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Rajiv Gandhi University of Health Sciences, Karnataka

I Year B.Sc. (Physiotherapy) Degree Examination – April 2014

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

ANATOMY
(OS, RS & RS2)

Q.P. CODE: 2151

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

LONG ESSAYS (Answer any Four) **4 x 10 = 40 Marks**

1. Describe the origin, course, relations, branches and applied anatomy of sciatic nerve
2. Define a Brochopulmonary segment. Describe the relations and blood supply of right lung
3. Describe the temperomandibular joint under following headings (a) Bones forming the joint (b) Ligaments (c) Muscles and movement of the joint (d) Applied anatomy
4. Name the muscles attached to medial border of scapula, and add a note on serratus anterior
5. Describe the position, relations, blood supply and nerve supply of parotid salivary gland

SHORT ESSAYS (Answer any Eight) **8 x 5 = 40 Marks**

6. Urinary bladder
7. Root of the lung
8. Oculo motor nerve
9. Evertors of ankle joint
10. Pericardium
11. Trapezius
12. Stomach – external features
13. Histological features of hyaline cartilage
14. Third ventricle
15. Distribution of ulnar nerve in hand

SHORT ANSWERS **10 x 2 = 20 Marks**

16. Structures piercing clavi pectoral fascia
17. Name the ligaments of hip joint
18. Name the structures openings into right atrium of heart
19. Name the parts of extra hepatic biliary apparatus
20. Name any four derivatives of mesoderm
21. Give the formation and termination of external jugular vein
22. Name the pleural recess
23. Name the first 4 cranial nerves
24. Name the interossei of foot and mention their nerve supply
25. Parts of pancreas

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Rajiv Gandhi University of Health Sciences, Karnataka

I Year B.P.T Degree Examination – April 2014

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

ANATOMY (RS-3 & RS-4)

Q.P. CODE: 2701

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

LONG ESSAYS (Answer any Two) **2 x 10 = 20 Marks**

1. Name the Cranial nerves in order. Explain facial Nerve in Detail
2. Describe the external features of Heart. Explain Right atrium in detail
3. Name the thenar and hypothenar muscles. Describe any one Thenar and hypothenar Muscle

SHORT ESSAYS (Answer any Twelve) **12 x 5 = 60 Marks**

4. External carotid artery
5. Constitution of Larynx
6. Lateral Ventricle
7. Openings in the Diaphragm
8. Femoral Artery
9. Oesophagus
10. Inguinal canal
11. Uterus
12. External features of liver
13. Axillary nerve
14. Upper end of femur
15. Evertors of the foot
16. Midbrain
17. External Features of right lung

SHORT ANSWERS **10 x 2 = 20 Marks**

18. Parts of Gall bladder
19. Name the recess of pleura
20. Name the attachments on greater tuberosity
21. Name the branches of medial cord of brachial plexus
22. Name the ligaments of elbow joint
23. Name the tarsal bones
24. Name the hamstring muscles
25. Parts of Corpus callosum
26. Name the nucleus of the cerebellum
27. Histology of Hyaline Cartilage (only diagram)

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Rajiv Gandhi University of Health Sciences, Karnataka

I Year B.P.T. Degree Examination – April 2014

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

HUMAN PHYSIOLOGY (RS-3 & RS-4)

Q.P. CODE: 2702

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

LONG ESSAYS (Answer any Two) **2 x 10 = 20 Marks**

1. Define arterial blood pressure. Briefly explain the regulation of arterial blood pressure.
2. Draw the structure of a triad and describe its role in muscle contraction.
3. Define synapse. Discuss the properties of synapse.

SHORT ESSAYS (Answer any Twelve) **12 x 5 = 60 Marks**

4. Tabulate any three differences between skeletal muscle, cardiac muscle and smooth muscle
5. Describe the Intrinsic mechanism of coagulation
6. Define cardiac cycle. Explain the phases of cardiac cycle taking place in the ventricles
7. Explain stretch reflex with the help of a diagram
8. Discuss the different phases of menstrual cycle with their hormonal basis
9. Functions of hypothalamus
10. Briefly explain the oxygen dissociation curve
11. Trace the pathway for fine touch
12. Describe the countercurrent mechanism taking place in the renal medullary insterstitium
13. Enumerate the functions of plasma proteins
14. Phases of gastric juice secretion
15. Define anemia. Discuss the clinical classification of Anemia
16. Action of parathyroid hormone
17. Functions of middle ear

SHORT ANSWERS **10 x 2 = 20 Marks**

18. State Starling's law of force of contraction
19. List the functions of Juxta-glomerular apparatus
20. Define Osmosis
21. Name the neuroglial cells. What is function of astrocytes
22. Enumerate the functions of angiotensin II
23. Intrapulmonary pressure and its normal value
24. Name the contractile proteins
25. Define dead space. Mention the types of dead space
26. Draw an label the normal ECG waves
27. Define muscle tone.



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Rajiv Gandhi University of Health Sciences, Karnataka

I Year B.P.T. Degree Examination – April 2014

Time: Three Hours **Max. Marks: 80 Marks**

BIO-CHEMISTRY (RS-3 & RS-4)

Q.P. CODE: 2703

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

LONG ESSAYS (Answer any Two) **2 x 10 = 20 Marks**

1. What is normal pH of the blood? Describe different mechanisms in the maintenance of acid base balance.
2. What is glycolysis? Describe its reactions and a note on its energetic.
3. Describe the sources, requirement, metabolic functions and deficiency manifestations of vitamin D.

SHORT ESSAYS (Answer any Eight) **8 x 5 = 40 Marks**

4. Urea cycle
5. Functions of calcium
6. Respiratory acidosis
7. Fatty liver
8. Biochemical function and absorption of Iron
9. Dietary fibres
10. Specific dynamic action
11. Enzymes of diagnostic importance
12. Renal regulation of acid-base balance
13. Phospholipids

SHORT ANSWERS **10 x 2 = 20 Marks**

14. Name the co-enzymes of a) Niacin b) Folic acid
15. Cyclic –AMP
16. Transamination
17. Nucleotides of biological importance
18. Essential fatty acids
19. Phenyl Ketonuria
20. Proenzymes
21. Name the vitamin deficient in a) Beri-Beri b) Pellagra
22. Disaccharides
23. Ribosomes

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Rajiv Gandhi University of Health Sciences, Karnataka

I Year B.P.T. Degree Examination – April-2014

Time: Three Hours **Max. Marks: 80 Marks**

BIOMECHANICS (RS-3)

Q.P. CODE: 2704

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

LONG ESSAYS (Answer any Two) **2 x 10 = 20 Marks**

1. What is difference between osteokinematics and arthrokinematics? Describe the arthrokinematics and osteokinematics at the shoulder joint
2. Explain various types of power and precision grips with muscle action and joint position
3. What are the temporal and spatial parameters of gait? Describe the kinematics and kinetics of stance phase of gait cycle

SHORT ESSAYS (Answer any Eight) **8 x 5 = 40 Marks**

4. Explain the Newton's laws of motion with examples
5. What is mechanical advantage? Explain mechanical advantage in relation to pulleys
6. What are the factors affecting muscle function? Add a note on shunt and spurt muscles
7. Define lever, discuss its application in physiotherapy
8. Define passive insufficiency. Explain in detail with appropriate examples
9. Write a note on open and closed kinematic chain exercises with appropriate examples
10. Define posture, discuss normal and abnormal postures
11. Explain the mechanics of rib cage movement during inspiration
12. Explain the gleno-humeral rhythm
13. Describe the various walking aids used in rehabilitation

SHORT ANSWERS **10 x 2 = 20 Marks**

14. Pes planus
15. Define torque
16. Ground reaction force
17. Carrying angle
18. Angle of pull
19. Define eleasticity
20. Q-angle
21. Isometric exercises
22. Hooke's law
23. Scoliosis

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Rajiv Gandhi University of Health Sciences, Karnataka

I Year B.P.T. Degree Examination – April 2014

Time: 3 Hours **Max. Marks: 40 Marks**

General Psychology

Q.P. Code : 2705

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

(Note : Both QP Codes 2705 and 2706 are to be answered within total duration of 3 hours)

LONG ESSAYS (Answer any One) **1 x 10 = 10 Marks**

1. Define personality? Explain various methods of Assessing personality
2. What is instrumental Learning? Explain skinner's operant learning

SHORT ESSAYS (Answer any Four) **4 x 5 = 20 Marks**

3. Factors influencing perception
4. Personality Traits
5. Adolescence psychology
6. Psychological changes of emotion
7. Qualities of Leadership

SHORT ANSWERS **5 x 2 = 10Marks**

8. Psychological needs
9. Projection
10. Introspection
11. Industrial psychology
12. Motivation

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Rajiv Gandhi University of Health Sciences, Karnataka

