

## **(2012 - Scheme)**

### **Biomechanics and Kinesiology**

**Time : 3 hrs**

**Max marks : 100**

- Answer all questions**
- Draw diagrams wherever necessary**

**Essays:**

**(2x14=28)**

1. Describe the hip complex. Explain the role of abductors in the unilateral and bilateral stance. Add a note on motion of pelvis on femur. **(5+5+4=14)**
2. Define static and dynamic posture. Explain the analysis of standing posture. Add a note on effects of age on posture. **(4+8+2=14)**

**Short notes:**

**(4x8=32)**

3. What is stress and strain. Explain load / deformation curve with example.
4. Intrinsic plus and intrinsic minus hand.
5. Explain the screw-home mechanism of knee joint.
6. Kinematics of chest wall in breathing.

**Answer briefly:**

**(10x4=40)**

7. Windlass mechanism.
8. Resting position of scapula.
9. Carrying angle
10. Angle of pull.
11. Define power and energy.
12. Functional significance of palmar arches.
13. Define equilibrium. Types of equilibrium.
14. Convex-concave rule in arthrokinematics of joint.
15. What is metatarsal break.
16. Function of arches of foot.