

APRIL - 2001

[KD 915]

Sub. Code : 5148

BACHELOR OF PHYSIOTHERAPY DEGREE
EXAMINATION.

Fourth Semester

(Modified/Revised Regulations)

(Common to BPT and BOT Examinations)

Paper III — BIOMECHANICS

Time : Three hours

Maximum : 100 marks

1. Write an essay on any ONE of the following : (20)

(a) Describe the structure of the tibiofemoral articulation and explain the events occurring during a complete extension from a complete flexion.

Or

(b) Explain the features of lumbar vertebra with diagram and explain the movements of lumbar spine.

2. Write short notes on any SIX : (6 × 5 = 30)

- (a) Screw home movement
- (b) Isokinetic exercises

- (c) Intervertebral disc
- (d) Levers
- (e) Angle of muscle pull
- (f) Joint reaction forces
- (g) Active insufficiency
- (h) Lumbar pelvic rhythm.

3. Write an essay on any ONE of the following : (20)

(a) Explain the mechanics of the following :

- (i) Pain reduction in hip joints with the help of a stick.
- (ii) More degeneration between C₅-C₆ vertebral joints in degenerative arthritis.
- (iii) Development of Tennis Elbow.
- (iv) Instability of Knee diagnosed in an athlete.

(b) Explain about normal posture and explain about the impact of flexor contracture of knee, on function of an individual.

4. Write short notes on any SIX : (6 × 5 = 30)

- (a) Scouosis.
- (b) Reciprocal click of temporo mandibular joint.
- (c) Cubitus valgus.
- (d) Q angle and the importance.

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- (e) *Supination pronation of foot.*
 - (f) *The extensor mechanism in hand.*
 - (g) *Collapse of the arches of foot.*
 - (h) *Functional position of wrist and hand.*
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APRIL - 2001

[KD 951]

Sub. Code : 5714

**BACHELOR OF OCCUPATIONAL THERAPY
DEGREE EXAMINATION.**

(Modified Regulations)

Fifth Semester

**Paper I — BIOMECHANICS, APPLIED ANATOMY
AND PHYSIOLOGY**

Time : Three hours

Maximum : 100 marks

1. Write an essay on any ONE of the following : (20)

(a) Describe the structure and function of thumb musculature and its role in hand function.

Or

(b) Describe types of motion, planes of motion, direction of motion and quantity of motion.

2. Write short notes on any SIX : (6 × 5 = 30)

(a) Gravity

(b) Anatomical position of body

(c) Friction

(d) Mechanical advantage in 2nd and 3rd class level

(e) function position of wrist and hand

(f) The joint capsule

(g) Function of interansic muscle of foot

(h) kyphosis.

3. Write an essay on any ONE of the following : (20)

(a) Describe the mechanism of respiration.

Or

(b) Describe normal EEG and cardiovascular compensation for postural and gravitational changes.

4. Write short notes on any SIX : (6 × 5 = 30)

(a) Effect of exercise on respiration

(b) Oedema

(c) Normal gait

(d) Synaptic transmission

(e) Acid base reaction in blood

(f) Exchange of gases

(g) Dynamic stability

(h) Control of Posture.

APRIL - 2001

[KD 973]

Sub. Code : 5851

B.O.T. DEGREE EXAMINATION.

(New Modified Regulations)

Fifth Semester

Paper I — BIOMECHANICS, APPLIED ANATOMY
AND PHYSIOLOGY

Time : Three hours

Maximum : 100 marks

1. Write an essay on any ONE of the following. (20)

(a) Analyse posture with respect to the optimal alignment of joints in the antero-posterior and lateral views.

(b) Name the ascending tracts. Discuss in detail the origin, course, termination and functions of these tracts with diagram.

2. Write short notes on any SIX : (6 × 5 = 30)

(a) Time and distance parameters of gait.

(b) Synoptic transmission.

(c) Lumbar pelvic rhythm.

(d) Functional position of wrist and hand.

(e) Coxa vara.

(f) Levers.

(g) Spinal shock.

(h) Q angle.

3. Write an essay on any ONE of the following ; (20)

(a) Discuss active muscle tension. Describe the factors affecting muscle function.

(b) Explain the role of each of the determinants of gait.

4. Write short notes on any SIX : (6 × 5 = 30)

(a) Hypertension.

(b) Scapulo humeral rhythm.

(c) Newton's Law of reaction.

(d) Scoliosis.

(e) Control of posture.

(f) Arches of foot.

(g) Pelvic tilting.

(h) Lung compliance.

NOVEMBER - 2001

[KE 951]

Sub. Code : 5714

**BACHELOR OF OCCUPATIONAL THERAPY
DEGREE EXAMINATION.**

(Modified Regulations)

Fifth Semester

**Paper I — BIOMECHANICS, APPLIED ANATOMY
AND PHYSIOLOGY**

Time : Three hours

Maximum : 100 marks

SECTION A

1. Write an essay on any ONE of the following : (20)
 - (a) Define Active Muscle Tension. Describe the factors affecting muscle function.
 - (b) Discuss the attachments and functions of various knee joint ligaments.
2. Write short notes on any SIX : (6 × 5 = 30)
 - (a) Active and Passive Insufficiency.
 - (b) Gluteus Medius Gait.
 - (c) Rotator Cuff.
 - (d) Concentric muscle contraction.
 - (e) Mobility and Stability at Elbow complex in relation to functional activities.
 - (f) Extrinsic Finger Flexors.
 - (g) Moment arm of a muscle force.
 - (h) Pes Planus.

SECTION B

3. Write an essay on any ONE of the following : (20)
 - (a) Describe the nervous control of respiration.
 - (b) Explain the role of each of the determinants of gait.
4. Write short notes on any SIX : (6 × 5 = 30)
 - (a) Lumbo pelvic rhythm.
 - (b) Breath sounds.
 - (c) Properties of Heart Muscles.
 - (d) Spinal Shock.
 - (e) Neuromuscular Transmission.
 - (f) Hypertension.
 - (g) Reciprocal Innervation.
 - (h) Kinematic Chains.

NOVEMBER - 2001

[KE 973]

Sub. Code : 5851

B.O.T. DEGREE EXAMINATION.

(New Modified Regulations)

Fifth Semester

Paper I — BIOMECHANICS, APPLIED ANATOMY
AND PHYSIOLOGY

Time : Three hours

Maximum : 100 marks

1. Write an essay on any ONE of the following : (20)

(a) Define gait and describe the gravitational moments of force acting at the hip, knee, ankle during the stance phase.

(b) Describe the mobility and stability of the elbow complex and its relationship to hand and wrist.

2. Write short notes on any SIX : (6 × 5 = 30)

(a) Force

(b) Anatomic pulleys

(c) Equilibrium of a lever

(d) Torque

(e) Kinematic chain

(f) Reverse action

(g) Isokinetic exercises

(h) An Alpha motor neuron.

3. Write an essay on any ONE of the following : (20)

(a) Outline the structure and function of the Central Nervous system.

(b) Describe the Biomechanics of Shoulder joint.

4. Write short notes on any SIX : (6 × 5 = 30)

(a) Hypertension

(b) Newton's law of reaction

(c) Range of Motion

(d) Velocity

(e) Eccentric contraction

(f) Pretension

(g) Function of the menisci

(h) Properties of gases.

MARCH - 2002

[KG 951]

Sub. Code : 5714

**BACHELOR OF OCCUPATIONAL THERAPY
DEGREE EXAMINATION.**

Fifth Semester

(Modified Regulations)

**Paper I — BIOMECHANICS, APPLIED ANATOMY
AND PHYSIOLOGY**

Time : Three hours

Maximum : 100 marks

1. Write an essay on any ONE of the following : (20)
 - (a) Describe the function of the radio carpal and mid carpal joints including the movements and the muscles involved.
 - (b) Describe prehension and precision handling.
2. Write short notes on any SIX : (6 × 5 = 30)
 - (a) Three types of motion
 - (b) Anatomic pulleys
 - (c) Ligaments associated with joints of the elbow complex
 - (d) Metacarpo phalangeal extension
 - (e) Femoral motion

(f) Structures contributing to medial and lateral stability of the knee.

(g) Effect of toe extension on plantar arches.

(h) Position of hip and knee joint in optimal erect posture.

3. Write an essay on any ONE of the following : (20)

(a) Describe the phases of gait, joint motion at hip, knee and ankle for one extremity during a gait cycle.

(b) Describe reflex action and reciprocal innervations with suitable examples.

4. Write short notes on any SIX : (6 × 5 = 30)

(a) Cutaneous sensation

(b) Control of posture

(c) Hypertension

(d) Cardiovascular compensation of postural and gravitational changes

(e) Nervous control of respiration

(f) Autonomic nervous system

(g) Mechanical advantage in a second and third class levers

(h) Equilibrium of a lever.

MARCH - 2002

[KG 973]

Sub. Code : 5851

B.O.T. DEGREE EXAMINATION.

(New Modified Regulations)

Fifth Semester

**Paper I — BIOMECHANICS, APPLIED ANATOMY
AND PHYSIOLOGY**

Time : Three hours

Maximum : 100 marks

1. Write an essay on any ONE of the following : (20)
 - (a) Explain the Lumbar pelvic rhythm and its biomechanical significance.
 - (b) Discuss the biomechanics of hand functions.
2. Write short notes on any SIX : (6 × 5 = 30)
 - (a) Centre of gravity
 - (b) ECG
 - (c) Attachments and functions of menisci
 - (d) Kinematic chains
 - (e) A typical vertebra
 - (f) Active and passive insufficiency
 - (g) Functions of patellofemoral joint
 - (h) Angle of inclination and torsion.

3. Write an essay on any ONE of the following : (20)
 - (a) Explain the role of each of the determinants of gait
 - (b) Describe the mechanism that maintain muscle tone and posture.
4. Write short notes on any SIX : (6 × 5 = 30)
 - (a) Lung volumes
 - (b) Structure of carpometacarpal joint of thumb
 - (c) Distribution of weight in the foot
 - (d) Joint capsule of knee joint
 - (e) Carrying angle of elbow
 - (f) Ground reaction forces
 - (g) Concentric and eccentric contractions
 - (h) Rotator cuff.

SEPTEMBER - 2002

[KH 973]

Sub. Code : 5851

B.O.T. DEGREE EXAMINATION.

(New Modified Regulations)

Fifth Semester

**Paper I — BIOMECHANICS, APPLIED ANATOMY
AND PHYSIOLOGY**

Time : Three hours

Maximum : 100 marks

1. Write an essay on any ONE of the following : (20)

(a) The Extensor mechanism in the finger musculature?

(b) Analyse posture in the lateral view.

2. Write short notes on any SIX : (6 × 5 = 30)

(a) Three types of motion.

(b) Differentiate closed and open kinematic chain with examples.

(c) Describe first, second and third class levers with one example in the human anatomy for each.

(d) Spherical grasp.

(e) Ligaments of the wrist complex

(f) Effects of exercise on respiration

(g) Spurt and shunt muscles

(h) Synaptic transmission.

3. Write an essay on any ONE of the following : (20)

(a) Describe the following features of the Hip joint articulating surfaces, angulations, angle of inclination, angle of torsion of the femur.

(b) Describe effects of injury and immobilization of the elbow joint.

4. Write short notes on any SIX : (6 × 5 = 30)

(a) Active insufficiency : Explain with an example

(b) Types of muscle fibres

(c) Structures that contribute to joint stability

(d) Neuro muscular transmission

(e) Properties of Cardiac muscles

SEPTEMBER - 2002

(f) Artificial respiration

(g) Hook grasp : Explain the pattern and muscles involved

(h) Function of intrinsic muscles of the foot.

APRIL - 2003

[KI 973]

Sub. Code : 5851

**BACHELOR OF OCCUPATIONAL THERAPY
DEGREE EXAMINATION.**

Fifth Semester

(New Modified Regulations)

**Paper I — BIOMECHANICS, APPLIED ANATOMY
AND PHYSIOLOGY**

Time : Three hours

Maximum : 100 marks

1. Write essay on any ONE of the following : (20)
 - (a) Describe the phases of the gait cycle
 - (b) Describe the structural components of the wrist complex.
2. Write short notes on any SIX : (6 × 5 = 30)
 - (a) Active insufficiency
 - (b) Closed kinematic chain
 - (c) Second class levers
 - (d) Spherical grasp

- (e) Distribution of weight within the foot
- (f) Kyphosis and lordosis
- (g) Action of the heart
- (h) Oedema.

3. Write essay on any ONE of the following : (20)
 - (a) Classify joints. Describe with suitable examples.
 - (b) Describe parallel force systems with suitable examples.
4. Write short notes on any SIX : (6 × 5 = 30)
 - (a) Spurt and shunt muscles
 - (b) Neuromuscular transmission
 - (c) Effects of exercise on respiration
 - (d) Deep and superficial sensation
 - (e) Hypertension
 - (f) Mention and briefly describe the knee joint ligaments
 - (g) Winging of the scapula
 - (h) Effect of aging on posture.

OCTOBER - 2003

[KJ 951]

Sub. Code : 5714

BACHELOR OF OCCUPATIONAL THERAPY
DEGREE EXAMINATION.

Fifth Semester

(Modified Regulations)

Paper I — BIOMECHANICS, APPLIED ANATOMY
AND PHYSIOLOGY

Time : Three hours

Maximum : 100 marks

Theory : Two hours and
forty minutes

Theory : 80 marks

M.C.Q. : Twenty minutes

M.C.Q. : 20 marks

M.C.Q. must be answered **SEPARATELY** on the
answer sheet provided as per the instructions on
the first page of M.C.Q. Booklet.

Answer **ALL** questions.

Draw suitable diagrams wherever necessary.

I. Write any **TWO** Essay : (2 × 15 = 30)

1. Describe the Hip joint, articulating surfaces of
pelvis and femur, angle of inclination and forces that act
on the head of the femur.

2. Describe the elbow joint, mobility, stability and
functional movements.

3. Describe the biomechanics of the shoulder joint.

4. Define gait and muscle activity at hip, knee and
ankle throughout the walking gait cycle.

II. Short questions. Write any **TEN** : (10 × 5 = 50)

(a) Three types of motion.

(b) The two main types of joints.

(c) Role of tibiofibular joints and supporting
ligaments.

(d) The normal forces that are acting at the knee.

(e) Spherical grasp.

(f) C.P.R. (Cardio Pulmonary Resuscitation).

(g) Properties of cardiac muscles.

(h) Active insufficiency.

(i) Kinematic chain.

(j) Isokinetic exercises.

(k) Prehension.

(l) Lung volume.

OCTOBER - 2003

[KJ 973]

Sub. Code : 5851

**BACHELOR OF OCCUPATIONAL THERAPY
DEGREE EXAMINATION.**

Fifth Semester

(New Modified Regulations)

**Paper I — BIOMECHANICS, APPLIED ANATOMY
AND PHYSIOLOGY**

Time : Three hours

Maximum : 100 marks

**Theory : Two hours and
forty minutes**

Theory : 80 marks

M.C.Q. : Twenty minutes

M.C.Q. : 20 marks

**M.C.Q. must be answered SEPARATELY on the
answer sheet provided as per the instructions on
the first page of M.C.Q. Booklet.**

Answer ALL questions.

Draw suitable diagrams wherever necessary.

I. Essay : (2 × 15 = 30)

Answer any TWO questions.

**1. Describe the 'line of gravity and its relation to the
hip, knee and ankle joints. What are the opposing forces
to the gravitational movement in each of these joints?**

**2. What are the phases and events of normal gait
cycle?**

**3. Describe with diagram the structures in the
extensor mechanism at MCP and IP joints.**

4. Explain with examples Tonic and Phasic muscles.

II. Write short notes on any TEN : (10 × 5 = 50)

(a) Dynamic stability of glenohumeral joint.

(b) Vertebral column and normal posture.

(c) Annular pulley and its function.

(d) Tennis elbow.

**(e) Ligaments of superior radio ulnar joints and
inferior radio ulnar joint.**

(f) 3rd class of lever with two examples.

(g) Amphi arthrodial joints.

(h) Importance of carrying angle.

(i) Scapulo humeral rhythm.

(j) Intervertebral disc functions.

(k) Open and closed kinematic chain.

(l) Properties of connective tissue.

AUGUST - 2004

[KL 973]

Sub. Code : 5851

**BACHELOR OF OCCUPATIONAL THERAPY
DEGREE EXAMINATION.**

Fifth Semester

(New Modified Regulations)

**Paper I — BIOMECHANICS, APPLIED ANATOMY
AND PHYSIOLOGY**

Time : Three hours

Maximum : 100 marks

**Theory : Two hours and
forty minutes**

Theory : 80 marks

M.C.Q. : Twenty minutes

M.C.Q. : 20 marks

Answer ALL questions.

Draw suitable diagrams wherever necessary.

I. Essay on any TWO : (2 × 15 = 30)

(1) Explain the biomechanics of shoulder joint in detail.

(2) Explain in detail, the different postural deviations and its effect on the body structures.

(3) Explain the Biomechanics of knee complex in detail.

(4) Describe the joint motion at hip, knee and ankle during a gait cycle.