I Year B.P.T. Degree Examination – April 2014

Time: 3 Hours **Max. Marks: 40 Marks**

Sociology

Q.P. Code: 2706

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

(Note: Both QP Codes 2705 and 2706 are to be answered within total duration of 3 hours)

LONG ESSAYS (Answer any One) **1 x 10 = 10 Marks**

1. Explain the factors of social change.
2. Characteristics of rural community

SHORT ESSAYS (Answer any Four) **4 x 5 = 20 Marks**

3. Classification of group
4. Stages of socialization
5. Types of family
6. Culture in health and illness
7. Social change and stress

SHORT ANSWERS **5 x 2 = 10Marks**

8. Joint family
9. Social group
10. Interview
11. Poverty
12. Culture

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Rajiv Gandhi University of Health Sciences, Karnataka

I Year B.P.T. Degree Examination - April-2014

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

BIO-MECHANICS (Revised Scheme – 4)

Q.P. CODE: 2707

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

LONG ESSAYS (Answer any Two) **2 x 10 = 20 Marks**

1. Define gait and gait cycle. Explain in detail the determinants of gait.
2. Discuss in detail dynamic stability of Gleno-humeral joint.
3. Explain the structure of typical lumbar vertebrae. Add a note on function of the lumbar spine.

SHORT ESSAYS (Answer any Twelve) **12 x 5 = 60 Marks**

4. Define equilibrium. Discuss types of equilibrium with examples.
5. Write in detail the formation of arches in hand with its functions.
6. Define joint. Classify with examples and add a note on features of the synovial joints.
7. Explain the orders of lever with examples in human body and also role of levers in physiotherapy.
8. Explain in detail the mechanism of muscle contraction.
9. Write extensor mechanism of hand and add a note on its function.
10. Brief-out weight bearing of hip joint and explain the muscle function in unilateral stance with example.
11. Write a note on sterno-clavicular joint movements.
12. Write in detail the extensor mechanism of knee. Mention the ligaments of the knee.
13. Explain active insufficiency with an example.
14. What is the functional position of the hand? Explain biomechanics of grips with an example.
15. Kinetics of posture
16. Metatarsal break
17. Movement analysis – sitting to standing

SHORT ANSWERS **10 x 2 = 20 Marks**

18. Index of insall and salvitii
19. Function and control of disk of temporomandibular joint
20. Hystersis
21. Moment arm of force
22. Carpal tunnel syndrome
23. Nutation and counter Nutation
24. Carrying angle and its importance
25. DOMS
26. What are the changes occur in IVD under compression loading
27. Anatomical pulley



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Rajiv Gandhi University of Health Sciences, Karnataka

I Year B.P.T Degree Examination – September 2014

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

ANATOMY (RS-3 & RS-4)

Q.P. CODE: 2701

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

LONG ESSAYS (Answer any Two) **2 x 10 = 20 Marks**

1. Describe the extra ocular muscles of the eye ball under the following headings:
   a) Origin b) Insertion c) Nerve supply d) Action
2. Describe the median nerve under the following headings:
   a) Origin, course, termination b) Branches c) Applied anatomy
3. Describe the popiteal fossa under the following headings:
   a) Boundaries b) Roof c) Floor d) Contents

SHORT ESSAYS (Answer any Twelve) **12 x 5 = 60 Marks**

4. Gluteus maximus
5. Superolateral surface of the cerebral hemisphere
6. Trapezius
7. Flexor retinaculam of hand
8. Cubital fossa
9. Superior mediastinum
10. Major opening of the diaphragm
11. Coronary arteries
12. Describe the intervertebral disc
13. Classification of bones
14. Describe pleura and its recesses
15. Describe the triceps surae
16. Features of typical rib
17. Menisci of knee joint

SHORT ANSWERS **10 x 2 = 20 Marks**

18. Name the paranasal air sinus and its location
19. What is styloid apparatus? Name the parts
20. Dupuytren's contracture
21. Name the parts of pancreas.
22. Name 4 muscles of the tongue. Give their nerve supply
23. Name 4 muscles of the facial expression. Give their nerve supply
24. What are fibrous joints? Give two examples
25. What is myotome?
26. Name the parts of the neural tube
27. Name the muscles, which cause inversion and eversion of the foot. At which joint do the movements take place

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Rajiv Gandhi University of Health Sciences, Karnataka

