

# Rajiv Gandhi University of Health Sciences, Karnataka

**MBBS Phase – I (CBME) Degree Examination - 02-Dec-2024**

**Time: Three Hours**

**Max. Marks: 100**

## **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 the parts, fissures, relations and blood supply of Right Lung
2. A 34-year-old man is admitted to the hospital with severe headaches, dizziness and vomiting. On examination, there was a tumor in his tongue.
  - a) Describe the attachments and actions of the muscles and nerve supply of tongue
  - b) Add a note on its lymphatic drainage

### **SHORT ESSAYS**

**8 x 5 = 40 Marks**

3. Describe the origin, course, relations, branches and termination of brachial artery
4. A 30-year-old patient, who slept with the arm hanging by the side of a chair, came with history of inability to extend the hand at the wrist joint. On examination, there was wrist drop.
  - a) Name the nerve compressed in this condition.
  - b) Mention the site of compression of nerve?
  - c) Enumerate the branches of the nerve given here.
5. Describe boundaries and contents of Posterior mediastinum
6. Describe the formation, relations, tributaries and termination of Internal jugular vein
7. Draw a neat labelled diagram of spinal cord at mid thoracic level showing the ascending and descending tracts.
8. Explain the formation of Primitive streak and its fate
9. Compare and contrast microscopic features of serous and mucous salivary glands
10. Describe the anatomical division and blood supply of Cerebellum. Enumerate the deep cerebellar nuclei

### **SHORT ANSWERS**

**10 x 3 = 30 Marks**

11. Draw a neat labelled diagram of brachial plexus and its branches
12. List the axillary group of lymph nodes and their location
13. Define Bronchopulmonary segment? List the bronchopulmonary segments of left lung
14. Name the muscles of soft palate and mention their nerve supply
15. Draw a neat labelled diagram showing the features in the interior of larynx
16. Name the muscles, spaces and glands enclosed by general investing layer of deep cervical fascia
17. Explain the formation of circle of Willis
18. List the types of Epiphyses with examples
19. Explain the terms- Proximal, Coronal plane, Medial position
20. Mention derivatives of intermediate mesoderm

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## Multiple Choice Questions

**10 x 1 = 10 Marks**

- 21 i) Which of the following arteries is most likely at risk during venepuncture at the cubital fossa?
- Brachial artery
  - Ulnar artery
  - Radial artery
  - Common interosseous artery
- 21 ii) Restoration of diploidy of chromosomes occurs after \_\_\_\_\_
- Capacitation
  - Acrosomal reaction
  - Fertilization
  - Cleavage
- 21 iii) Basophilia of extracellular matrix of hyaline cartilage is due to \_\_\_\_\_
- Glycosaminoglycans
  - Collagen fibres
  - Chondrocytes
  - Water
- 21 iv) Which of the following sutures is an example for serrate type \_\_\_\_\_
- Lambdoid
  - Coronal
  - Metopic
  - Sagittal
- 21 v) The sternal angle of Louis gives attachments to which pair of costal cartilages \_\_\_\_\_
- 1<sup>st</sup>
  - 2<sup>nd</sup>
  - 3<sup>rd</sup>
  - 4<sup>th</sup>
- 22 i) Which of the following muscle is pierced by Parotid duct \_\_\_\_\_
- Temporalis
  - Masseter
  - Medial pterygoid
  - Buccinator
- 22 ii) Broca's motor speech area is located in \_\_\_\_\_
- Postcentral gyrus
  - Superior frontal gyrus
  - Middle frontal gyrus
  - Inferior frontal gyrus
- 22 iii) Which of the following modification of columnar epithelium helps to increase surface area and absorption \_\_\_\_\_
- Cilia
  - Microvilli
  - Flagella
  - Kinocilia
- 22 iv) Which of the following cranial nerve passes through internal acoustic meatus \_\_\_\_\_
- Glossopharyngeal
  - Vagus
  - Abducent
  - Facial
- 22 v) Which of the following chambers contribute to the base of the heart \_\_\_\_\_
- 2/3<sup>rd</sup> of Right atrium and 1/3<sup>rd</sup> of left atrium
  - 2/3<sup>rd</sup> of Left atrium and 1/3<sup>rd</sup> of right atrium
  - 2/3<sup>rd</sup> of Right ventricle and 1/3<sup>rd</sup> of left ventricle
  - 2/3<sup>rd</sup> of left ventricle and 1/3<sup>rd</sup> of Right ventricle

