[LN 0818] AUGUST 2018 **Sub. Code: 2458**

BACHELOR IN PROSTHETICS AND ORTHOTICS

FIRST YEAR

PAPER VIII – ORTHOTICS SCIENCE - I

Q.P. Code: 802458

Time: Three Hours **Maximum : 100 Marks**

Answer All questions

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

1. Explain about different types of Ankle foot orthosis.
2. Briefly explain about different types of shoes.
3. Explain about foot orthosis and types.

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

1. Charcot foot and its Orthotic management.
2. Congenital talipes equino varus.
3. Shoe last, its type and function.
4. Bio Mechanics of Ankle foot orthosis.
5. Explain Denis Browne splint with neat sketches.
6. Explain the mechanism of double action assist orthotic ankle joint.
7. Briefly describe Diabetic foot conditions and outline its orthotic management.
8. Explain Supra Malleolar Orthosis and its prescription criteria.

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

1. Functions of medial longitudinal arch.
2. Placement of medial longitudinal arch support.
3. Explain Valgus strap.
4. Explain plantar flexion stop ankle joint.
5. Explain Shoe Upper and its parts.
6. Define eversion movement of the foot.
7. Indication to prescribe the Dorsiflexion assist ankle joint.
8. Functions of Metatarsal Pad.
9. Functions of Thomas heel.
10. Define Windlass mechanism of the foot.

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[LO 0219] FEBRUARY 2019 **Sub. Code: 2458**

BACHELOR IN PROSTHETICS AND ORTHOTICS

FIRST YEAR

PAPER VIII – ORTHOTICS SCIENCE - I

Q.P. Code: 802458

Time: Three Hours **Maximum : 100 Marks**

Answer All questions

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

1. Draw and explain the various types of ankle joint used in Ankle foot orthosis.
2. Explain different types of rocker modifications and functions.
3. Orthotic Prescription criteria and Principles.

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

1. Short notes of UCBL.
2. Various materials used in Orthotics.
3. Internal and External Shoe Modifications. And examples.
4. Various types of Mechanical Ankle joints with one example of each.
5. Differentiate Internal and External shoe modification.
6. Short notes of supra malleolar orthosis.
7. Explain any three footwear modifications.
8. Articulated Ankle foot orthosis indication and contraindication.

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

1. How you measure foot pressure. Explain?
2. Define Leg Length discrepancy.
3. What are the objectives of Orthotics Prescription?
4. Explain T - Strap.
5. Write a short note on Metatarsal Pad.
6. What are the roles of an Orthotist?
7. How lower limb orthoses are nomenclatured?
8. What are the different types of Arch support?
9. Explain 3-point force system.
10. Draw the Measurement of Calf Band.

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[LP 0819] AUGUST 2019 **Sub. Code: 2458**

BACHELOR IN PROSTHETICS AND ORTHOTICS

FIRST YEAR

PAPER VIII – ORTHOTICS SCIENCE - I

Q.P. Code: 802458

Time: Three Hours **Maximum : 100 Marks**

Answer All questions

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

1. Explain different types of rocker modifications and functions.
2. Congenital Talipes Equino Varus and Its orthotic Management.
3. Draw and explain the various types of ankle joint used in Ankle foot orthosis.

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

1. Explain any three footwear modifications.
2. Short notes of Hemi spiral Ankle foot orthosis.
3. Short notes of supra malleolar orthosis.
4. Explain the placement procedure of mechanical ankle joint.
5. Shoe modification for Calcaneal Spur.
6. Define Pes cavus and orthotic management.
7. Define Orthotist, orthotics and orthosis.
8. Conventional AFO and function.

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

1. When you will prescribe limited motion ankle joint?
2. Hammer toe and claw toe.
3. What is the function of arch support and metatarsal pad?
4. How you measure foot pressure. Explain?
5. Stirrup and types.
6. Foot drop.
7. Explain Valgus strap.
8. Write a note on limb length discrepancy.
9. Explain Denis Browne splint.
10. Explain 3-point force system.

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THE TAMIL NADU DR. M.G.R. MEDICAL UNIVERSITY

[AHS 0321] MARCH 2021 Sub. Code: 2458

(AUGUST 2020 EXAM SESSION)

BACHELOR IN PROSTHETICS AND ORTHOTICS

FIRST YEAR (Regulation 2017-2018)

PAPER VIII – ORTHOTICS SCIENCE - I

Q.P. Code : 802458

Time: Three hours **Answer ALL Questions** **Maximum: 100 Marks**

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

1. Explain about AFO fabrication procedure.
2. Explain about common below knee fracture and its orthotic management.
3. Explain about types of ankle joint.