I Year B.P.T. Degree Examination – September 2014

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

HUMAN PHYSIOLOGY (RS-3 & RS-4)

Q.P. CODE: 2702

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

LONG ESSAYS (Answer any Two) **2 x 10 = 20 Marks**

1. With the graph of pressure changes explain the mechanics of ventilation
2. Give the formation, circulation and functions of CSF. Add a note on lumbar puncture
3. Define motor unit. Describe its relation to muscle contraction

SHORT ESSAYS (Answer any Twelve) **12 x 5 = 60 Marks**

4. Explain the functions of saliva
5. Briefly describe the regulation of GFR by the kidney
6. Describe the features of motor homunculus
7. Discuss the factors regulating erythropoiesis
8. Enumerate the functions of bile
9. Discuss the physiological action of thyroid hormone
10. Draw and label the normal ECG waves. Write the cause for each wave
11. Describe the functions of thrombocytes
12. Explain the phases in the regulation of gastric juice secretion
13. Enumerate the posterior pituitary hormones. Write the functions of oxytocin
14. Define puberty. Enumerate secondary sexual characteristics in female
15. Trace the pathway for fine touch
16. What is sleep? Differentiate between REM and NREM sleep
17. Describe the mechanisms by which the body adjusts to cold environment

SHORT ANSWERS **10 x 2 = 20 Marks**

18. Hormonal basis for ovulation
19. What are anti – coagulants. List four anti coagulants
20. What is acclimatization
21. Functions of oligodendrocytes
22. Draw a neuron and label its parts
23. Define jaundice. List the types of jaundice
24. Define a sarcomere
25. What is referred pain? Give two examples
26. Define shock. Name the types of shock
27. Functions of (a) Ribosomes (b) Mitochondria



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Rajiv Gandhi University of Health Sciences, Karnataka

I Year B.P.T. Degree Examination – September 2014

Time: Three Hours **Max. Marks: 80 Marks**

BIO-CHEMISTRY (RS-3 & RS-4)

Q.P. CODE: 2703

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

LONG ESSAYS (Answer any Two) **2 x 10 = 20 Marks**

1. Name the fat-soluble vitamins. Describe the formation of active form of Vitamin D, its biochemical functions and deficiency manifestations.
2. Enumerate Renal function tests. Define clearance test and add a note on Creatinine clearance test and its importance.
3. Describe urea cycle and name two inborn errors associated with this cycle.

SHORT ESSAYS (Answer any Eight) **8 x 5 = 40 Marks**

4. Biochemical functions of Vitamin C.
5. Fluid mosaic model of cell membrane
6. Metabolic acidosis
7. Functions and deficiency manifestations of Thiamine
8. Describe the synthesis of ketone bodies and mention two causes of ketosis.
9. Name the plasma lipoproteins and describe their functions.
10. Define Basal Metabolic Rate (BMR). Write its normal values and explain the factors affecting it.
11. Structure and functions of DNA
12. Describe the factors affecting the enzymes action.
13. Mucopolysaccharides

SHORT ANSWERS **10 x 2 = 20 Marks**

14. Mention two metabolic functions of mitochondria.
15. Mention two enzymes of diagnostic importance in myocardial infarction.
16. Coenzyme forms of Riboflavin and Niacin.
17. Mention two causes of obstructive jaundice.
18. Give the normal values of a) Serum total bilirubin b) Serum Urea
19. Phenylketonuria
20. Transamination
21. Van den Bergh reaction
22. Name primary and secondary bile acids.
23. Give the normal values of a) Serum total cholesterol b) Serum Creatinine.

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Rajiv Gandhi University of Health Sciences, Karnataka

I Year B.P.T. Degree Examination – September 2014

Time: Three Hours **Max. Marks: 80 Marks**

BIOMECHANICS (RS-3)

Q.P. CODE: 2704

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

LONG ESSAYS (Answer any Two) **2 x 10 = 20 Marks**

1. Define gait and gait cycle. Describe the kinetics of stance phase of gait.
2. Discuss in detail dynamic stability of Gleno-humeral joint.
3. Write in detail the formation of arches in hand with its functions.