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**MBBS Phase – I (CBME) Degree Examination - 04-Dec-2024**

**Time: Three Hours**

**Max. Marks: 100**

## **ANATOMY – PAPER - II (RS-4)**

**Q.P. CODE: 1021**

**(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 40-year-old patient presents with numbness and tingling sensation and radiating pain along the back of the thigh, leg, and foot. Upon examination, it was found that the patient had a compression of a nerve in this region. Physician described this nerve as the thickest nerve in the body.
  - a) Name the nerve affected in this condition.
  - b) Explain its formation, course, relations, branches and termination.
2. Describe the parts, visceral and peritoneal relations and supports of Uterus

### **SHORT ESSAYS**

**8 x 5 = 40 Marks**

3. Describe the ligaments of Knee joint
4. A 40-year-old patient presents with persistent, gnawing pain in the upper abdomen that worsens after meals. Upon examination, it is found that the patient has tenderness on palpation in the epigastric region.
  - a) Name the organ present in this region.
  - b) Describe its blood supply and lymphatic drainage
5. Describe the intrinsic coverings, parts and blood supply of Testis
6. Explain the parts, relations and blood supply of Pancreas
7. Describe the boundaries and recesses of Lesser Sac
8. Classify structural chromosomal abnormalities with examples
9. Compare and contrast microscopic structure of Vas deferens and Fallopian tube
10. Describe Midgut rotation. Add a note on its abnormalities

### **SHORT ANSWERS**

**10 x 3 = 30 Marks**

11. List the arteries forming cruciate anastomosis
12. Explain the formation of posterior layer of Rectus sheath
13. Mention the boundaries of the bare area of liver
14. Draw a neat labelled diagram showing the features in the interior of Anal canal
15. Mention the boundaries of Space of Retzius
16. Define law of Segregation
17. List the cells lining the gastric glands and their functions
18. Name the layers of cerebellar cortex and cells present in each layer
19. List six derivatives of neural crest cells
20. Mention the fate of third and fourth aortic arches

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## Multiple Choice Questions

10 x 1 = 10 Marks

- 21 i) Which of the following structures passes through lesser sciatic foramen  
 A. External pudendal artery  
 B. Internal pudendal artery  
 C. Superior gluteal artery  
 D. Inferior gluteal artery
- 21 ii) Left gonadal vein drains into which of the following veins  
 A. Portal vein  
 B. Inferior vena cava  
 C. Left renal vein  
 D. Left suprarenal vein
- 21 iii) Ejaculatory duct opens into posterior wall of which of the following part of Male Urethra  
 A. Prostatic part  
 B. Membranous part  
 C. Bulbar part  
 D. Spongy part
- 21 iv) Paneth cells secreting lysozymes are found in  
 A. Gastric gland  
 B. Brunner's gland  
 C. Prostatic gland  
 D. Intestinal Gland
- 21 v) Which of the following is derivative of Truncus arteriosus \_\_\_\_\_  
 A. Ascending aorta  
 B. Arch of aorta  
 C. Descending thoracic aorta  
 D. Abdominal aorta
- 22 i) Which of the following syndrome is an example for Deletion \_\_\_\_\_  
 A. Turner's  
 B. Edwards  
 C. Klinefelter's  
 D. Cri du chat
- 22 ii) Peroneal artery is a branch of  
 A. Anterior tibial artery  
 B. Posterior tibial artery  
 C. Popliteal artery  
 D. Dorsalis pedis artery
- 22 iii) Taenia coli is the salient feature of \_\_\_\_\_  
 A. Ileum  
 B. jejunum  
 C. Colon  
 D. Appendix
- 22 iv) Perineal membrane separates which of the following regions  
 A. Superficial perineal pouch and ischiorectal fossa  
 B. Superficial and Deep perineal pouch  
 C. Deep perineal pouch and Ischiorectal fossa  
 D. Anal triangle and urogenital triangle
- 22 v) Podocytes line which part of the nephron \_\_\_\_\_  
 A. Bowman's capsule  
 B. Proximal collecting tubule  
 C. Loop of Henle  
 D. Distal collecting tubule

