

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

[AHS 0122]

JANUARY 2022
(FEBRUARY 2021 & AUGUST 2021 EXAM SESSION)

Sub. Code: 2482

BACHELOR IN PROSTHETICS AND ORTHOTICS
FOURTH YEAR
PAPER II – ORTHOTIC SCIENCE – IV
Q.P. Code: 802482

Time: Three Hours

Answer ALL Questions

Maximum: 100 Marks

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

1. Milwaukee brace.
2. Biomechanics of Boston brace.
3. Orthotic management of kyphosis.

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

1. Knight Taylors brace.
2. Lumbosacral extension control orthosis.
3. Halo brace.
4. Cowhorn orthosis.
5. Biomechanics of corset.
6. SOMI brace.
7. Four poster orthosis.
8. Hard collar.

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

1. Importance of traction in spinal orthotics.
2. Soft collar.
3. Philadelphia collar.
4. Scoliosis.
5. Lordosis.
6. Parapodium.
7. Motions of spine.
8. Advantages and disadvantage of silicone prosthesis.
9. Corrective force for double curve in scoliosis.
10. Jewett brace.

[LJ 0816]

AUGUST 2016

Sub. Code :2441

**B.Sc. PROSTHETICS AND ORTHOTICS
FOURTH YEAR
PAPER I – PROSTHETICS SCIENCE – IV**

Q.P. Code: 802441

Time: Three Hours

Maximum : 100 Marks

Answer All questions

I. Elaborate on:

(3 x 10 = 30)

1. Check out procedure for hemi pelvectomy prosthesis.
2. Explain about different type of sports prosthesis and components.
3. Explain about Van Nes rotation plasty and prosthesis design.

II. Write notes on:

(8 x 5 = 40)

1. Explain acceleration and deceleration phase of hemipelvectomy prosthesis.
2. Fixation of hip joint in hemipelvectomy prosthesis.
3. Static alignment of hip disarticulation prosthesis.
4. Write about trans lumbar socket principles.
5. What is the prescription principles of hip disarticulation prosthesis?
6. Prosthetic Management of Bilateral Amputees.
7. Control of mediolateral stump movement in hemi pelvectomy prosthesis.
8. Write about immediate post surgical fitting prosthesis.

III. Short answers on:

(10 x 3 = 30)

1. Define hemipelvectomy.
2. Socket design for trans-lumbar prosthesis.
3. Define immediate Postoperative Prosthesis Fitting (IPPE).
4. What is anthropometric measurement?
5. Van Nes rotation plasty surgery indications.
6. What is phocomelia?
7. Trim line of hemipelvectomy socket.
8. Different types of athletic feet.
9. Explain about initial training for stubbies.
10. Features of foot used for high level amputees.

[LL 0817]

AUGUST 2017

Sub. Code :2441

**B.Sc. PROSTHETICS AND ORTHOTICS
FOURTH YEAR
PAPER I – PROSTHETICS SCIENCE – IV**

Q.P. Code: 802441

Time: Three Hours

Maximum : 100 Marks

Answer All questions

I. Elaborate on:

(3 x 10 = 30)

1. Bio mechanics of hip disarticulation prosthesis.
2. Explain about hemipelvectomy prosthesis and different socket system.
3. Briefly explain about trans lumbar prosthesis sitting and standing.

II. Write notes on:

(8 x 5 = 40)

1. Write about immediate post surgical fitting prosthesis.
2. Control of undesirable perineal pressure in hemi pelvectomy prosthesis.
3. Stubbies prosthesis.
4. Bench alignment of Hip disarticulation prosthesis.
5. What is the criteria of choosing prosthetic hip joints?
6. What are the prosthetic considerations of juvenile amputee?
7. Functional sequence of hip disarticulation prosthesis at mid stance.
8. Write about different designs of hip disarticulation prosthesis sockets.

III. Short answers on:

(10 x 3 = 30)

1. Advantage of Canadian hip prosthesis.
2. What is anthropometric measurement?
3. Define any one type of sports prosthesis.
4. Goals of socket design for translumbar amputee.
5. Describe sitting prosthesis.
6. Define bucket socket.
7. Van Nes rotation plasty surgery indications.
8. Define immediate Postoperative Prosthesis Fitting (IPPE).
9. What is Amelia?
10. Features of foot used for high level amputees.

