# Rajiv Gandhi University of Health Sciences, Karnataka

First Phase MBBS Degree Examination – June 2014 12

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

## BIOCHEMISTRY (RS2 & RS3)

## QP Code: 1080 – Paper II (Max.Marks:50)

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

**Use separate answer books for section A and Section B**

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

1. Define translation. Describe the steps of translation. Name four inhibitors and their action

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

2. How is bilirubin formed and excreted? Name the abnormalities associated with bilirubin metabolism.
3. Describe the liver function tests based on synthetic and excretory role
4. Write the Henderson-Hasselbach equation and its significance in bicarbonate buffer system.
5. Discuss the biochemical changes during starvation
6. What are nucleotides? What are the sources of C and N atoms of purine nucleotide? Mention the metabolic disorders associated with purine metabolism

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

7. Monoclonal antibodies.
8. PCR and its application.
9. Southern Blot techniques.
10. "Gilberts syndrome"
11. Acute intermittent porphyria.

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# Rajiv Gandhi University of Health Sciences, Karnataka

First Phase MBBS Degree Examination – June 2014 //

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

## BIOCHEMISTRY (RS2 & RS3)

## QP Code: 1079 – Paper I (Max.Marks:50)

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

**Use separate answer books for section A and Section B**

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

1. Classify amino acid based on their structure giving examples.

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

2. What is an allosteric enzyme? Describe with two examples.
3. Discuss the Embden-Mayerhof pathway that occurs in RBC. Add a note on its energetics.
4. What are lipoproteins? Name the lipoproteins and give their functions.
5. What is biotransformation? Discuss the different phases of biotransformation with an example.
6. Describe the biochemical changes that occur during starvation.

Or

Components of electron transport chain

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

7. Pyruvate dehydrogenase complex
8. GABA, PUFA and SAM and their importance
9. Importance of iodine
10. Figlu
11. Epimerism and Anomerism.

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# Rajiv Gandhi University of Health Sciences

M.B.B.S. PHASE - I Degree Examination – June 2014

Time: 3 Hrs. [Max. Marks: 100]

**PHYSIOLOGY - II (RS2 & RS3)**

## QP Code: 1078

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

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

1. Describe the pain pathway. Write important features of fast and slow pain.
2. Describe the molecular basis of skeletal muscle contraction. Add a note on isometric contraction.

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

3. Cushing's syndrome – clinical features and their physiological basis
4. Hypothyroidism – clinical features and their physiological basis
5. Action of parathormone
6. Thalamic syndrome
7. Regulation of water balance by hypothalamus
8. Enumerate effects of sympathetic stimulation.
9. Explain endometrial changes during menstrual cycle.
10. Describe the actions of testosterone in fetal and puberty stage.
11. Refractive errors and their correction
12. Mechanisms activated in body with exposure to heat. What is heat stroke?

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

13. EEG changes in Non REM sleep
14. Write steps showing fate of acetyl choline at neuromuscular junction.
15. Important features of EPSP
16. Functions and clinical significance of hCG
17. Differences between diabetes mellitus and diabetes insipidus
18. Write three actions of glucagon.
19. Actions of progesterone on fallopian tube, myometrium and mammary glands
20. Explain 3 mechanisms involved in dark adaptation.
21. Explain in brief impedance matching.
22. Draw olfactory pathway.

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# Rajiv Gandhi University of Health Sciences, Karnataka

MBBS Phase – I Degree Examination - June 2014

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

## Physiology – I (RS2 & 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 systolic and diastolic blood pressure and give their normal values. Explain the regulation of blood pressure by baroreceptor reflex.
2. Give the stages of Erythropoiesis. Briefly describe the factors affecting Erythropoiesis.

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

3. Secondary active transport
4. Temporary hemostasis
5. Ionic basis of the pacemaker potential
6. Pulmonary surfactant
7. Carbon dioxide transport in blood
8. Medullary respiratory centres
9. Mechanism of HCl secretion from stomach
10. What are the phases of Deglutition? Describe the 2nd phase.
11. Regulation of renal blood flow
12. Role of kidney tubule in counter current mechanism

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

13. List the functions of platelets.
14. What is Windkessel effect?
15. List the functions of lymphatic circulation.
16. Define Dyspnic Index. Give its normal value
17. Clinical importance of FEV1
18. What is Cheyne-Stokes respiration? Name one condition where it is seen.
19. List the functions of bile.
20. What is Hirschsprung disease?
21. List the functions of Juxta glomerular apparatus.
22. What is spastic neurogenic bladder?

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# Rajiv Gandhi University of Health Sciences, Karnataka

**MBBS Phase – I Degree Examination** - June 2014

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

## Anatomy – Paper II (RS2 & 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 venous drainage of Lower Limb with its applied importance.
2. Describe the gross Anatomy of Stomach with its development.

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

3. Describe the Microscopic Anatomy of Ovary.
4. Greater Omentum
5. Superior Mesenteric Artery and its branches
6. Ureter
7. Development of Uterus
8. Pudendal Canal
9. Pelvic Diaphragm
10. Cutaneous Nerve supply of Front of Thigh
11. Down's syndrome
12. Porto Caval Anastomosis

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

13. Formation and fate of Mesonephric Duct
14. Pyramidalis
15. Course and branches of Uterine Artery
16. Uterine Axis
17. Inferior Gluteal Nerve
18. Draw a neat labeled diagram of Microscopic Anatomy of Prostate.
19. Sacral Canal
20. Ligament of Treitz
21. Anomalies of development of Testis
22. Adductor Longus

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# Rajiv Gandhi University of Health Sciences, Karnataka

**MBBS Phase – I Degree Examination** - June 2014

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

## Anatomy – Paper I (Revised Scheme II)

## 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 Supero-lateral Surface of Cerebral Hemisphere under following heads:
   a) Lobes
   b) Important Sulci and Gyri
   c) Functional Areas
   d) Blood supply
2. Describe the development of Lung. Add a note on its Congenital Anomalies.

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

3. Axillary Nerve
4. Fertilization
5. 1st Pharyngeal Arch
6. Describe the Microscopic structure of Cerebrum.
7. Describe the Microscopic structure of Trachea.
8. Lateral wall of Nasal Cavity
9. Histology and development of Hypophysis Cerebri
10. Erb's point
11. Superior Mediastinum
12. Functions and divisions of Cerebellum

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

13. Epiphysis
14. Boundaries and contents of Carotid Triangle
15. Styloid apparatus
16. Division and derivatives of Intra-embryonic Mesoderm
17. Shunts in Fetal circulation and their Fate after Birth
18. Draw a neat labelled diagram of Microscopic Anatomy of Compact Bone.
19. Root value and muscles supplied by the Radial Nerve
20. Nucleus Ambiguus
21. Classify Glands according to Mode of Secretion with one example each.
22. Collateral Circulation

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# Rajiv Gandhi University of Health Sciences, Karnataka

## MBBS Phase – I Degree Examination - Dec-2014

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

## Biochemistry – Paper II (RS2 & 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. Define Replication. Describe in detail the process of replication in Eukaryotes.

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

2. Describe the catabolism of Heme in the body adding a note on clinical significance.
3. List the requirements, steps of Polymerase Chain reaction.
4. What is meant by Dietary Fiber? List the role of Dietary Fibers.
5. What are the causes of Respiratory Acidosis? List the primary abnormalities of Respiratory Acidosis.
6. Name and explain the functions of plasma proteins with clinical significance.

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

7. Discuss the features of Lesch Nyhan syndrome.
8. Draw a neat labelled diagram of tRNA.
9. Tumour markers
10. What is meant by Renal Clearance? How is Creatinine Clearance calculated?
11. What are Restriction Enzymes? List three features of Restriction Enzymes.

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# Rajiv Gandhi University of Health Sciences, Karnataka

## MBBS Phase – I Degree Examination - Dec-2014

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

## Biochemistry – Paper I (RS2 & 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. Describe the mechanisms of Blood Glucose regulation. What are the causes of Hyperglycaemia and Hypoglycaemia?

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

2. What are the reactions of β-oxidation of Palmitic acid? Give its Energetics.
3. What is the difference between Oxidative and Substrate level Phosphorylation? Give two examples of Substrate level Phosphorylation.
4. Name three enzymes commonly estimated in Myocardial Infarction. Give its importance and limitations.
5. Define Fatty Liver. What are the causes of Fatty Liver? Name the Lipotropic factors.
6. Describe the Digestion and Absorption of Proteins.