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**MBBS Phase – I (CBME) Degree Examination - 06-Dec-2024**

**Time: Three Hours**

**Max. Marks: 100**

## **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. Describe the different stages of erythropoiesis with the help of a neat labelled diagram. Explain the factors influencing erythropoiesis
2. Describe the renal handling of sodium. Add a note on tubulo-glomerular feedback **mechanism**.

### **SHORT ESSAYS**

**8 x 5 = 40 Marks**

3. Explain the Baroreceptor reflex mechanism in blood pressure regulation
4. Describe the acclimatization changes seen in natives of high altitude along with their physiological basis
5. Explain the active transport mechanisms across cell membrane
6. A 40 yr old man presented with severe abdominal pain in casualty. History revealed chronic intake of Nonsteroidal anti-inflammatory drugs (NSAIDs). On examination the duty Medical Officer confirmed that it was a case of gastric ulcer
  - a) Interpret the role played by NSAIDs in development of gastric ulcer
  - b) Justify the use of proton pump inhibitors in the treatment of gastric ulcers
7. Briefly explain the chemical regulation of respiration
8. Enumerate the special features of coronary circulation
9. Mention the composition of pancreatic juice. Describe the regulation of pancreatic secretion
10. Illustrate the innervation of urinary bladder and describe a normal cystometrogram

### **SHORT ANSWERS**

**10 x 3 = 30 Marks**

11. List the functions of white blood corpuscles
12. Explain the effect of sympathetic stimulation on pacemaker potential with the help of a diagram
13. What is oxygen debt?
14. Enumerate the steps occurring during the pharyngeal phase of deglutition
15. Depict the extrinsic pathway of coagulation in the form of a flow chart
16. Explain the causes of first and second heart sounds
17. Mention the type of hypoxia seen in cyanide poisoning and explain the basis of treatment
18. State Landsteiner's law
19. Define Mean arterial pressure and Pulse pressure
20. List the clinical features of hypovolemic shock

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## Multiple Choice Questions

**10 x 1 = 10 Marks**

- 21 i) Optimal pH for the action of salivary amylase is  
A. 4.2  
B. 6.7  
C. 7.4  
D. 8.2
- 21 ii) Progressive lengthening of the PR interval until a ventricular beat is dropped is known as  
A. Wenkebach phenomenon  
B. Stokes Adams syndrome  
C. Fascicular block  
D. **Third** degree heart block
- 21 iii) Renal plasma flow is measured by clearance of  
A. Inulin  
B. Creatinine  
C. P-aminohippuric acid  
D. Urea
- 21 iv) Maximum volume of gas that can be moved into and out of lungs in one min by voluntary effort is known as  
A. Maximum voluntary ventilation  
B. Pulmonary ventilation  
C. Respiratory minute volume  
D. Residual volume
- 21 v) The principal site of peripheral resistance is  
A. Capillaries  
B. Veins  
C. Large arteries  
D. Arterioles
- 22 i) Extensive liver damage results in reduction of the following plasma proteins **EXCEPT**  
A. Albumin  
B. Gamma globulin  
C. Beta globulin  
D. Fibrinogen
- 22 ii) The minimum volume of urine that must be excreted is called  
A. Obligatory urine volume  
B. Free water clearance  
C. Concentrating volume  
D. Diluting volume
- 22 iii) The type of movement seen characteristically in small intestine are all **EXCEPT**  
A. Pendular movements  
B. Mass movement  
C. Segmentation contractions  
D. Peristaltic rush
- 22 iv) Periodic breathing is seen in all the following conditions **EXCEPT**  
A. Cheyne stokes breathing  
B. Biots breathing  
C. Voluntary hyperventilation  
D. **Histotoxic hypoxia**
- 22 v) Individuals who express a terminal galactose on the H antigen are type  
A. A  
B. B  
C. AB  
D. O

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**MBBS Phase – I (CBME) Degree Examination - 09-Dec-2024**

**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. Describe the connections and functions of basal ganglia. Add a note on disorders of basal ganglia
2. Discuss in detail the synthesis and actions of thyroid hormones. Add a note on Grave's disease

### **SHORT ESSAYS**

**8 x 5 = 40 Marks**

3. Explain supra spinal control of stretch reflex
4. A 30 year old male who had a recent head injury complained of sudden increase in urine output. He also has immense thirst and nocturia. Blood and urine analysis showed FBS – 95mg/dl; serum osmolality – 305mOsm/kg of water, specific gravity of urine - <1.005; urine volume – 10L/day; urine glucose – nil
  - a) What is the probable diagnosis?
  - b) Name the hormone involved and its site of action
  - c) What is the physiological basis of increased urine output in this condition?
5. Discuss the actions of testosterone and its regulation
6. Draw a neat labelled diagram of pain pathway. Add a note on gate control theory of pain
7. Explain the mechanism of excitation – contraction coupling in skeletal muscle
8. Describe the contents and functions of middle ear
9. Explain postural reflexes integrated at the level of medulla oblongata
10. Describe the uterine changes during menstrual cycle. Add a note on hormonal basis for the same

### **SHORT ANSWERS**

**10 x 3 = 30 Marks**

11. Explain classical conditioning
12. What is aldosterone escape?
13. List the functions of placental hormones
14. Explain compound action potential
15. Explain synaptic inhibition
16. Define brain death. List the features of brain death
17. Draw a labelled diagram of taste pathway
18. Explain the different waves of EEG
19. Draw a neat labelled diagram of strength duration curve
20. What is  $VO_{2max}$ ?

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

- 21 i) The processing of short-term memory to long-term memory is done in:  
A. Prefrontal cortex  
B. Hippocampus  
C. Neocortex  
D. Amygdala
- 21 ii) Capacitation of sperms takes place in:  
A. Seminiferous tubules  
B. Epididymis  
C. Vas deferens  
D. Uterus
- 21 iii) Secretion of growth hormone increases with  
A. Increase in blood glucose level  
B. Increase in cortisol  
C. Increase in free fatty acid level  
D. Increased sleep
- 21 iv) Action of progesterone:  
A. Causes uterine contraction  
B. Inhibits LH secretion  
C. Decrease in body temperature  
D. Causes proliferative changes in uterus
- 21 v) Glucose increases plasma insulin by a process that involves:  
A. GLUT 1  
B. GLUT 2  
C. GLUT 3  
D. SGLT 1
- 22 i) In moderate exercise the respiratory rate is increased due to response of:  
A. Proprioception receptors in the joints  
B. Decreased  $p\text{CO}_2$  in arterial blood  
C. Increased  $p\text{O}_2$  in arterial blood  
D. J-receptor stimulation
- 22 ii) In muscle contraction all are true except:  
A. A band remains unchanged  
B. H zone disappears  
C. I band becomes wider  
D. Two Z lines come closer
- 22 iii) Transducin is required for:  
A. Smell  
B. Hearing  
C. Taste  
D. Vision
- 22 iv) The potential in the endolymph of inner ear  
A. End-plate potential  
B. Endo lymphatic potential  
C. Action potential  
D. Cochlear microphonic potential

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- 22 v) The body mass index to be considered as obesity if:
- A. More than  $30\text{kg/m}^2$
  - B. More than  $25\text{kg/m}^2$
  - C. Between  $20\text{-}24\text{kg/m}^2$
  - D. Less than  $20\text{kg/m}^2$

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## MBBS Phase – I (CBME) Degree Examination - 11-Dec-2024

**Time: Three Hours****Max. Marks: 100****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 12-year-old, with history of type 1 diabetes was brought to the emergency in a semi-comatose state with rapid breathing and fruity odour of breath. Investigations showed Random blood glucose of 450 mg/dL and positive test for the presence of ketone bodies. Arterial Blood Gas (ABG) analysis suggested features of metabolic acidosis.
  - a) Write the reference interval for Fasting and Random plasma glucose.
  - b) Mention the ketone bodies that answered the test in this case.
  - c) Explain the synthesis and utilization of ketone bodies.
2. Write the sources, coenzyme form, biochemical functions and deficiency manifestations of Thiamine.

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

3. An elderly male visited orthopedic department with history of chronic pain in the knee joint. After examination, he was prescribed medication containing some of the heteropolysaccharides and advised to follow up after two months.
  - a) What are heteropolysaccharides?
  - b) Name the heteropolysaccharides that are present in cartilage and synovial fluid and mention their importance.
  - c) Write the composition and biological importance of Heparin.
4. A mother and 12 year her old son was brought with history of fever and headache. All investigations including **Liver Function Test (LFT)** were within normal limits for both and symptomatic treatment was advised. However, the mother was worried about higher Alkaline phosphatase (ALP) observed in the LFT of her son compared to her. The physician explained the physiological reason for the raised enzyme in the child.
  - a) Mention the physiological reason for higher ALP in the above child.
  - b) Name two pathological conditions for increase in serum ALP.
  - c) Explain the role of isoenzymes in the diagnosis Myocardial infarction.
5. Write two biological functions and a disorder associated with the metabolism of
  - a) Iron
  - b) Copper.
6. Describe the electron transport chain.
7. Name the carbohydrate shunt pathways in RBC. Explain their biological importance.
8. Explain the regulation of blood glucose in starvation.
9. What is the normal pH of blood? Name the buffer systems that maintain blood pH. What is the effect of pH on enzyme activity?
10. Explain how calcium is regulated in the body. Mention its deficiency disorders.

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## SHORT ANSWERS

**10 x 3 = 30 Marks**

11. What are Dietary fibres? Why is it important to include them in the diet?
12. Muscle glycogen does not contribute to blood glucose - Justify. Mention two glycogen storage disorders
13. Name the essential fatty acids. Mention three biological importance poly unsaturated fatty acids
14. What is glycated haemoglobin? Mention its diagnostic applications
15. Write the function of the following lipases
  - a) Lipoprotein lipase
  - b) Hormone sensitive lipase
  - c) Phospholipase A2
16. Write two mechanisms of transport of large molecules across membrane. What is Hartnup's disease?
17. What is hyponatremia? Write two causes for the same.
18. What is anion Gap? Write the reference range for normal anion gap.
19. Write the features of competitive inhibition of enzymes.
20. Write three differences between Marasmus and Kwashiorkor.

## Multiple Choice Questions

**10 x 1 = 10 Marks**

- 21 i) The enzyme used in diagnosis of prostate cancer is
  - A. Acid phosphatase
  - B. Alkaline phosphatase
  - C. Lactate dehydrogenase
  - D. Alanine transaminase
- 21 ii) The cholesterol lowering effect of statins is by inhibiting
  - A. HMG CoA reductase
  - B. HMG CoA lyase
  - C. HMG CoA Synthase
  - D. Cholesterol esterase
- 21 iii) Which of the following is a glycoside?
  - A. Digitonin
  - B. Mannitol
  - C. Glucuronic acid
  - D. Glucosamine
- 21 iv) Which of the following is a derivative of cholesterol
  - A. Vitamin A
  - B. Vitamin E
  - C. Vitamin D
  - D. Vitamin K
- 21 v) Transport of water through Aquaporins is an example of
  - A. Simple diffusion
  - B. Facilitated diffusion
  - C. Primary active transport
  - D. Secondary active transport
- 22 i) Anemia can be caused by the deficiency of all **EXCEPT**

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- A. Pyridoxine
- B. Vitamin B12
- C. Vitamin C
- D. Riboflavin

22 ii) Which of the following contains iron?