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

1. Differentiate solid AFO with articulated AFO.
2. Define Orthotist, orthotics and orthosis.
3. Conventional AFO and function.
4. Define Thomas heel and reverse Thomas heel with function.
5. UCBL orthosis with biomechanical function.
6. Explain about objectives of orthosis.
7. Explain Dennis Browne splint and shoes with function.
8. Define Pes cavus and orthotic management.

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

1. Plantar pressure of foot.
2. Hammer toe and claw toe.
3. Function of anatomical arch support.
4. Draw neat diagram of orthopedic shoes with labeled parts.
5. Anesthetic foot.
6. Define Metatarsal algia and orthotic management.
7. Foot drop.
8. Stirrup and types.
9. CTEV AFO features.
10. Orthotic management for LLD.

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THE TAMIL NADU DR. M.G.R. MEDICAL UNIVERSITY

[AHS 0423] **APRIL 2023** **Sub. Code: 2458**

BACHELOR IN PROSTHETICS AND ORTHOTICS
FIRST YEAR (Regulation 2017-2018 onwards)
PAPER VIII – ORTHOTICS SCIENCE I
Q. P. Code: 802458

Time: Three Hours **Answer All questions** **Maximum : 100 Marks**

I. Elaborate on : **(3X10=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 checkout procedure and prescription criteria of conventional Ankle Foot orthosis.

II. Write Notes on : **(8X5=40)**

1. Orthotic management of Anaesthetic Foot.
2. Explain various fabricating materials used in lower extremity orthotics.
3. Explain Supra Malleolar Orthosis and its prescription criteria.
4. Explain functions, advantages and disadvantages of Internal and External shoe modification.
5. What are the types of limb length discrepancy and how you will measure it?
6. Explain functions and indications of Fracture Bracing.
7. Assist category Ankle joint.
8. Features of CTEV shoe.

III. Short Answers on : **(10X3=30)**

1. Reverse Thomas heel.
2. Explain 3-point force system and how will it correct the ankle foot deformity.
3. Write Indications and contraindications of limited motion ankle joint.
4. Charcot foot.
5. Define Pes cavus and pes planus.
6. Define Orthosis, Orthotist and Orthotics as per ISO.
7. Draw neat sketch of Solid and Split stirrup.
8. MT Pad and MT bar.
9. Trimlines of UCBL shoe insert.
10. Medial T-Strap.

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THE TAMIL NADU DR. M.G.R. MEDICAL UNIVERSITY

[AHS 1123] **NOVEMBER 2023** **Sub. Code: 2458**

BACHELOR IN PROSTHETICS AND ORTHOTICS
FIRST YEAR (Regulation 2017-2018 onwards)
PAPER VIII – ORTHOTIC SCIENCE I
Q. P. Code: 802458

Time: Three hours **Maximum : 100 Marks**

Answer ALL Questions

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

1. What is Anaesthetic foot and its orthotic management.
2. Explain about orthotic assessment and prescription criteria.
3. Explain about different types of AFO.

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

1. Difference between solid and hinged AFO.
2. What are the features and components of CTEV Orthosis?
3. What is PTB orthosis and discuss its functions?
4. Materials used for foot orthosis.
5. What is LLD and explain about its footwear modification.
6. Explain about internal shoe modification.
7. History of orthoses in India and abroad.
8. What is stirrup and its types?

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

1. Advantages of hybrid AFO.
2. Orthotic ankle joint placement.
3. Charcot foot.
4. Advantage of thermoplastic uses in orthoses.
5. Conservative Corrective method of CTEV.
6. Pes-equinus, calcaneus.
7. Functions of longitudinal arch.
8. Orthotic management for calcaneal spur.
9. DB splint and DB shoe.
10. Materials used in fabrication of Medial Arch Support Orthosis.

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THE TAMIL NADU DR. M.G.R. MEDICAL UNIVERSITY

[AHS 0424] **APRIL 2024** **Sub. Code: 2458**

BACHELOR IN PROSTHETICS AND ORTHOTICS
FIRST YEAR (Regulation 2017-2018 onwards)
PAPER VIII – ORTHOTIC SCIENCE I
Q. P. Code: 802458

Time: Three Hours **Answer All questions** **Maximum : 100 Marks**

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

1. What is Congenital Talipes Equinovarus and write its management procedure.
2. Describe about various type of Ankle joint and its indication.
3. Define Orthosis and write the history of Orthosis in India and abroad.