[LN 0818]

AUGUST 2018

Sub. Code: 2441

**BACHELOR IN PROSTHETICS AND ORTHOTICS
FOURTH YEAR
PAPER I – PROSTHETICS SCIENCE – IV**

Q.P. Code: 802441

Time: Three Hours

Maximum : 100 Marks

Answer All questions

I. Elaborate on:

(3 x 10 = 30)

1. Biomechanics of hip disarticulation prosthesis.
2. Bench alignment of Hip disarticulation prosthesis.
3. Prosthetic Prescription for Trans Lumbar amputation.

II. Write notes on:

(8 x 5 = 40)

1. Explain about bucket socket.
2. Check out procedure for hemipelvectomy prosthesis.
3. Explain about Bilateral Stubbies.
4. Types of Prosthetic Hip Joints.
5. Prosthetic Knee joints used for Hip Disarticulation Prosthesis.
6. Explain about Congenital anomalies.
7. Different types of athletic feet.
8. Bilateral Trans Femoral Prosthesis Bench Alignment.

III. Short answers on:

(10 x 3 = 30)

1. Hip Disarticulation Casting Technique.
2. Trim line of hemipelvectomy socket.
3. What is Amelia?
4. Advantage of Canadian prosthesis.
5. Types of Prosthetic Hip Joints.
6. What is phocomelia?
7. Define any one type of sports prosthesis.
8. Van Nes rotation plasty surgery indications.
9. Immediate post-surgical fitting prosthesis.
10. Prosthesis for Child Amputee.

[LO 0219]

FEBRUARY 2019

Sub. Code: 2441

BACHELOR IN PROSTHETICS AND ORTHOTICS

FOURTH YEAR

PAPER I – PROSTHETICS SCIENCE – IV

Q.P. Code: 802441

Time: Three Hours

Maximum : 100 Marks

Answer All questions

I. Elaborate on:

(3 x 10 = 30)

1. Biomechanics of Hip Disarticulation Prosthesis.
2. Check-Out Procedures for Bilateral Stubbies.
3. Hip Disarticulation Prosthesis Bench Alignment.

II. Write notes on:

(8 x 5 = 40)

1. Trans Lumbar Prosthesis Measurement Procedure.
2. Hip Disarticulation Prosthesis Gait Deviations.
3. Prescription Principles for through hip Prosthesis.
4. Types of prosthetic hip joint.
5. Components used for hip disarticulation prosthesis.
6. Prosthetic prescription for Congenital anomalies.
7. Hip Disarticulation socket fabrication.
8. Bilateral Trans Femoral Prosthesis static Alignment Procedure.

III. Short answers on:

(10 x 3 = 30)

1. Types of Prosthetic Knee Joint.
2. Components used for sports prosthesis.
3. Hip Disarticulation prosthesis measurement.
4. Hip Disarticulation prosthesis Socket Trimline.
5. Suspension System for Hip Disarticulation Prosthesis.
6. Check-out list for hip Disarticulation Prosthesis.
7. Types of Prosthetic feet.
8. Trans Lumbar Amputation.
9. Prosthetic hip joint placement.
10. Suspension System for Bilateral Stubbies prosthesis.

[LP 0819]

AUGUST 2019

Sub. Code: 2441

BACHELOR IN PROSTHETICS AND ORTHOTICS

FOURTH YEAR

PAPER I – PROSTHETICS SCIENCE – IV

Q.P. Code: 802441

Time: Three Hours

Maximum : 100 Marks

Answer All questions

I. Elaborate on:

(3 x 10 = 30)

1. Check-Out for Hip Disarticulation Prosthesis.
2. Prosthetic Knee Joint used for Child Prosthesis.
3. Tilt table prosthesis.

II. Write notes on:

(8 x 5 = 40)

1. Material Used for Hip Disarticulation Prosthesis.
2. Hip Disarticulation Prosthesis Static alignment.
3. Suspension System for Hip Disarticulation prosthesis.
4. Components used for Stubbies prosthesis.
5. Socket Trim line for Hip Disarticulation Prosthesis.
6. Prosthetic hip joint placement for Hip Disarticulation Prosthesis.
7. Static Alignment for Bilateral Stubbies.
8. Trans Lumbar Bucket Socket.