- A. Ceruloplasmin
- B. Myoglobin
- C. Albumin
- D. Collagen

22 iii) The following organs can utilize ketone bodies during starvation **EXCEPT**

- A. Liver
- B. Brain
- C. Heart
- D. Skeletal muscle

22 iv) Which of the following amino acid in collagen is hydroxylated

- A. Glycine
- B. Tyrosine
- C. Threonine
- D. Lysine

22 v) Which of the following is a feature of respiratory acidosis?

- A. Decrease in Bicarbonate
- B. Increase in pCO<sub>2</sub>
- C. Decreased hydrogen ion concentration
- D. Increase in rate and depth of respiration

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## MBBS Phase – I (CBME) Degree Examination - 13-Dec-2024

Time: Three Hours

Max. Marks: 100 Marks

**BIOCHEMISTRY – PAPER II (RS-4)****QP 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**

- A 25-year-old female presented with mild anemia, jaundice and splenomegaly. She had previous history of frequent blood transfusion. Laboratory investigations shows spherocytes (70%), increased reticulocyte count and findings of hemolytic jaundice.
  - Write the serum and urinary findings in a case of hemolytic jaundice.
  - Enumerate the steps in the formation and fate of bilirubin.
  - List two more conditions leading to hemolytic jaundice
- Enumerate the steps of transcription in prokaryotes. Write the post-transcriptional modifications.

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

- An Eight month old child was brought to hospital for frequent episodes of vomiting and failure to thrive. On examination, the child was drowsy and had hepatomegaly. Laboratory investigations revealed increased serum ammonia levels.
  - Mention the transport form of ammonia.
  - Name the urea cycle disorders and write their enzyme defect.
- The following is the laboratory investigations in a patient who presented with oedema.

| Parameter | Serum Total Protein | Serum Albumin | A/G Ratio |
|-----------|---------------------|---------------|-----------|
| Results   | 5.0 g/dl            | 2.3 g/dl      | 0.85:1    |

- Mention normal A/G ratio (Albumin/Globulin ratio).
  - Write two conditions in which A/G ratio is altered.
  - Write two functions of albumin.
- Enumerate the steps in the formation of uric acid.
  - Explain the structure of immunoglobulin with a neat labelled diagram.
  - Write the nutritional classification of amino acids with examples.
  - Write the steps of polymerase chain reaction (PCR). Mention two applications of PCR.
  - Write five examples of Transmethylation reactions.
  - What are oncogenes and proto-oncogenes? Explain the mechanism of activation of oncogene.

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**SHORT ANSWERS****10x3=30 Marks**

11. Write three features of genetic code.
12. What is gene therapy? Mention two conditions where gene therapy is applied.
13. Name the vectors used in Recombinant DNA technology and write their importance.
14. Write the mechanism of action of steroid hormones.
15. Name three pre-analytical variables affecting laboratory results.
16. Write the structure and function of t-RNA.
17. Name three antioxidant enzymes and write their importance.
18. What is clearance test? Why creatinine clearance is preferred over urea clearance test?
19. Write three examples for detoxification reaction by conjugation mechanism.
20. Mention any three biologically important nucleotides and write their importance.

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

- 21 i) Which of the following is a non-protein amino acid?
  - A. Proline
  - B. Histidine
  - C. Ornithine
  - D. Asparagine
- 21 ii) Transamination of oxaloacetate results in the formation of
  - A. Aspartic acid
  - B. Valine
  - C. Glycine
  - D. Serine
- 21 iii) Persons with sickle cell trait shows an increased resistance to
  - A. Typhoid
  - B. Diabetes
  - C. Malaria
  - D. Cancer
- 21 iv) Which one of the following compounds is synthesized from tryptophan?
  - A. Melanin
  - B. Serotonin
  - C. Dopamine
  - D. Epinephrine
- 21 v) Salvage pathway for purines involves the enzyme
  - A. PRPP amidotransferase
  - B. PRPP synthase
  - C. Xanthine oxidase
  - D. HGPRTase

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- 22 i) The function of restriction endonuclease enzyme is
- A. Joining DNA to cloning vector
  - B. Cleaving DNA at specific sequence
  - C. Digesting DNA from its ends
  - D. Aggregating DNA at centromere
- 22 ii) Second messenger which mobilises intracellular calcium is
- A. Phosphatidic acid
  - B. Diacylglycerol
  - C. cyclic GMP
  - D. Inositol triphosphate
- 22 iii) Biological target for attack by free radicals are all of the following **EXCEPT**
- A. Polyunsaturated fatty acids
  - B. Glucose
  - C. DNA
  - D. Protein
- 22 iv) Retinoblastoma (RB) gene is a
- A. Proto-oncogene
  - B. Oncogene
  - C. Carcinogen
  - D. Oncosuppressor gene
- 22 v) Fasting blood sample is preferred for analysis of
- A. Lipid profile
  - B. Liver function test
  - C. Renal function test
  - D. Serum electrolytes

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**MBBS Phase – I Degree Examination - 07-Apr-2025**

**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 sulci and gyri on superolateral surface of brain. Add a note on the functional areas on the superolateral surface of brain.
2. Describe the mammary gland and add a note on its applied anatomy.

### **SHORT ESSAYS**

**10 x 5 = 50 Marks**

3. Right atrium of heart
4. Microscopic structure of large artery
5. Blood supply of scalp.
6. Notochord.
7. Sub-occipital triangle
8. Posterior mediastinum
9. Intrinsic muscles of larynx
10. Intermuscular spaces around scapula
11. Flexor retinaculum of hand
12. Ansa cervicalis

### **SHORT ANSWERS**

**10 x 3 = 30 Marks**

13. Fertilization
14. Features in the interior of nasopharynx.
15. Erb's paralysis
16. Major openings of diaphragm
17. Wrist drop.
18. External jugular vein
19. Blood supply of thyroid gland
20. Draw a neat labelled diagram of histology of serous salivary gland
21. Pericardial sinuses.
22. Coracoid process of scapula

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# Rajiv Gandhi University of Health Sciences, Karnataka

**MBBS Phase – I Degree Examination – 09-Apr-2025**

**Time: Three Hours**

**Max. Marks: 100**

## **ANATOMY – PAPER - II (RS-3)**

**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 articulating surfaces, relations and movements of hip joint. Add a note on its applied anatomy
2. Describe the parts, relations, blood supply and development of Pancreas

### **SHORT ESSAYS**

**10 x 5 = 50 Marks**

3. Popliteal fossa
4. Microscopic structure of Kidney
5. Lesser sac
6. Sex chromosomes
7. Second part of duodenum
8. Inferior vena cava
9. Extra hepatic Biliary apparatus
10. Development of uterus
11. Ischiorectal fossa
12. Fallopian tube

### **SHORT ANSWERS**

**10 x 3 = 30 Marks**

13. Pouch of Douglas
14. Dorsalis pedis artery
15. Blood supply of suprarenal gland
16. Down's syndrome
17. Histology of vas deferens
18. Bare area of liver
19. Inguinal ligament
20. Microscopic structure of appendix
21. Derivatives of Mesonephric duct
22. Deep peroneal nerve

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# Rajiv Gandhi University of Health Sciences, Karnataka

**MBBS Phase – I Degree Examination - 11-Apr-2025**

**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 composition, functions and regulation of gastric juice secretion.
2. Define cardiac cycle. Describe the mechanical events of cardiac cycle.

### **SHORT ESSAYS**

**10 x 5 = 50 Marks**

3. Cardiovascular changes during muscular exercise
4. Describe the phases of deglutition.
5. Rh incompatibility
6. Classify Hypoxia. Explain any two of them.
7. Describe the conducting system of the heart.
8. Micturition reflex
9. Immunoglobulins
10. Artificial respiration
11. Intercellular communication
12. Intrinsic mechanism of blood coagulation

### **SHORT ANSWERS**

**10 x 3 = 30 Marks**

13. Three special features of coronary circulation
14. Herring - Breuer reflexes
15. Non excretory functions of kidneys
16. Define GFR and give its normal value and name factors affecting it.
17. Name two anticoagulants. Give their mechanism of action.
18. Define Tidal volume and residual volume. Give their normal values.
19. List the functions of bile.
20. Laboratory classification of Anaemia
21. Cyanosis
22. Define transport maximum for glucose. Give its normal value.

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# Rajiv Gandhi University of Health Sciences, Karnataka

**MBBS Phase – I Degree Examination - 15-Apr-2025**

**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 origin, course, termination and function of corticospinal tract. List two signs of hemiplegia and basis for it.
2. What is normal serum calcium level? Describe the hormonal regulation of serum calcium level. What are the clinical features of tetany?

### **SHORT ESSAYS**

**10 x 5 = 50 Marks**

3. Excitation contraction coupling in skeletal muscle fiber
4. Cushing's Syndrome
5. Referred pain.
6. List the functions of prefrontal lobe
7. Organ of Corti
8. Explain three properties of synapse.
9. Explain the refractive errors and their corrections
10. Wallerian degeneration
11. Describe the phases of menstrual cycle.
12. Functions of estrogen.

### **SHORT ANSWERS**

**10 x 3 = 30 Marks**

13. Describe the nerve action potential.
14. Mention any three functions of thyroxine.
15. What is saltatory conduction? What is its importance?
16. Write any three functions of testosterone.
17. What are Somatomedins? What are its actions?
18. Functions of skin
19. List six features of cerebellar disease.
20. Primary taste sensations.
21. Accommodation reflex
22. What is impedance matching?

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# Rajiv Gandhi University of Health Sciences, Karnataka

MBBS Phase – I Degree Examination - 17-Apr-2025

Time: Three Hours

Max. Marks: 50 Marks

## BIOCHEMISTRY – PAPER I (RS3)

**Q.P. 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. Define Glycogenesis and Glycogenolysis. Write the reactions of Glycogenesis and Glycogenolysis in the Liver.

### SHORT ESSAYS

**5 x 5 = 25 Marks**

2. Formation and utilization of ketone bodies
3. What are Isoenzymes? Briefly explain Isoenzymes with examples.
4. Describe the secondary structures of Proteins with examples.
5. How is Urea synthesized in the body?
6. What is Oxidative Phosphorylation? Explain Chemiosmotic theory.

### SHORT ANSWERS

**5 x 3 = 15 Marks**

7. Active transport.
8. **Write any three tumour markers along with its diagnostic significance.**
9. **What are free radicals? Name any four antioxidants in the body.**
10. Lactose intolerance.
11. Essential fatty acids.

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# Rajiv Gandhi University of Health Sciences, Karnataka

## First Phase MBBS Degree Examination – 17-Apr-2025

**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. Describe the source, RDA, biochemical functions, synthesis and deficiency manifestation of Vitamin D.

#### **SHORT ESSAYS**

**5 x 5 = 25 Marks**

2. Name the plasma buffers and role of buffers in maintaining the acid base balance.
3. Formation and fate of bilirubin.
4. Define Basal Metabolic Rate. Explain the factors affecting BMR.
5. **What is clearance test? Which is the ideal substance used for determination of Glomerular Filtration Rate and why? Explain.**
6. Dietary fibre.

#### **SHORT ANSWERS**

**5 x 3 = 15 Marks**

7. Applications of Polymerase chain reaction.
8. Name four synthetic analogues of nucleotides. Mention their therapeutic importance.
9. Name the inhibitors of replication and their clinical importance.
10. Name the selenium containing enzyme. What is its clinical importance?
11. What you mean by abnormal hemoglobins. Explain briefly. Give examples.

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