

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

[AHS 0122]

JANUARY 2022

Sub. Code: 2481

(FEBRUARY 2021 & AUGUST 2021 EXAM SESSION)

BACHELOR IN PROSTHETICS AND ORTHOTICS

FOURTH YEAR

PAPER I – PROSTHETICS SCIENCE – IV

Q.P. Code: 802481

Time: Three Hours

Answer ALL Questions

Maximum: 100 Marks

I. Elaborate on:

(3 x 10 = 30)

1. What is Van Nes rotation plasty? Explain its prosthetic management.
2. Explain the various types of hip joint for hip disarticulation prosthesis.
3. What are the various stages of prosthetic fitting for bilateral trans femoral amputee.

II. Write notes on:

(8 x 5 = 40)

1. Sports adaptations for snow skiing.
2. Bench alignment for stubbies.
3. Prosthetic foot for running.
4. Suspension system for stubbies.
5. Socket consideration for trans lumbar socket.
6. Types of transfemoral socket.
7. Prosthetic consideration for bilateral shoulder disarticulation.
8. Check out procedure for hip disarticulation prosthesis.

III. Short answers on:

(10 x 3 = 30)

1. Suspension system for trans lumbar prosthesis.
2. Tilt table prosthesis.
3. Define sports prosthesis.
4. Consideration for snow skiing prosthesis.
5. Socket forces during initial contact in hip disarticulation prosthesis.
6. Phantom limb sensation.
7. Objective assessment for appropriate prosthesis.
8. Proximal femoral focal deficiency.
9. Types of through hip prosthesis.
10. Short notes on different activity level.

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

[AHS 0922]

SEPTEMBER 2022

Sub. Code: 2481

(FEBRUARY 2022 & AUGUST 2022 EXAM SESSIONS)

BACHELOR IN PROSTHETICS AND ORTHOTICS

FOURTH YEAR (Regulation from 2017-2018)

PAPER I – PROSTHETICS SCIENCE - IV

Q.P. Code : 802481

Time: Three hours

Answer ALL Questions

Maximum: 100 Marks

I. Elaborate on:

(3 x 10 = 30)

1. Discuss gait analysis in hip disarticulation prosthesis user with neat sketches.
2. Explain International Organization of Standardization classification criteria for congenital anomalies. Discuss prosthetic management of tibial hemimelia with alignment and fabrication process in details.
3. Define Hemipelvectomy. Explain in details about the assessment and fabrication of Canadian type hip disarticulation prosthesis with neat sketch.

II. Write notes on:

(8 x 5 = 40)

1. Developmental prosthesis in toddlers.
2. Types of Prosthetic hip joints.
3. Goals of Trans-lumbar socket design.
4. Sports prostheses for Golf.
5. Effect of lowering COG in bilateral amputees with neat sketch.
6. Check out procedure for hip disarticulation prosthesis.
7. Difference between Canadian hip disarticulation prosthesis and Tilt-table hip disarticulation prosthesis with neat sketch.
8. Biomechanical difference between stubbies and full-length prosthesis.

III. Short answers on:

(10 x 3 = 30)

1. Running blades.
2. Torque absorber.
3. Functional characteristics of prosthetics feet in hip disarticulation prosthesis.
4. Veteran Administration Prosthetic Center swimming leg.
5. Diagonal hip disarticulation socket with neat sketch.
6. Lateral trunk bending gait in hip disarticulation prosthesis.
7. Early post-operative prosthesis.
8. Trimlines of Hemipelvectomy Socket.
9. Mauch Swing'N'Stance Knee Joint.
10. Cheetah foot.

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

[AHS 1123]

NOVEMBER 2023

Sub. Code: 2481

BACHELOR IN PROSTHETICS AND ORTHOTICS

FOURTH YEAR (Regulation 2017-2018 onwards)

PAPER I – PROSTHETICS SCIENCE - IV

Q.P. Code: 802481

Time: Three hours

Answer ALL Questions

Maximum: 100 Marks

I. Elaborate on:

(3 x 10 = 30)

1. Discuss the three stage casting technique for Canadian type hip disarticulation prosthesis. Explain the procedure to locate the geometrical position of prosthetic hip joint in Canadian type hip disarticulation prosthesis with neat sketches.
2. Discuss the prosthetic management for a new bilateral amputee (48 years old) due to a train accident three years ago, with right side Syme's amputation with intact distal end-bearing condition and left side standard length Transfemoral amputation. Give rationale for prescription of each prosthetic component.
3. Define Van Nes Rotation plasty. Explain prosthetic management for Rotation Plasty in details with neat sketch.

II. Write notes on:

(8 x 5 = 40)

1. Rationale of trimlines of Canadian hip disarticulation prosthetic socket with neat sketch.
2. Sports prosthesis for Swimming.
3. Radcliffe's theory for "Zone of Stability" with neat sketch.
4. Aitkin classification of Longitudinal deficiency of the femur.
5. Coronal plane stability in hip disarticulation prosthesis during stance phase with neat sketch.
6. Types of classification systems for lower limb congenital limb deficiencies.
7. Placement of prosthetic hip joint in Hemipelvectomy with neat sketch.
8. Carlson and Wood's Trans lumbar prosthesis with neat sketch.

III. Short answers on:

(10 x 3 = 30)

1. Letts and Vincent classification of fibular deficiencies.
2. Saucer type Hip disarticulation prosthesis.
3. Vertical shock absorber.
4. Silicone Bikini socket.
5. Suspension for bilateral transfemoral prosthesis.
6. 7E7 Modular prosthetic hip joint.
7. Prosthetic consideration for lower extremity child amputee.
8. Suspension system for Hip disarticulation prosthesis.
9. Factors affecting instability of prosthetic hip joint during gait.
10. Ossur Flex-Run foot.

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

[AHS 0424]

APRIL 2024

Sub. Code: 2481

BACHELOR IN PROSTHETICS AND ORTHOTICS

FOURTH YEAR - (Regulation 2017-2018 onwards)

PAPER I – PROSTHETICS SCIENCE - IV

Q.P. Code: 802481

Time: Three hours

Answer ALL Questions

Maximum: 100 Marks

I. Elaborate on:

(3 x 10 = 30)

1. Prosthesis for Congenital anomalies.
2. Trans Lumber Prosthesis.
3. Sport-Specific Prostheses.

II. Write notes on:

(8 x 5 = 40)

1. Bilateral Prosthesis.
2. Through hip Gait deviations.
3. Prosthesis for Child amputee.
4. Immediate post surgical fittings.
5. Hip disarticulation Prosthesis Check out procedures.
6. Hamanishi classification system for femoral deficiency.
7. International Organization for Standardization (ISO) designation of levels of transverse deficiencies of upper and lower limbs.
8. Hip disarticulation Prosthesis donning and doffing techniques.

III. Short answers on:

(10 x 3 = 30)

1. Difference between internal hemipelvectomy and external hemipelvectomy.
2. Aitken classification of femoral deficiency.
3. Loading response phase of gait in a patient with a hip disarticulation prosthesis.
4. Removable Rigid Dressings.
5. Prosthetic treatment of sacral agenesis.
6. Hindquarter amputation.
7. Knee valgus in a femoral deficiency.
8. Lower limb phocomelia.
9. Rotation plasty.
10. Amniotic band syndrome.
