSIOLOGY – II (RS3)
Q.P. CODE: 1078

Your answers should be specific to the questions asked
Draw neat, labeled diagrams wherever necessary

LONG ESSAYS **2 x 10 = 20 Marks**

1. Trace the visual pathway. Explain the effects of lesion at various points in the pathway
2. What is menstrual cycle? Explain the ovarian changes taking place during menstrual cycle

SHORT ESSAYS **10 x 5 = 50 Marks**

3. Explain Neuroendocrine reflex
4. Differences between REM sleep and NREM sleep
5. Functions of hypothalamus.
6. Functions of basal ganglia.
7. Contents and functions of middle ear.
8. Explain three properties of synapse.
9. Spermatogenesis
10. Biosynthesis of thyroid hormone
11. Origin and course of Pyramidal tract
12. Structure and functions of Neuromuscular junction

SHORT ANSWERS **10 x 3 = 30 Marks**

13. What is phantom limb.
14. Four functions of reticular activating system
15. Functions of prefrontal lobe
16. Conductive deafness.
17. Types of memory.
18. Acromegaly.
19. What is summation? Mention its types
20. Draw the structure of Rods and Cones
21. Features of Parkinson’s disease.
22. What are the hormones secreted by adrenal cortex?

Rajiv Gandhi University of Health Sciences, Karnataka

MBBS Phase – I Degree Examination - 05-May-2022

Time: Three Hours **Max. Marks: 50 Marks**

BIOCHEMISTRY – PAPER I (RS3)
QP Code: 1079

Your answers should be specific to the questions asked.
Draw neat labeled diagrams wherever necessary.
(Note: Both QP Codes 1079 and 1080 are to be, answered within total duration of three hours)
(Use separate Answer books for QP Code 1079 & 1080)

LONG ESSAYS **1 x 10 = 10 Marks**

1. Write the steps of β-oxidation of palmitic acid. Add a note on energetics.

SHORT ESSAYS **5 x 5 = 25 Marks**

2. Formation and utilization of ketone bodes.
3. Urea cycle.
4. Homopolysaccharides.
5. Substrate level Phosphorylation
6. Isoenzymes

SHORT ANSWERS **5 x 3 = 15 Marks**

7. Biochemical function and markers of Mitochondria
8. Lactose intolerance.
9. Anapleurotic reactions
10. Markers of carcinoma prostate
11. Essential fatty acids.

Rajiv Gandhi University of Health Sciences, Karnataka

MBBS Phase – I Degree Examination - 05-May-2022

Time: Three Hours **Max. Marks: 50 Marks**

BIOCHEMISTRY – PAPER II (RS3)
QP Code: 1080

Your answers should be specific to the questions asked.
Draw neat labeled diagrams wherever necessary.
(Note: Both QP Codes 1079 and 1080 are to be, answered within total duration of three hours)
(Use separate Answer books for QP Code 1079 & 1080)

LONG ESSAYS **1 x 10 = 10 Marks**

1. What is normal pH of blood? Discuss in detail role of kidneys in pH regulation. Add a note on metabolic acidosis.

SHORT ESSAYS **5 x 5 = 25 Marks**

2. Biochemical functions, recommended dietary allowance and the deficiency of thiamine
3. Mutation
4. Dietary fibre.
5. Salvage pathway of purine nucleotides with the clinical disorders associated with it.
6. Outline the degradation of heme and excretion of products of degradation

SHORT ANSWERS **5 x 3 = 15 Marks**

7. Bile salts and bile pigments in the diagnosis of various types jaundice
8. Oncogene.
9. Orotic aciduria
10. Functions of albumin.
11. Clearance test.

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Rajiv Gandhi University of Health Sciences, Karnataka

MBBS Phase – I Degree Examination – 16-May-2022

Time: Three Hours **Max. Marks: 100 Marks**

ANATOMY – PAPER - II (RS3)
Q.P. CODE: 1076

Your answers should be specific to the questions asked.
Draw neat, labeled diagrams wherever necessary.

LONG ESSAYS **2 x 10 = 20 Marks**

1. Describe the gross anatomy of Pancreas in detail. Add a note on its applied anatomy.

2. Describe the hip joint under the following headings.
   a) Articular surfaces
   b) Ligaments
   c) Movements
   d) Blood and nerve supply
   e) Applied anatomy

SHORT ESSAYS **10 x 5 = 50 Marks**

3. Popliteal artery
4. Ischiorectal fossa
5. Histology of fallopian tube
6. Gluteus maximus muscle
7. Development of urinary bladder
8. Down's syndrome
9. Gall bladder
10. Formation of rectus sheath and its contents
11. Caecum.
12. Development of testis and its descent.

SHORT ANSWERS **10 x 3 = 30 Marks**

13. Doughlas pouch
14. Formation of portal vein
15. Inguinal hernia
16. Branches of internal iliac artery
17. Lobes of the prostate
18. Histology of duodenum – Draw and label only
19. Barr body
20. Epiploic foramen
21. Parts of uterus
22. Stomach bed

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Rajiv Gandhi University of Health Sciences, Karnataka

MBBS Phase – I (CBME) Degree Examination - 16-May-2022

Time: Three Hours **Max. Marks: 100 Marks**

ANATOMY – PAPER II (RS-4)
Q.P. CODE: 1021
(QP contains three pages)

Your answers should be specific to the questions asked
Draw neat, labeled diagrams wherever necessary

LONG ESSAYS **2 x 10 = 20 Marks**

1. An 18 year old young basket ball player comes to hospital with complaints of pain in the foot. On evaluation, flat foot is diagnosed.
   a) Mention the anatomical basis for flat foot.
   b) Classify arches of foot and mention each of its components
   c) Discuss the mechanism of maintenance of arches of foot

2. Describe the anatomy of urinary bladder under the following headings :
   a) Presenting parts
   b) Relations
   c) Ligaments
   d) Nerve supply
   e) Applied aspects

SHORT ESSAYS **8 x 5 = 40 Marks**

3. . Describe the microscopic structure of liver with a diagram.
4. . Describe the attachments, nerve supply and action of Psoas major.
5. . Describe the boundaries and recesses of lesser sac.
6. Describe the interior, relations and blood supply of second part of Duodenum.
7. Describe the formation, termination, course and relations and tributaries of inferior vena cava.
8. Describe the development and derivatives of Hindgut.
9. Describe the supports of uterus and its mechanism.
10. Describe the clinical features and genetic basis of Klinefelter's syndrome.

SHORT ANSWERS **10 x 3 = 30 Marks**

11. Mention the arterial supply of suprarenal gland.
12. List the derivatives of paramesonephric ducts in females.
13. Name any three tributaries of great saphenous vein.
14. Mention the attachments and clinical relevance of Inguinal ligament.
15. Compare and contrast gross features of Jejunum and Ileum.
16. Mention the relations and termination of pelvic part of ureter.
17. Mention the parts of fallopian tube. Name the part where fertilization takes place.
18. List the muscles forming tendocalcaneus and its insertion.
19. Compare and contrast microscopic structure of prostate and epididymis.
20. Draw a neat labelled diagram of microscopic structure of gall bladder.

Multiple Choice Questions **10 x 1 = 10 Marks**

21 i) Neck shaft angle of femur is
   A. 100^0
   B. 110^0
   C. 125^0
   D. 170^0

21 ii) Longest muscle in the body is
   A. Biceps
   B. Triceps
   C. Sartorius
   D. Quadriceps

21 iii) Content of femoral canal is
- A. Femoral branch of genito femoral nerve
- B. Genital branch of genito femoral nerve
- C. Femoral vein
- D. Lymph node

21 iv) Which of the following is a prenatal diagnostic technique
- A. CT scan abdomen and pelvis
- B. X ray abdomen and Pelvis
- C. Chorionic villous sampling
- D. Hystero salpingography

21 v) Submucosal glands are found in the following part of GIT
- A. Jejunum
- B. Ileum
- C. Duodenum
- D. Colon

22 i) The deepest structure at the hilum of Kidney is
- A. Renal artery
- B. Pelvis of ureter
- C. Urethra
- D. Renal vein

22 ii) Which of the following is false ligament of Uterus
- A. Transverse cervical ligament
- B. Broad ligament
- C. Round ligament and Uterus
- D. Uterosacral ligament

22 iii) All of the following are features of large intestine **EXCEPT**
- A. Sacculation
- B. Taenia coli
- C. Peyer's patches
- D. Appendices epiploicae

22 iv) Which of the following structures is a content of deep perineal pouch
- A. Transverse perinei superficialis
- B. Transverse perinei profundus
- C. Ischiocavernosus
- D. Bulbospongiosus

22 v) Spleen develops in
- A. Dorsal mesentery
- B. Ventral mesentery
- C. Ventral mesogastrium
- D. Dorsal mesogastrium

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Rajiv Gandhi University of Health Sciences, Karnataka

MBBS Phase - I Degree Examination – 30-Jul-2022

Time: Three Hours **Max. Marks: 100 Marks**

ANATOMY – PAPER I (RS3)
Q.P. CODE: 1075

Your answers should be specific to the questions asked.
Draw neat labeled diagrams wherever necessary.

