

**B.Sc. PROSTHETICS AND ORTHOTICS  
FIRST YEAR  
PAPER VIII – ORTHOTICS – I**

*Q.P. Code: 802408*

**Time: Three hours**

**Maximum : 100 Marks**

**Answer All questions**

**I. Elaborate on:**

**(3 x 10 = 30)**

1. Explain in detail about Tracing, Measurement and Layout for Metallic Ankle Foot Orthosis.
2. Give a brief classification of various types of Foot Orthosis and describe those in details.
3. Explain the Biomechanical force system in Plastic Ankle Foot Orthosis.

**II. Write notes on:**

**(8 x 5 = 40)**

1. Function and indication of Fracture Bracing.
2. What is Charcot Foot and explain its orthotic management?
3. Explain about klenzak orthotic ankle joint.
4. Explain in detail Valgus and Varus strap.
5. Differentiate between Weight bearing and Weight relieving Orthosis.
6. What are the different types of Arch support? Draw neat sketches.
7. Draw and explain about different types of stirrup.
8. Explain trimlines of plastic ankle foot Orthosis with diagram.

**III. Short answers on:**

**(10 x 3 = 30)**

1. Write a short note on Flanger AFO.
2. AFO can be explained as a Cantilever Beam. Justify.
3. Write a short note on Thomas heel.
4. What are the Clinical Objectives of Orthotic Fitment?
5. Write about Pes cavus deformity and its Orthotic management.
6. What do you mean by Corrective Forces in Orthosis?
7. What is Calcaneal spur and explain its management?
8. Write a note on Foot drop Conditions.
9. Briefly explain the types of shoe.
10. What is code of Ethics?

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**I. Elaborate on:**

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1. Orthotic Prescription criteria and Principles.
2. Describe about various type of ankle joint and its indication.
3. Describe with a neat labeled diagram of shoe and their parts.

**II. Write notes on:**

**(8 x 5 = 40)**

1. UCBL.
2. Various materials used in Orthotics.
3. Different types of shoes and it functions.
4. Various types of mechanical Ankle joints with one example to each.
5. Bio Mechanics of Ankle foot orthosis.
6. Weight distribution on normal foot.
7. Write on Shoe last, its types and functions.
8. Congenital talipes equinovarus.

**III. Short answers on:**

**(10 x 3 = 30)**

1. What is the function of arch support and metatarsal pad?
2. How Orthotic ankle joint aligned with anatomical ankle joint?
3. What is Calcaneal spur? Write about its footwear modification.
4. When you will prescribe limited motion ankle joint?
5. Write about Pes cavus deformity and its Orthotic management.
6. Draw the Measurement of Calf Band.
7. Explain 3-point force system.
8. How lower limb orthoses are nomenclatured?
9. What are the roles of an Orthotist?
10. Explain T - Strap.

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**Answer All questions**

**I. Elaborate on:** **(3 x 10 = 30)**

1. Congenital Talipes Equinovarus and its orthotic Management.
2. Foot Orthosis and its types.
3. Explain any three types of Ankle Foot Orthosis.

**II. Write notes on:** **(8 x 5 = 40)**

1. Differentiate Internal and External shoe modification.
2. What is Shoe last and its function? What are the different types of Shoe Last?
3. Explain Supra Malleolar Orthosis and its prescription criteria.
4. Articulated Ankle foot orthosis indication and contraindication.
5. Explain leaf spring ankle foot orthosis.
6. Explain the mechanism of double action assist orthotic ankle joint.
7. Explain Denis Browne splint with neat sketches.
8. Explain various fabricating materials used in lower Orthotics.

**III. Short answers on:** **(10 x 3 = 30)**

1. Functions of medial longitudinal arch.
2. Explain Valgus strap.
3. What are the Objectives of Foot Orthosis?
4. Explain Shoe Upper and its parts.
5. Define eversion movement of the foot.
6. Indication to prescribe the Dorsiflexion assist ankle joint.
7. Write a short note on Metatarsal Pad.
8. Write a note on limb length discrepancy.
9. Draw a neat labeled sketch of Hemi spiral AFO.
10. Define Windlass mechanism of the foot.

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