



**AMREF INTERNATIONAL UNIVERSITY
SCHOOL OF MEDICAL SCIENCES
DEPARTMENT OF REHABILITATION MEDICINE
BACHELOR OF SCIENCE IN PHYSIOTHERAPY
END OF SEMESTER EXAMINATIONS
DECEMBER 2024 SERIES
PHT 334: PROSTHETICS AND ORTHOTICS
(SUPPLEMENTARY/SPECIAL EXAMINATIONS)**

TIME: 2 HOURS

INSTRUCTIONS:

1. This examination is out of **70 Marks**.
2. The examination comprises of **THREE (3)** sections.
 - **Section I:** Multiple Choice Questions (30 Marks)
 - **Section II:** Short Answer Questions (20 Marks)
 - **Section III:** Long Answer Questions (20 Marks)
3. Attempt **ALL** Questions.
4. Do Not write on the question paper – for roughwork use the back of your booklet and cancel it out after finishing.

PHT 334: Prosthetics and Orthotics Examination

Paper B

SECTION 1: MCQs (30 marks)

1. A Syme amputation is:
 - A. A disarticulation at the tarsal metatarsal
 - B. A disarticulation at the tibiotalar joint
 - C. A disarticulation through the talonavicular joint
 - D. A disarticulation at the calcaneocuboid joint
2. More energy is demanded from the cardiovascular and pulmonary systems for prosthetic gait training in patients with
 - A. Foot amputation
 - B. Hip disarticulation
 - C. Below knee amputation
 - D. Above knee amputation
3. When training above knee amputee on a prosthetic, which leg should descend stairs first?
 - A. Prosthetic limb first.
 - B. Both limbs
 - C. Non-prosthetic limb
 - D. all of the above
4. In order to strengthen the gluteal muscles and contract the muscles of the residual limb in an amputee, the therapist should give?
 - A. Stepping on obstacles
 - B. Lateral weight shift exercises
 - C. Stepping on a stool
 - D. Backward weight shift.
5. While training prosthetic patient on stool stepping, how will you progress the exercise:
 - A. By increasing the height of the stool
 - B. By increasing the hand support required
 - C. Doing the movement faster,
 - D. Giving a smaller step
6. While training ambulation in a prosthetic amputee, when should you introduce walking aids?
 - A. When the patient has mastered some good gait pattern on the parallel bars
 - B. When the patient is confident and can make a few steps outside the parallel bars
 - C. When the patient is stable on the ground and a good gait pattern on the parallel bars
 - D. When the patient is confident and has a good gait pattern on the parallel bars
7. What is the purpose of wrapping the stump more tightly on the distal than the proximal part?
 - A. To achieve optimum pressure
 - B. To achieve cylindrical shape
 - C. To achieve a conical shape
 - D. To achieve cosmetics effects
8. In above-the-knee amputations, bandages should be applied to the?

- A. Pelvis
 - B. hip
 - C. femur
 - D. trunk
9. What is the indication of a temporary prosthesis?
- A. To help train the patient prior to the wearing of a permanent prosthesis
 - B. to prepare the patient psychologically prior to the wearing of a permanent prosthesis
 - C. to assist in shaping and shrinking of the stump prior to the wearing of a permanent prosthesis
 - D. all of the above
10. To ensure good extension of the hip joint is maintained in above knee amputation;
- A. The patient must lie in prone
 - B. The patient must lie in supine
 - C. The patient must lie in side lying
 - D. The patient must lie in half
11. Hip joint abduction and external rotation deformities are commonly seen in?
- A. Below-knee amputation
 - B. Foot amputation
 - C. Above knee amputation
 - D. Below elbow amputation
12. Which is the recommended strength in residual limb to begin prosthetic training?
- A. MMT >3/5 extensors
 - B. MMT >4/5 extensors
 - C. MMT >5/5 extensors
 - D. MMT >2/5 extensors
13. Which one of the following is not critical in oedema reduction in amputee management?
- A. Pain reduction through desensitisation and reducing stump interstitial pressure.
 - B. Wound healing by reducing stump interstitial pressure
 - C. Preventing wound dehiscence, and improving circulation.
 - D. None of the above
14. Which advice is appropriate to above knee amputee who prefer a lateral position when sleeping?
- A. The unaffected side should be facing downward
 - B. The affected side should be facing downward
 - C. The unaffected side should be facing upward
 - D. The affected side should be facing upward
15. Spinal Orthoses, are indicated to;
- A. Correct or control spinal deformities and injuries
 - B. provide immobilisation
 - C. Support to spinal injuries
 - D. All of the above
16. Ankle foot orthosis is used as supportive devices and aid for ambulation through different gait stages by:

- A. Providing foot clearance,
 - B. Improve balance
 - C. Help with weak musculature of lower legs,
 - D. All of the above
17. When fitting ankle foot orthoses, pressure point around the fibular head should be considered to avoid
- A. Injury to the tibial nerve.
 - B. Injury to the pudendal nerve.
 - C. Injury to the peroneal nerve.
 - D. Injury to the femoral nerve.
18. The functional primary goal for spinal orthoses is?
- A. Provides support and stabilisation
 - B. Prevention of deformity
 - C. Reduce pain by limiting motion
 - D. Assist with healing post-surgery
19. Philadelphia collar are commonly recommended for?
- A. unstable cervical fractures
 - B. cervical spinal dislocation
 - C. stable cervical fractures
 - D. cervical subluxation
20. What is the indication of a halo brace?
- A. Pre-surgical correction
 - B. Post-operative fusion support.
 - C. to conserve neck mobility
 - D. All of the above
21. The appropriate orthosis recommended for the treatment of kyphosis is?
- A. Cervico-Thoracolumbarsacral Orthosis
 - B. Halo brace
 - C. Hard collar
 - D. Thorocolumbar corset
22. Lumbar sacral corsets are mainly indicated for?
- A. Surgical lumbar alignment
 - B. Pain relief
 - C. cosmetics
 - D. Reduces kyphosis lordosis
23. Which of the following is not an indication of foot orthosis?
- A. Prevent deformity.
 - B. Provide a better contact of the sole of the foot with the ground.
 - C. To correct alignment issues
 - D. Provide support for the foot.
24. Which orthoses will you recommend in early post-operative phase to provide better support to the ankle and the knee?
- A. knee immobilizer

- B. knee-ankle foot orthosis
 - C. ankle foot orthoses
 - D. foot orthoses
25. The resting wrist and hand splints should be maintained at what degrees?
 - A. 20-30 degrees extension, the metacarpal phalangeal joint in 20 degrees flexion
 - B. 40 degrees extension, the metacarpal phalangeal joint in 40 degrees flexion
 - C. 10-20 degrees extension, the metacarpal phalangeal joint in 60 degrees flexion
 - D. 5-10 degrees extension, the metacarpal phalangeal joint in 20 degrees flexion
 26. In leg length discrepancies, the purpose for shoe raise is?
 - A. To help realign the pelvis and improve functional capacity
 - B. help realign the lower extremity and improve functional capacity
 - C. help realign the trunk and improve functional capacity
 - D. help realign the hips and improve functional capacity
 27. Femoral and tibial torsional deformities are best managed through?
 - A. Surgical Procedures
 - B. Orthotics
 - C. Conserveptive
 - D. Medical
 28. Hinged ankle foot orthosis have a mechanical ankle joint that is used for?
 - A. Preventing eversion
 - B. Prevention in eversion
 - C. Preventing plantar flexion,
 - D. Preventing full dorsiflexion
 29. What should you consider in the assessment of patient who already has a prosthesis?
 - A. Ability to don / doff the prosthesis correctly,
 - B. Ability to monitor areas of pressure
 - C. Ability to use the right gait pattern
 - D. All of the above
 30. What is a prosthesis?
 - A. Artificial braces and splints
 - B. Artificial limb
 - C. A natural limb
 - D. A body support

SECTION II: SHORT ANSWER QUESTIONS 20 MARKS

1. State five assessment considerations must be taken into account before commencing prosthesis rehabilitation 5 marks
2. Outline 5 ways in which a good attitude and motivation enhance effectiveness in the utilization of a prosthesis.
3. Outline 5 Methods of minimizing phantom limb pain. 5 marks
4. List the advantages of lower limb orthoses 5 marks

Section 3: Long essay questions (30 marks)

1. Describe sensitization in regards to stump management. 10 marks
2. Discuss landmarks factors to considerer in measuring stump length. 10 marks
3. Discuss the possible Complications of using orthoses. 10 marks

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