LONG ESSAYS **2 x 10 = 20 Marks**

1. Describe the cavernous sinus with its relations, tributaries and applied anatomy.
2. Describe course and branches of the radial nerve with structures supplied and applied anatomy.

SHORT ESSAYS **10 x 5 = 50 Marks**

3. Microscopic anatomy of mixed salivary gland
4. Development of face with anomalies
5. Tympanic membrane
6. Facial artery – origin, course, branches, termination
7. Biceps brachii
8. Basal ganglia
9. Thoracic duct
10. Arch of aorta
11. Vocal cord
12. Circle of Willis

SHORT ANSWERS **10 x 3 = 30 Marks**

13. Internal jugular vein.
14. Dangerous area of face
15. Enumerate six contents of superior mediastium.
16. Draw a neat labeled diagram of medial surface of left lung
17. Foramen ovale of interatrial septum of heart.
18. Floor of 4^{th} ventricle.
19. Movements of Shoulder joint.
20. Enumerate the types of epithelium with example
21. Major openings of the diaphragm
22. Umbilical cord

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Rajiv Gandhi University of Health Sciences, Karnataka

First Phase MBBS Degree Examination – 01-Aug-2022

Time: Three Hours **Max. Marks: 100 Marks**

ANATOMY – PAPER - II (RS3)
Q.P. CODE: 1076

Your answers should be specific to the questions asked.
Draw neat labeled diagrams wherever necessary.

LONG ESSAYS **2 x 10 = 20 Marks**

1. Describe the surfaces, relations, interior and development of urinary bladder
2. Describe the formation, ligaments, movements and the muscles acting at knee joint with applied anatomy.

SHORT ESSAYS **10 x 5 = 50 Marks**

3. Describe the appendix with applied anatomy.
4. Perineal membrane
5. Bare area of liver
6. Epiploic Foramen
7. Suprarenal gland – gross features and blood supply
8. Vas deferens - microstructure
9. Formation and fate of mesonephric duct
10. Inguinal lymph nodes – arrangement, drainage area and applied anatomy
11. Sciatic nerve – course and branches of distribution
12. Karyotyping

SHORT ANSWERS **10 x 3 = 30 Marks**

13. Ligaments of Hip joint – Name and attachments
14. Popliteus muscle – Action and nerve supply.
15. Inferior epigastric artery
16. Branches of internal iliac artery
17. Developmental anomalies of uterus
18. Interior of Anal canal
19. Components of medial longitudinal arch of foot.
20. Klinefelter’s syndrome.
21. Movements of ankle joint with muscles producing them
22. Enumerate the supports of uterus.

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Rajiv Gandhi University of Health Sciences, Karnataka

MBBS PHASE - I Degree Examination – 03-Aug-2022

Time: 3 Hours **Max. Marks: 100 Marks**

PHYSIOLOGY - I (RS2 & RS3)

QP Code: 1077

Your answers should be specific to the questions asked.
Draw neat labeled diagrams wherever necessary.

LONG ESSAY **2 X 10 = 20 Marks**

1. Enumerate various leads in ECG. Discuss normal recordings seen with lead II ECG.

2. Name the respiratory centres. Explain the neural regulation of respiration.

SHORT ESSAY **10 X 5 = 50 Marks**

3. Functions of plasma proteins
4. Cell mediated immunity
5. Components and functions of bile
6. Cholecystokinin – pancreozymin
7. Functions of saliva.
8. Describe the reabsorption of water in Loop of Henle and collecting duct.
9. Describe the process of 'osmosis' and explain its physiological importance.
10. Draw a labelled diagram of spirogram. Add a note on timed vital capacity
11. Describe the conducting system of heart.
12. Factors affecting cardiac output.

SHORT ANSWERS **10 X 3 = 30 Marks**

13. Three complications of mismatched blood transfusion
14. What is Pavlov's pouch? What is its importance?
15. List three special features of coronary circulation.
16. Define glomerular filtration rate. Mention its normal value.
17. Draw and label the ventricular muscle action potential.
18. Differentiate first and second heart sound.
19. Name two muscles of (a) Normal Inspiration (b) Forceful expiration.
20. Hypoxia.
21. Define anaemia. Mention its morphological types.
22. Purpura

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Rajiv Gandhi University of Health Sciences, Karnataka

MBBS Phase – I Degree Examination - 05-Aug-2022

Time: Three Hours **Max. Marks: 100 Marks**

PHYSIOLOGY – II (RS3)
Q.P. CODE: 1078

Your answers should be specific to the questions asked
Draw neat, labeled diagrams wherever necessary

LONG ESSAYS **2 x 10 = 20 Marks**

1. Describe the molecular mechanism of contraction of skeletal muscle. Add a note on rigor mortis.

2. Describe the synthesis, mechanism of action and functions of growth hormone. Add a note on gigantism.

SHORT ESSAYS **10 x 5 = 50 Marks**

3. Write the differences between REM and NREM sleep.
4. Define Action Potential. Describe the ionic basis of AP.
5. Functions of hypothalamus.
6. Milk ejection reflex
7. Types of deafness
8. Functions of estrogen.
9. Tests for ovulation.
10. Cushing's syndrome.
11. How does hypothalamus regulate body temperature?
12. Features of upper motor neuron lesion and lower motor neuron lesion

SHORT ANSWERS **10 x 3 = 30 Marks**

13. Functions of thalamus
14. Goiter
15. Aldosterone escape
16. Define Rheobase and Chronaxie
17. Abnormalities in colour vision
18. Tetany
19. Features of Diabetes Mellitus.
20. Human Chorionic Gonadotropin
21. Hypermetropia.
22. Jendrassik's maneuver

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Rajiv Gandhi University of Health Sciences, Karnataka

First Phase MBBS Degree Examination – 08-Aug-2022

Time: Three Hours **Max. Marks: 50 Marks**

BIOCHEMISTRY – PAPER I (RS3)

QP Code: 1079

Your answers should be specific to the questions asked

Draw neat labeled diagrams wherever necessary

(Note: Both QP Codes 1079 and 1080 are to be, answered within total duration of three hours)

Use separate answer books for section A and Section B

LONG ESSAYS **1 x 10 = 10 Marks**

1. Describe the β-oxidation of saturated fatty acids. Explain the role of co-enzymes and write the energetics of complete oxidation of Palmitic acid.

SHORT ESSAYS **5 x 5 = 25 Marks**

2. Write the role of kidney in maintaining acid base balance.
3. Describe the composition and importance of Glycosaminoglycans.
4. Urea cycle.
5. What is the normal cholesterol level? Name the products synthesis from cholesterol. Mention the pathological causes of hypercholesterolemia.
6. What is oxidative phosphorylation? Explain the Chemi-osmotic theory.

SHORT ANSWERS **5 x 3 = 15 Marks**

7. Explain the fluid mosaic model of membrane structure.
8. What is glycated hemoglobin? Mention its normal level. What is its significance?
9. What are coenzymes? Give examples. Write their importance.
10. What are uncouplers? Give examples.
11. Lactose intolerance.

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Rajiv Gandhi University of Health Sciences, Karnataka

MBBS Phase – I Degree Examination - 08-Aug-2022

Time: Three Hours **Max. Marks: 50 Marks**

BIOCHEMISTRY – PAPER II (RS3)

Q.P. CODE: 1080

Your answers should be specific to the questions asked.
Draw neat, labeled diagrams wherever necessary.

(Note: Both QP Codes 1079 and 1080 are to be, answered within total duration of three hours)
(Use separate Answer books for QP Code 1079 & 1080)

LONG ESSAYS **1 x 10 = 10 Marks**

1. Write in detail the sources requirement, Biochemical functions of and deficiency manifestations of Vitamin –D.

SHORT ESSAYS **5 x 5 = 25 Marks**

2. Glomerular function tests
3. Role of Lungs in acid base balance
4. Different types of Jaundice with their biochemical abnormalities and tests to evaluate them
5. BMR
6. Dietary fibers

SHORT ANSWERS **5 x 3 = 15 Marks**

7. Wilson’s disease
8. Anti diuretic hormone
9. Oncogene.
10. Sickle cell anaemia
11. Detoxification by conjugation

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