III. Short answers on:

(10 x 3 = 30)

1. Bench alignment for Hip Disarticulation.
2. Types of Hip Disarticulation Socket.
3. Check-Out for Child Prosthesis.
4. List out Prosthetic Gait for Hip Disarticulation.
5. Types of congenital limb anomalies.
6. Types of Prosthetic Knee joint.
7. Hip Disarticulation Socket Tramline.
8. Types of Prosthetic hip joint.
9. Components used for Sports Prosthesis.
10. Hip Disarticulation Prosthesis Measurement.

[LR 2441]

DECEMBER 2020
(AUGUST 2020 EXAM SESSION)

Sub. Code: 2441

BACHELOR IN PROSTHETICS AND ORTHOTICS

FOURTH YEAR – (Regulation 2012 – 13)

PAPER I – PROSTHETICS SCIENCE – IV

Q.P. Code: 802441

Time: Three Hours

Maximum:100 Marks

Answer All questions

I. Elaborate on:

(3 x 10 = 30)

1. Explain the Gait with Hip Disarticulation Prosthesis.
2. A child aged 4 years was diagnosed with Proximal Femoral Focal Deficiency what will be the prosthetic management, justify by its components.
3. Socket Biomechanics and Alignment of Stubbies prosthesis?

II. Write notes on:

(8 x 5 = 40)

1. Hip disarticulation Socket Biomechanics.
2. Immediate post Surgical Prosthesis.
3. Sports prosthesis for Swimming.
4. Casting technique for Hip Disarticulation Amputee.
5. Various knee joints for Running.
6. Prosthetic considerations for Child Amputee.
7. Tilt Table Prosthesis.
8. Factors to be considered for appropriate Prosthesis.

III. Short answers on:

(10 x 3 = 30)

1. Phantom Pain.
2. Bench alignment for Hip Disarticulation Prosthesis.
3. Placement of hip joint in Hip Disarticulation prosthesis.
4. Placement of Rocker bottom in Stubbies.
5. Types of Scar.
6. Trans lumbar Socket Design.
7. Van nes rotation Plasty.
8. Define Longitudinal Deficiency.
9. Socket forces in midstance in Hip Disarticulation Prosthesis.
10. Objective assessment for Bilateral Shoulder Disarticulation.

[LJ 0816]

AUGUST 2016

Sub. Code :2442

**B.Sc. PROSTHETICS AND ORTHOTICS
FOURTH YEAR
PAPER II – ORTHOTIC SCIENCE – IV**

Q.P. Code: 802442

Time: Three Hours

Maximum : 100 Marks

Answer All questions

I. Elaborate on:

(3 x 10 = 30)

1. Explain about Boston Brace.
2. Biomechanics of Knight Taylor Brace.
3. Cervical Halo Brace parts and functions.

II. Write notes on:

(8 x 5 = 40)

1. Biomechanics of Milwaukee Brace.
2. Explain about Intervertebral Disc.
3. Orthotic Management for Scoliosis.
4. Boston Brace Trimlines.
5. Spinal Orthosis checkout Procedure.
6. Prescription criteria for Thoracolumbosacral Orthosis (TLSO).
7. Draw sketch of a Typical Vertebrae and mention its parts.
8. Corsets Placement and functions.

III. Short answers on:

(10 x 3 = 30)

1. Soft Cervical Collar Measurement.
2. Knight Taylor Brace Diagram and Parts.
3. Types of Cervical Poster Appliance.
4. What is Kyphosis?
5. How to measure Cobb's Angle?
6. Pelvic Girdle.
7. Cervical Vertebrae.
8. Cow horn brace.
9. Anterior Hyperextension Control Brace.
10. What is Torticollis?

[LK 0217]

FEBRUARY 2017

Sub. Code :2442

**B.Sc. PROSTHETICS AND ORTHOTICS
FOURTH YEAR
PAPER II – ORTHOTIC SCIENCE – IV**

Q.P. Code: 802442

Time: Three Hours

Maximum : 100 Marks

Answer All questions

I. Elaborate on:

(3 x 10 = 30)

1. Explain about Cervical two Poster Appliance.
2. Biomechanics of Knight Taylor Brace.
3. Explain about Orthotic Management of Kyphosis.

II. Write notes on:

(8 x 5 = 40)

1. Explain about Pelvic Girdle.
2. How to measure Cobb's Angle?
3. Explain about Intervertebral Disc.
4. Biomechanics of Cow horn brace.
5. Milwaukee Brace Parts and functions.
6. Explain about Lordosis.
7. Explain briefly about Thoracic Cage.
8. Boston Brace Trim lines.

III. Short answers on:

(10 x 3 = 30)

1. Corsets Placement and functions.
2. What is Scoliosis?
3. Cervical collar Measurements.
4. Parts of Cervical Halo Brace.
5. Pelvic Girdle.
6. Cervical Four Post Appliance functions.
7. What is Spina Bifida?
8. Thoracic Band Alignment and Location.
9. Shoulder Girdle.
10. What is Sternal Pad?

[LL 0817]

AUGUST 2017

Sub. Code :2442

B.Sc. PROSTHETICS AND ORTHOTICS

FOURTH YEAR

PAPER II – ORTHOTIC SCIENCE – IV

Q.P. Code: 802442

Time: Three Hours

Maximum : 100 Marks

Answer All questions

I. Elaborate on:

(3 x 10 = 30)

1. Explain about Boston brace for different level curvature of scoliosis.
2. Write about biomechanics of spine.
3. Explain about HALO brace parts and functions.

II. Write notes on:

(8 x 5 = 40)

1. Negative effects of spinal orthosis.
2. What is SOMI brace? Explain.
3. Write about Sagittal and coronal control lumbosacral orthosis.
4. Functions and trim lines of pelvic girdle in Milwaukee brace.
5. Explain about cob's angle and Ferguson's method.
6. Explain about Jewett TLSO brace.
7. Biomechanics of Milwaukee Brace.
8. Explain about C and S curve.

III. Short answers on:

(10 x 3 = 30)

1. What is spinal realignment?
2. What is Laminectomy?
3. What is discectomy?
4. What is the placement and function of thoracic pad?
5. Indication for William lumbosacral brace.
6. What is Torticollis?
7. Functions of poster orthosis.
8. Functions of vertebral column.
9. Curvature of spine.
10. Contraindication of soft cervical orthosis.

[LN 0818]

AUGUST 2018

Sub. Code: 2442

BACHELOR IN PROSTHETICS AND ORTHOTICS

FOURTH YEAR

PAPER II – ORTHOTIC SCIENCE – IV

Q.P. Code: 802442

Time: Three Hours

Maximum : 100 Marks

Answer All questions

I. Elaborate on:

(3 x 10 = 30)

1. Explain about scoliosis and orthotic treatment methods.
2. Prescription criteria of spinal orthosis.
3. Explain different types of TLSO brace.

II. Write notes on:

(8 x 5 = 40)

1. Draw sketch of a Typical Vertebrae and mention its parts.
2. How to measure Cobb's Angle?
3. Milwaukee Brace Parts and functions.
4. Spinal Orthosis checkout Procedure.
5. Explain about intervertebral disc.
6. Write about poster orthosis.
7. Biomechanical functions of spinal orthosis.
8. Explain about Philadelphia collar.

III. Short answers on:

(10 x 3 = 30)

1. Pelvic band.
2. What is kinesthetic reminder?
3. What is lordosis?
4. What is spondylosis?
5. What is SOMI?
6. Contraindications of Philadelphia collar.
7. What are the positive effects of spinal orthosis?
8. Contraindication of Boston brace.
9. What is the function of trochanteric pad?
10. What is abdominal corset?

[LO 0219]

FEBRUARY 2019

Sub. Code: 2442

BACHELOR IN PROSTHETICS AND ORTHOTICS

FOURTH YEAR

PAPER II – ORTHOTIC SCIENCE – IV

Q.P. Code: 802442

Time: Three Hours

Maximum : 100 Marks

Answer All questions

I. Elaborate on:

(3 x 10 = 30)

1. Boston brace and its biomechanics.
2. Explain about Milwaukee brace.
3. Biomechanics principle of spinal orthosis.

II. Write notes on:

(8 x 5 = 40)

1. Explain the importance of intra-cavity pressure.
2. Types of collar.
3. HALO.
4. Function and biomechanical effect of oblique bar in Williams brace.
5. Tayler knight brace.
6. Kyphotic corrective brace.
7. Explain about posters.
8. Lumbo sacral orthosis and its biomechanics.

III. Short answers on:

(10 x 3 = 30)

1. Pelvic girdle function.
2. Para spinal bar.
3. Para podium.
4. Thoracic vertebrae.
5. Inter vertebral disk.
6. Pelvic traction.
7. Potts spine.
8. CASH brace.
9. RGO and HGO.
10. Cobb's angle.

[LP 0819]

AUGUST 2019

Sub. Code: 2442

BACHELOR IN PROSTHETICS AND ORTHOTICS

FOURTH YEAR

PAPER II – ORTHOTIC SCIENCE – IV

Q.P. Code: 802442

Time: Three Hours

Maximum : 100 Marks

Answer All questions

I. Elaborate on:

(3 x 10 = 30)

1. Explain about C TLSO.
2. Charleston bending brace and its biomechanics function.
3. Cheneau brace.

II. Write notes on:

(8 x 5 = 40)

1. Brace for compression fracture of lumber spine.
2. Rigid braces for lower back pain.
3. Cow horn brace.
4. Brace for scoliotic curve at T6.
5. Inter vertebral disc function.
6. Two and four posters.
7. Jewett brace.
8. Check out procedure of C TLSO.

III. Short answers on:

(10 x 3 = 30)

1. Spondylolisthesis.
2. Biomechanics of LS corset.
3. Knight brace.
4. Soft collar.
5. Lumbo sacral spine.
6. Neck traction.
7. Chair back orthosis.
8. Coccyx pillow.
9. Swivel walker.
10. Primary curve and secondary curve.

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

[LR 2442]

DECEMBER 2020

Sub. Code: 2442

(AUGUST 2020 EXAM SESSION)

BACHELOR IN PROSTHETICS AND ORTHOTICS

FOURTH YEAR – (Regulation from 2012 – 2013)

PAPER II – ORTHOTIC SCIENCE – IV

Q.P. Code: 802442

Time: Three Hours

Maximum : 100 Marks

Answer All Questions

I. Elaborate on:

(3 x 10 = 30)

1. Biomechanics of Spine.
2. Explain Reciprocating Gait Orthosis.
3. Dennis classification of Fracture.

II. Write notes on:

(8 x 5 = 40)

1. Orthotic management for Lumbar Spodylolisthesis. Explain.
2. Pelvic Traction and its uses.
3. Biomechanics of Intervertebral Disc.
4. Weight relieving Orthosis.
5. Whiplash fracture and its Orthotic Management.
6. Name different types of TLSO and explain any One type of TLSO.
7. Check out procedure for Thoracic Lumbosacral Brace.
8. Biomechanics of Lumbo Sacral brace.

III. Short answers on:

(10 x 3 = 30)

1. Ortho Prosthesis.
2. Principles of Fracture Bracing.
3. Chance Fracture.
4. What is Sternal Pad?
5. Soft Cervical Collar measurement.
6. Torticollis.
7. Righting Reflex.
8. Silicon Prosthesis.
9. Function of shoulder support in Milwaukee Brace.
10. Three post collar.

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

[AHS 0122]

JANUARY 2022
(FEBRUARY 2021 & AUGUST 2021 EXAM SESSION)

Sub. Code: 2442

BACHELOR IN PROSTHETICS AND ORTHOTICS
FOURTH YEAR – (Regulation 2012 – 2013)
PAPER II – ORTHOTIC SCIENCE – IV
Q.P. Code: 802442

Time: Three Hours

Answer ALL Questions

Maximum: 100 Marks

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

1. Milwaukee brace.
2. Biomechanics of Boston brace.
3. Orthotic management of kyphosis.

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

1. Knight Taylors brace.
2. Lumbosacral extension control orthosis.
3. Halo brace.
4. Cowhorn orthosis.
5. Biomechanics of corset.
6. SOMI brace.
7. Four poster orthosis.
8. Hard collar.

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

1. Importance of traction in spinal orthotics.
2. Soft collar.
3. Philadelphia collar.
4. Scoliosis.
5. Lordosis.
6. Parapodium.
7. Motions of spine.
8. Advantages and disadvantage of silicone prosthesis.
9. Corrective force for double curve in scoliosis.
10. Jewett brace.
