



AMREF INTERNATIONAL UNIVERSITY

SCHOOL OF MEDICAL SCIENCE

DEPARTMENT OF REHABILITATION MEDICINE

BACHELOR OF SCIENCE IN PHYSIOTHERAPY

END OF MAY-AUGUST 2026 TRIMESTER EXAMINATIONS

UNIT CODE: PHT 312

UNIT NAME: Sports physiotherapy I

DATE: 7th August 2026

TIME: TWO HOURS

START: 6pm STOP : 8pm

INSTRUCTIONS (Online examinations)

1. This exam is marked out of 70 marks
2. This online exam shall take 2 Hours
3. Late submission of the answers will not be accepted
4. Ensure your web-camera is on at all times during the examination period
5. No movement is allowed during the examination
6. Idling of your machine for 5 min or more will lead to lock out from the exam
7. The Learning Management System (LMS) has inbuilt integrity checks to detect cheating
8. Any aspect of cheating detected during and or after the exam administration will lead to nullification of your exam

9. In case you have any questions call the invigilator for this exam on Tel. 0705833434 and or the Head of Department on Tel 0720491032
10. For adverse incidences please write an email to: amiu.examinations@amref.ac.ke

All questions in this exam paper are MCQs. Attempt all the questions.

1. Based on the Physical Stress Theory, stress to a biological tissue that is less than the maintenance level of stress leads to:
 - A. Atrophy
 - B. Death
 - C. Hypertrophy
 - D. Injury
2. Your patient is a long-distance runner and presents to PT with a tibial stress fracture. How would you describe the physical stress that has been applied to the tibia?
 - A. Stress was lower than the maintenance level
 - B. Stress was higher than the maintenance level
 - C. Stress was significantly higher than the maintenance level
 - D. Stress was at the maintenance level
3. Which of the following types of extreme physical stress can cause tissue injury or death?
 - A. Low magnitude, long time
 - B. Moderate magnitude, many times
 - C. High magnitude, short time
 - D. All of the above
4. During the acute or “destruction” phase of soft tissue injury, physiotherapy should include:
 - A. Stretching, