



51216

Second B.P.Th. (2012) Examination, Summer 2018
KINESIOLOGY

Total Duration : Section A + B = 3 Hours

Total Marks : 80

SECTION – A and SECTION – B

- Instructions :**
- 1) Use **blue/black** ball point pen only.
 - 2) **Do not** write anything on the **blank portion of the question paper**. If written anything, such type of act will be considered as an attempt to resort to unfair means.
 - 3) **All** questions are **compulsory**.
 - 4) The number to the **right** indicates **full** marks.
 - 5) Draw diagrams **wherever** necessary.
 - 6) Distribution of syllabus in Question Paper is only meant to cover entire syllabus within the stipulated frame. The Question paper pattern is a mere guideline. Questions can be asked from any paper's syllabus into any question paper. Students cannot claim that the Question is out of syllabus. As it is only for the placement sake, the distribution has been done.
 - 7) **Use** a common answerbook for **all** Sections.

SECTION – A SAQ (50 Marks)

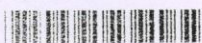
1. Short answer question (**any five** out of six) : (5×3=15)
 - a) Describe contractile unit of muscle.
 - b) Classification of muscles as per the fiber arrangement.
 - c) Moment arm of force.
 - d) Types of collagen.
 - e) Define stress and strain.
 - f) Define passive insufficiency of muscle.
2. Short answer question (**any five** out of six) : (5×7=35)
 - a) Describe arthrokinematics by giving example.
 - b) Write a note on prehensile function of hand. *Prehensile*
 - c) Write the kinetics and kinematics of sit to stand.
 - d) Define coxa vara and coxa valga and explain effect of it on abductor muscle.
 - e) Describe closed and open chain exercises.
 - f) Describe kinetics and kinematics of TM joint.

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SECTION – B LAQ (30 Marks)

3. Long answer question (**any one** out of two) : (1×15=15)
- a) Describe cervical vertebra. Describe kinetics and kinematics of cervical spine. (3+6+6)
 - b) Define Gait cycle. Describe kinetic and kinematics of gait. (3+12)
4. Long answer question (**any one** out of two) : (1×15=15)
- a) Describe kinetic and kinematics of ankle joint and write a note on arches of foot. (5+4+6)
 - b) Describe the articular surfaces of elbow joint. Write the kinetics and kinematics of it. (3+4+4+4)
Write a note on carrying angle.
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SECTION – A SAQ (50 Marks)

1. Short answer question (**any five** out of six) : (5×3=15)
 - a) Anatomical pulley.
 - b) Define shunt and spurt muscle.
 - c) Define Motor unit. State size principle of motor unit recruitment.
 - d) Define Close and Open kinematic chain and give one example of each.
 - e) State concave convex rule with example.
 - f) Define active insufficiency of muscles with example.
2. Short answer question (**any five** out of six) : (5×7=35)
 - a) Describe kinetics and kinematics of sit to stand from a chair without armrest.
 - b) Enlist the movements at temporomandibular joint. Explain the kinematics and kinetics of opening and closing of mouth.
 - c) Describe Nutation and Counternutation. Write function of pelvic floor muscles.
 - d) If a person has left painful hip in which hand he should hold the cane. Explain the reason for your answer.
 - e) Define carrying angle. Explain the muscle work during push up.
 - f) Describe archs of foot and explain it's function.

P.T.O.



SECTION – B LAQ (30 Marks)

3. Long answer question (**any one** out of two) : (1×15=15)
- a) Define Gait cycle. Describe determinants of gait. Describe the kinetics and kinematics of gait in sagittal plane. (2+5+8)
 - b) Describe Q angle along with its importance. Describe kinetics and kinematics of tibiofemoral joint. (5+5+5)
4. Long answer question (**any one** out of two) : (1×15=15)
- a) Describe kinetics and kinematics of glenohumeral joint. Explain scapulohumeral rhythm. (6+6+3)
 - b) Describe the kinetics and kinematics of thoracic spine. Write the importance of intervertebral disc. (5+5+5)
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Second B.P.T.H. (2012) Examination, Summer 2017
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SECTION – A SAQ (50 Marks)

1. Short answer question (**any five** out of six) : **(5×3=15)**
 - a) Define young's modulus.
 - b) Write the role of anatomic pulleys and give one example.
 - c) Define torque and state its relation with moment arm.
 - d) Define osteokinematics and arthokinematics.
 - e) Give one example each of closed and open kinematic chain action in human body.
 - f) State concave-convex rule.
2. Short answer question (**any five** out of six) : **(5×7=35)**
 - a) Compare the structure and function of Synarthroses with that of Diarthroses.
 - b) Describe organisation and recruitment of motor unit.
 - c) Describe types of muscle contraction.
 - d) Define joint play. Differentiate between closed packed and open packed position.
 - e) Differentiate between open kinematic chain and closed kinematic chain.
 - f) Define Lever and explain types of lever.

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SECTION – B LAQ (30 Marks)

(1×15=15)

3. Long answer question (**any one** out of two) :

a) Describe the gait under following heads :

i) Define gait.

ii) Describe phase of gait cycle.

iii) Explain kinetics and kinematics of gait instance phase at hip-knee-ankle.

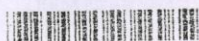
b) Describe kinetics and kinematics of lumbar spine. Add a note on role of Thoracolumbar fascia instability of the lumbopelvic region.

(1×15=15)

4. Long answer question (**any one** out of two) :

a) Describe kinetics and kinematics of sacroiliac joint. Add a note on pelvic floor muscles and their function.

b) Describe planter arches. Write its function. Add a note on muscle contribution to the arches.



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7) **Use** a common answer book for **all** sections.

SECTION – A (SAQ) (50 Marks)

1. Short answer question (**any five** out of six) :

(5×3=15)

- a) Name Ligaments of ankle joints.
- b) Note on Locking and unlocking of knee.
- c) Lumbo pelvic rhythm.
- d) Describe weight bearing structure of hip joint.
- e) Define step length and stride length.
- f) Enumerate Static stabilizers of glenohumeral joint.

P.T.O.



2. Short answer question (**any five** out of six) :

(5×7=35)

- a) Concave Convex Rule and its application.
- b) Note on different types of muscle contractions in detail.
- c) Write note on active and passive insufficiency with examples.
- d) Write an note on types of muscle fibres and their properties.
- e) Classification of joints and write note on Osteokinematics of wrist joint.
- f) Define Arthrokinematics and note on Gliding.

SECTION – B (LAQ) (30 Marks)

3. Long answer question (**any one** out of two) :

(1×15=15)

- a) Write in brief biomechanics of knee joint. Describe in details the tibio femoral complex with mediolateral joint stability.
- b) Describe in detail the functions of the ligaments of spinal column. Describe kinematics and kinetics of lumbar spine.

4. Long answer question (**any one** out of two) :

(1×15=15)

- a) What are phases of normal gait cycle ? Write note on gait determinants.
 - b) Write a note on Kinetics and kinematics of gait.
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SECTION – A
(SAQ)

(50 Marks)

1. Short answer question (any five out of six) :

(5x3=15)

a) Q angle.

b) Explain Length-Tension Relationship of muscle.

c) Define the terms osteokinetics and arthrokinematics.

Osteokinematics & arthrokinematics.

d) Enumerate classification of joints.

e) Movements of thorax.

f) Explain convex-concave rule.

2. Short answer question (any five out of six) :

(5x7=35)

a) Explain Lumbar pelvic rhythm.

b) Describe factors affecting muscle function. Describe any two with an appropriate example.

c) Describe different types of grips and pinches of adult human hand.

P.T.O.



- d) Explain stress-strain curve.
- e) Describe the role of Popliteus muscle in knee joint.
- f) Differentiate between type I and type II muscle fibers.

SECTION – B
(LAQ)

(30 Marks)

3. Long answer question (any one out of two) :

(1x15=15)

- a) Enumerate Shoulder complex. Explain scapulo-humeral rhythm. Describe kinetic and kinematics of glenohumeral joint.
- b) Discuss factors affecting stability and mobility of Elbow joint. Write a note on Carrying Angle.

4. Long answer question (any one out of two) :

(1x15=15)

- a) Describe determinants of gait. Discuss kinetics and kinematics of normal human gait in stance phase.
- b) Describe the three different Lever Systems with appropriate example for each with respect to human body.