II. Write short notes on any TEN : (10 × 5 = 50)

- (a) Scapulo humeral rhythm.**
- (b) Active and Passive insufficiency.**
- (c) Lung compliance.**
- (d) Classification of joints.**
- (e) Carrying angle.**
- (f) Patello femoral joint.**
- (g) Joint capsule.**
- (h) Gluteus medius Gait.**
- (i) Prehension.**
- (j) Lung volumes.**
- (k) Newtons law of reaction.**
- (l) Function of Menisci.**

FEBRUARY - 2005

[KM 973]

Sub. Code : 5851

**BACHELOR OF OCCUPATIONAL THERAPY
DEGREE EXAMINATION.**

Fifth Semester

(New Modified Regulation)

**Paper I — BIOMECHANICS, APPLIED ANATOMY
AND PHYSIOLOGY**

Time : Three hours

Maximum : 100 marks

**Theory : Two hours and
forty minutes**

Theory : 80 marks

M.C.Q. : Twenty minutes

M.C.Q. : 20 marks

Answer ALL questions.

Draw suitable diagrams where necessary.

I. Essay : (2 × 15 = 30)

(1) Explain the phases of the gait cycle.

**(2) Describe the extensor expansion and gliding
mechanism of finger flexors in the hand.**

II. Write Short notes : (10 × 5 = 50)

(a) Kinematic chains.

(b) Types of muscle action.

(c) Typical vertebra.

(d) Rotator cuff.

(e) Tennis elbow.

(f) Power grip.

(g) Synaptic transmission.

(h) Gluteus medius gait.

(i) Mechanics of respiration.

(j) Scoliosis.

AUGUST - 2005

[KN 973]

Sub. Code : 5851

**BACHELOR OF OCCUPATIONAL THERAPY
DEGREE EXAMINATION.**

Fifth semester

(New Modified Regulations)

**Paper I — BIOMECHANICS, APPLIED ANATOMY
AND PHYSIOLOGY**

Time : Three hours

Maximum : 100 marks

**Theory : Two hours and
forty minutes**

Theory : 80 marks

M.C.Q. : Twenty minutes

M.C.Q. : 20 marks

Answer ALL questions.

Draw suitable diagrams wherever necessary.

I. Essay : (2 × 15 = 30)

**(1) Define Centre of gravity. Explain how you
will assess the C.G of human body.**

**(2) Explain the lumbar pelvic rhythm and its
biomechanical significance.**

II. Write Short notes on : (10 × 5 = 50)

(a) Scapulo humeral rhythm

(b) CMC joint of thumb.

(c) Winging of scapula.

(d) Effect of aging on posture

(e) Genurecurvatum.

(f) Ligaments of wrist joint.

(g) Intrinsic muscles of foot.

(h) Artificial Respiration.

(i) Lever and its classification

(j) Inversion and eversion of foot.

FEBRUARY - 2006

[KO 973]

Sub. Code : 5851

**BACHELOR OF OCCUPATIONAL THERAPY
DEGREE EXAMINATION.**

Fifth Semester

(New Modified Regulations)

**Paper I — BIOMECHANICS, APPLIED ANATOMY
AND PHYSIOLOGY**

Time : Three hours

Maximum : 100 marks

**Theory : Two hours and
forty minutes**

Theory : 80 marks

M.C.Q. : Twenty minutes

M.C.Q. : 20 marks

Answer ALL questions.

Draw suitable diagrams wherever necessary.

I. Essay questions :

(2 × 15 = 30)

(1) Describe the biomechanics of wrist and hand complex.

(2) Classify joints. Explain each in detail with suitable examples.

II. Short notes on :

(10 × 5 = 50)

- (a) Lumbo sacral rhythm.**
- (b) Law of inertia.**
- (c) II class levers.**
- (d) Anatomic pulleys.**
- (e) Isokinetic exercises.**
- (f) Oedema.**
- (g) Reflex arc.**
- (h) Line of gravity.**
- (i) Radioulnar joints.**
- (j) Muscles of Inspiration.**

AUGUST - 2006

[KP 973]

Sub. Code : 5851

**BACHELOR OF OCCUPATIONAL THERAPY
DEGREE EXAMINATION.**

Fifth Semester

(New Modified Regulations)

**Paper I — BIOMECHANICS, APPLIED ANATOMY
AND PHYSIOLOGY**

Time : Three hours

Maximum : 100 marks

**Theory : Two hours and
forty minutes**

Theory : 80 marks

M.C.Q. : Twenty minutes

M.C.Q. : 20 marks

Answer ALL questions.