SHORT ESSAYS (Answer any Eight) **8 x 5 = 40 Marks**

4. Define Equilibrium? Discuss types of equilibrium with examples
5. Explain in detail the mechanism of muscle contraction
6. Define Joint? Classify with examples & add a note on features of the synovial joints
7. Explain the orders of lever with examples in human body and also role of levers in physiotherapy
8. Explain the structure of typical lumbar vertebrae. Add a note on function of the lumbar spine.
9. Write extensor mechanism of hand and add a note on its function
10. Brief out weight bearing of hip joint & Explain the muscle function in unilateral stance with example.
11. Describe the biomechanics of elbow joint.
12. Write in detail the extensor mechanism of knee? Mention the ligaments of the knee.
13. Define therapeutic gymnasium. Explain the mechanical principles of
    a) Shoulder Wheel b) Treadmill

SHORT ANSWERS **10 x 2 = 20 Marks**

14. What is index plus minus foot
15. What is tonic & phasic muscle
16. What is equilibrium?
17. Moment arm of force
18. Carpal tunnel syndrome
19. What are force systems?
20. Carrying angle & its importance
21. Gluteus medius gait
22. Define and give example for concurrent system of force
23. Anatomical pulley

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Rajiv Gandhi University of Health Sciences, Karnataka

I Year B.P.T. Degree Examination – September 2014

Time: 3 Hours **Max. Marks: 40 Marks**

General Psychology

Q.P. Code : 2705

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

(Note : Both QP Codes 2705 and 2706 are to be answered within total duration of 3 hours)

LONG ESSAYS (Answer any One) **1 x 10 = 10 Marks**

1. Describe the role of heredity and environment in physical and psychological development.
2. What is emotion? Explain the theories of emotion.

SHORT ESSAYS (Answer any Four) **4 x 5 = 20 Marks**

3. Psychology and physiotherapy
4. Explain the principles of organization of perception
5. Types of conflicts
6. Explain insight learning theory
7. Describe development of attitude

SHORT ANSWERS **5 x 2 = 10Marks**

8. Rationalization
9. Observation
10. Problem solving
11. Mental retardation
12. Frustration

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Rajiv Gandhi University of Health Sciences, Karnataka

I Year B.P.T. Degree Examination – September 2014

Time: 3 Hours **Max. Marks: 40 Marks**

Sociology

Q.P. Code: 2706

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

(Note: Both QP Codes 2705 and 2706 are to be answered within total duration of 3 hours)

LONG ESSAYS (Answer any One) **1 x 10 = 10 Marks**

1. Explain the stages of socialization.
2. Define social change. Explain the factors of social change.

SHORT ESSAYS (Answer any Four) **4 x 5 = 20 Marks**

3. Social problems and disabled
4. Differences between primary and secondary group
5. Characteristics of rural community
6. Culture and health
7. Agencies of socialization

SHORT ANSWERS **5 x 2 = 10Marks**

8. MSW
9. Juvenile delinquency
10. Population explosion
11. Social security
12. Alcoholism

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Rajiv Gandhi University of Health Sciences, Karnataka

I Year B.P.T. Degree Examination - September 2014

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

BIO-MECHANICS (Revised Scheme – 4)

Q.P. CODE: 2707

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

LONG ESSAYS (Answer any Two) **2 x 10 = 20 Marks**

1. Describe in detail about static and dynamic stability of shoulder joint.
2. Enumerate the classification of joints and explain in detail with examples.
3. Describe in detail about mechanism of muscle contraction, and add a note on different types of muscle contraction.

SHORT ESSAYS (Answer any Twelve) **12 x 5 = 60 Marks**

4. Screw home mechanism of knee joint
5. Mention in brief about concurrent force systems.
6. Define gait and explain about phases of gait cycle.
7. Musculoskeletal changes in pregnancy
8. Explain in detail about functional position of wrist and hand.
9. Define lever and explain in detail about II order lever with example in human body.
10. Length tension relationship of a muscle
11. Structure and function of Temperomandibular joint
12. Mention in detail about muscles responsible for normal ventilation.
13. Enumerate the deviations occurring at Ankle joint.
14. Lumbo pelvic rhythm
15. Explain the concept of stability in Hip joint.
16. Outline the general properties of connective tissue.
17. Explain in brief about kinetics and kinematics with examples.

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SHORT ANSWERS **10 x 2 = 20 Marks**

18. Define Moment arm of force.
19. Spurt and shunt muscle
20. What is Gait cycle?
21. Define axis and plane.
22. Explain good and bad posture.
23. What is concentric and eccentric contraction?
24. Stress strain curve
25. Name the ligaments of Hip joint.
26. Anteversion and Retroversion
27. Define COG and LOG.

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