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

7. Mechanism of action of Steroid Hormones
8. Alkaptonuria
9. Eicosanoids – functions
10. Detoxification reaction – Phase I
11. Tertiary and quaternary structure of Proteins

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# Rajiv Gandhi University of Health Sciences, Karnataka

MBBS Phase – I Degree Examination - DEC-2014

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

## Physiology – Paper II (RS2 & 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 physiological actions of growth hormone. Add a note on gigantism.
2. Describe the input, output, internal connections and functions of cerebellum.

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

3. Physiological actions of vitamin D
4. Regulation of insulin secretion
5. Intrauterine contraceptive devices
6. Secondary sex characteristics in male
7. Somatosensory area I
8. Decerebrate rigidity
9. Aqueous humor
10. Sensorineural deafness
11. Saltatory conduction
12. Sarcotubular system

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

13. List the functions of corpus luteum.
14. List the clinical features below the level of lesion in Brown-Sequard syndrome.
15. List four features of upper motor neuron paralysis.
16. Primary taste sensations
17. Name the cortical olfactory areas.
18. Define Near point. Give its clinical significance.
19. Changes during slow wave sleep
20. Recruitment of motor unit
21. What is denervation hypersensitivity?
22. List the functions of skin.

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# Rajiv Gandhi University of Health Sciences, Karnataka

MBBS Phase – I Degree Examination - DEC-2014

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

## Physiology – I (RS2 & 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 blood pressure. Describe its regulation in detail.
2. Describe in detail how urine is concentrated in the kidney.

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

3. Oxygen dissociation curve
4. 'Poiseuille Hagen Law' and its application
5. Vital capacity
6. What are the phases of Deglutition? Describe the 2nd phase.
7. Describe the regulation of Salivary secretion.
8. Functions of large intestine
9. Intrinsic pathway of coagulation
10. Functions of Reticulo – endothelial system
11. Describe Periodic breathing.
12. Classify Plasma proteins. Give their functions.

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

13. What is Triple response?
14. List the differences between 1st and 2nd Heart sounds.
15. What is Micelle formation? What are its functions?
16. Name two Anticoagulants. Give their mechanism of action.
17. List the functions of 'B' lymphocytes.
18. What is the normal value of Inulin clearance? What is its significance?
19. What is Dysbarism?
20. Simple diffusion
21. Functions of Surfactant
22. Intercalated disc and its significance

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# Rajiv Gandhi University of Health Sciences, Karnataka

## MBBS Phase – I Degree Examination - DEC-2014

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

## Anatomy – Paper II (RS2 & 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 coverings, microstructure (diagrammatic) and development of Testis.
2. Describe the gross Anatomy of Liver with its applied aspects.

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

3. Microscopic Anatomy of Kidney
4. Mesentry
5. Blood supply of stomach
6. Formation of rectus sheath
7. Development of Suprarenal Gland
8. Locking and unlocking of Knee Joint
9. Piriformis
10. Cutaneous Nerve supply of Dorsum of Foot
11. Amniocentesis
12. Prostatic Lobes

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

13. Formation and Fate of Vesicourethral Canal
14. Contents of inguinal canal
15. Enumerate the branches of Femoral Artery.
16. Superficial Peroneal Nerve
17. Urogenital Diaphragm
18. Draw a neat labelled diagram of microscopic Anatomy of pancreas.
19. Greater Sciatic Notch
20. Suspensory Muscle of Duodenum
21. Derivatives of midgut
22. Rectus Femoris

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# Rajiv Gandhi University of Health Sciences, Karnataka

## MBBS Phase – I Degree Examination - Dec 2014

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

## Anatomy – Paper I (Revised Scheme II)

## 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 Intrinsic Muscles of Larynx with applied aspects.
2. Describe the Gross Anatomy of Mammary Gland with its development.

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

3. Blood supply of Scalp
4. Microscopic structure of Lung
5. Inferior Cerebellar Peduncle
6. Draw a neat labeled diagram of Midbrain at the Level of Inferior Colliculus.
7. Bronchopulmonary segments
8. Azygos Vein
9. Notochord
10. Pectoralis Major
11. Sinuses of Pericardium
12. Trapezius Muscle

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

13. Maxillary Sinus
14. Moderator Band
15. Axillary Nerve in relation to Surgical Neck of Humerus
16. Posterior Interosseous Artery
17. Dermatome
18. Secretomotor Fibres of Submandibular Ganglion
19. Pterion
20. External Jugular Vein
21. Septum Spurium
22. Draw a neat labeled diagram of Histology of Lymph Node.

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