Draw suitable diagrams wherever necessary.

I. Essay Questions:

(1) Describe the Metacarpo phalangeal and inter phalangeal joints of the fingers. Briefly describe the extensor mechanism of the fingers. (20)

(2) Describe the scapulo humeral rhythm of the Shoulder complex. (15)

(3) Describe the different types of muscle action (contraction) with suitable examples. (15)

II. Short Questions :

(5 × 5 = 25)

- (a) Ligaments of the superior Radio ulnar joint.
 - (b) Neuro muscular junction.
 - (c) Passive insufficiency.
 - (d) Swing phase of Gait cycle.
 - (e) Lung volume.
 - (f) Nervous control of Respiration.
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FEBRUARY - 2007

[KQ 973]

Sub. Code : 5851

**BACHELOR OF OCCUPATIONAL THERAPY
DEGREE EXAMINATION.**

Fifth Semester

(New Modified Regulations)

**Paper I — BIOMECHANICS, APPLIED ANATOMY
AND PHYSIOLOGY**

Time : Three hours

Maximum : 100 marks

**Theory : Two hours and
forty minutes**

Theory : 80 marks

M.C.Q. : Twenty minutes

M.C.Q. : 20 marks

Answer ALL questions.

Draw suitable diagram wherever necessary.

I. Essay Questions :

- (1) Explain biomechanics of shoulder Joint. (20)**
- (2) Define center of gravity. Explain how you would assess the center of gravity for human body. (15)**
- (3) Describe ankle joint motion during gait cycle. (15)**

II. Short Notes :

(6 × 5 = 30)

- (a) Temporal components of gait.**
 - (b) Lung volumes**
 - (c) Inversion and eversion of foot.**
 - (d) Pes cavus.**
 - (e) Locking and unlocking of knee joint.**
 - (f) Artificial respiration.**
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FEBRUARY 2008

[KS 973]

Sub. Code : 5851

**BACHELOR OF OCCUPATIONAL THERAPY
DEGREE EXAMINATION.**

Fifth Semester

(New Modified Regulations)

**Paper I — BIOMECHANICS, APPLIED ANATOMY
AND PHYSIOLOGY**

Q.P. Code : 785851

Time : Three hours

Maximum : 100 marks

Theory : Two hours and

Theory : 80 marks

forty minutes

M.C.Q. : Twenty minutes

M.C.Q. : 20 marks

Answer ALL questions.

Draw suitable diagram wherever necessary.

I. Essay Question :

(2 × 15 = 30)

**1. Describe the structure of Tibiofemoral joint.
Explain about interior – posterior and medical – lateral
stability of knee joint.**

**2. Define posture, Analyse posture with respect to
the optimal alignment of joint in the antero – posterior
and lateral views.**

II. Short notes :

(10 × 5 = 50)

- (a) Kinetics and kinematics.**
 - (b) Scapulo – humeral rhythm.**
 - (c) Extensor expansion.**
 - (d) Breath sounds.**
 - (e) Lung compliance.**
 - (f) Degeneration and regeneration of nerve.**
 - (g) Levers.**
 - (h) Coupling pattern of movement in spine.**
 - (i) Carpo – Metacarpal joint of Thumb.**
 - (j) Power grip.**
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AUGUST 2008

[KT 973]

Sub. Code : 5851

**BACHELOR OF OCCUPATIONAL THERAPY
DEGREE EXAMINATION.**

Fifth Semester

(New Modified Regulations)

**Paper I — BIOMECHANICS, APPLIED ANATOMY
AND PHYSIOLOGY**

Q.P. Code : 785851

Time : Three hours

Maximum : 100 marks

Answer ALL questions.

Draw suitable diagram wherever necessary.

I. Essay : (2 × 15 = 30)

- 1. Describe the structural components, movements and functions of the shoulder joint.**
- 2. Describe the various phases of gait and muscle activity at the hip, knee and ankle throughout the gait cycle.**

II. Short notes : (10 × 5 = 50)

- 1. Inversion and eversion of foot.**
- 2. Role of interossei and lumbrical muscles at MCP and IP joints.**

AUGUST 2008

3. Motions of the vertebral column.
4. Artificial respiration.
5. Pes cavus.
6. Structures that contribute to the medial and lateral stability of the knee.
7. Maintenance of blood pressure.
8. Joint functions and kinematic chains.
9. Force and components of forces.
10. Functions of superior and inferior radioulnar joint.

III. Write short answers : (10 × 2 = 20)

1. Centre of gravity of the Human Body.
2. Strain.
3. Contractility.
4. Lordotic curve.
5. Spondylolisthesis.
6. Coxa valga.

7. Gluteus medius gait.
 8. Lung volume.
 9. Muscles of depression of shoulder joint.
 10. Pes cavus.
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February 2009

[KU 973]

Sub. Code: 5851

**BACHELOR OF OCCUPATIONAL THERAPY
DEGREE EXAMINATION
Fifth Semester
New Modified Regulations
Paper I – BIOMECHANICS, APPLIED ANATOMY
AND PHYSIOLOGY
Q.P. Code : 785851**

Time : Three hours

Maximum : 100 marks

Answer All questions

Draw suitable diagrams wherever necessary

I. Essays : (2 x 15 = 30)

1. Describe the basic principles of joint design, types of joints and joint functions.
2. Describe the phases and events of a normal gait cycle.

II. Short Notes on : (10 x 5 = 50)

1. Normal E.C.G.
2. Lung Compliance.
3. Normal posture.
4. Concentric and eccentric contraction.
5. Scapulohumeral rhythm.
6. Third class lever.
7. Carrying angle and its significance.
8. Levers.
9. Anterior and posterior tilt of pelvis.
10. Extensor Expansion.

III. Short Answer: (10 x 2 = 20)

1. Cadence.
2. Coxa Valga.
3. House maid's knee.
4. Vital capacity.
5. Oedema.
6. Pes planus.
7. Pad to pad prehension.
8. Kyphosis.
9. Genu varum.
10. Spinal stenosis.

August 2009

[KV 973]

Sub. Code: 5851

**BACHELOR OF OCCUPATIONAL THERAPY
DEGREE EXAMINATION
Fifth Semester
New Modified Regulations
Paper I – BIOMECHANICS, APPLIED ANATOMY
AND PHYSIOLOGY
Q.P. Code : 785851**

Time : Three hours

Maximum : 100 marks

Answer All questions

Draw suitable diagrams wherever necessary

I. Essays : (2 x 15 = 30)

1. Describe the structure that contribute to the medial and lateral stability, posterior and rotational stability of knee joint.
2. Define typical lumbar vertebrae. Describe the stability and mobility of lumbar spine.

II. Short Notes on : (10 x 5 = 50)

1. Determinants of gait.
2. Joint lubrication.
3. Lumbar pelvic rhythm.
4. Supination and pronation twist.
5. Properties of muscle.
6. Artificial respiration.
7. 'Q' Angle.
8. Claw hand.
9. Foot drop.
10. Active and passive insufficiency.

III. Short Answer: (10 x 2 = 20)

1. Law of Inertia.
2. Moment arm.
3. Tide mark.
4. Instantaneous axis of rotation.
5. Synergists.
6. Carrying angle.
7. Bunnel's sign.
8. Trendelenberg gait.
9. Housemaid's knee.
10. Subtalar neutral position.

February 2010

[KW 973]

Sub. Code: 5851

**BACHELOR OF OCCUPATIONAL THERAPY
DEGREE EXAMINATION
Fifth Semester
New Modified Regulations
Paper I – BIOMECHANICS, APPLIED ANATOMY
AND PHYSIOLOGY
Q.P. Code : 785851**

Time : Three hours

Maximum : 100 marks

Answer All questions

Draw suitable diagrams wherever necessary

I. Essays : (2 x 15 = 30)

1. Describe the kinetics and kinematics of lumbar region.
2. Define typical lumbar vertebrae. Describe the stability and mobility of lumbar spine.

II. Short Notes on : (10 x 5 = 50)

1. Nutation and counter nutation.
2. Motions in the rays of the foot.
3. Reciprocal innervation.
4. Claw hand.
5. Explain the development of Hallux valgus.
6. Kinematics and kinetics of trunk and upper extremities during gait.
7. Screw home mechanism of knee.
8. Levers.
9. Coxa vera.
10. Properties of muscle.

III. Short Answer: (10 x 2 = 20)

1. Law of Inertia.
2. Moment Arm.
3. Tide mark.
4. Instantaneous axis of rotation.
5. Synergists.
6. Carrying angle.
7. Bunnel's sign.
8. Trendelenberg gait.
9. Housemaid's knee.
10. Subtalar neutral position.