II. Write Notes on: **(8 X 5 = 40)**

1. Explain in detail about T-strap and its indication.
2. Types of foot Orthoses. Explain any one design in detail.
3. Differentiate Solid Ankle Foot Orthosis and Articulated Ankle Foot Orthosis.
4. What is external shoe modification? Write its advantage, disadvantage and types in detail.
5. What is the need of layout? Explain the objective of Reverse layout.
6. Describe diabetic foot conditions and outline its Orthotic management.
7. Explain fixation of stirrup plate in shoes.
8. Explain the types of shoe last.

III. Short Answers on: **(10 X 3 = 30)**

1. Biomechanics of ankle foot Orthosis.
2. What is bunion? Write its Orthotic management.
3. Draw a neat labelled diagram for weight distribution pattern of foot.
4. What are the objectives of orthotic prescription?
5. How lower limb Orthoses are nomenclatured?
6. Define windlass mechanism of the foot.
7. Explain on posterior leaf spring Ankle Foot Orthosis.
8. Write the functions of foot Orthosis.
9. Define pes cavus and its footwear modification.
10. Calf band and its position.

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THE TAMIL NADU DR. M.G.R. MEDICAL UNIVERSITY

[AHS 1124] **NOVEMBER 2024** **Sub. Code: 2458**

BACHELOR IN PROSTHETICS AND ORTHOTICS
FIRST YEAR (Regulation 2017-2018 onwards)
PAPER VIII – ORTHOTIC SCIENCE I
Q. P. Code: 802458

Time: Three Hours **Answer All questions** **Maximum : 100 Marks**

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

1. Explain in detail about the types of Orthotic ankle joints and describe the biomechanical control of each.
2. Explain about fabrication procedure of Solid Ankle Foot Orthosis (SAFO).
3. Explain about Orthotic sole rockers and its types.

II. Write Notes on : **(8 X 5 = 40)**

1. What is different between conventional and hybrid AFO.
2. Supra Malleolar Orthosis (SMO).
3. Different types of foot orthosis.
4. Three point force system.
5. Check-out procedure for hybrid AFO.
6. Layout and measurement of conventional AFO.
7. Design and description of camber axis joint.
8. What is double stop ankle joint mechanism and its function?

III. Short Answers on : **(10 X 3 = 30)**

1. 90 degree stop orthotic ankle joint.
2. Orthotic management for pes cavus.
3. Placement of stirrup.
4. Parts of shoe with a neat labeled diagram.
5. Write the components of CTEV deformities.
6. Thomas heel.
7. Name the anatomical Arches of Foot.
8. Prescription criteria for Hemi-Spiral AFO.
9. Diagnostic method of flat foot.
10. Hallux rigidus.

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THE TAMIL NADU DR. M.G.R. MEDICAL UNIVERSITY

[AHS 0425] **APRIL 2025** **Sub. Code: 2458**

BACHELOR IN PROSTHETICS AND ORTHOTICS
FIRST YEAR (Regulation 2017-2018 onwards)
PAPER VIII – ORTHOTIC SCIENCE I
Q. P. Code: 802458

Time: Three Hours **Answer All questions** **Maximum : 100 Marks**

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

1. What is Club foot deformity and explain in detail about the Orthotic management for it?
2. Describe Internal and External shoe modifications with its indication and functions.
3. Describe the checkout procedure for conventional Ankle Foot Orthosis.

II. Write Notes on : **(8 X 5 = 40)**

1. Briefly explain the principle of Orthotic management in Neuropathic foot.
2. Explain various types of Ankle Foot Orthoses for Drop foot and its Biomechanics with appropriate diagram.
3. Describe Arches of Anatomical foot.
4. Explain Patella tendon bearing Fracture Brace and its function.
5. Explain components of conventional Ankle Foot Orthoses and its function.
6. Define the orthotic management for Pes Planus and Pes Cavus.
7. Explain the prescription criteria and working principle of UCBL foot insert.
8. Illustrate types of stirrups used in conventional Ankle foot Orthosis.

III. Short Answers on : **(10 X 3 = 30)**

1. Reverse last shoe and its indication.
2. Blucher and Balmoral types of shoes.
3. Orthotic management of LLD.
4. Explain appropriate shoe modification for heel spur.
5. Medial T- strap and its indication.
6. Sesamoid platform.
7. Explain stress-strain curve.
8. Klenzac ankle joint.
9. Rockers of stance phase.
10. Windlass mechanism.

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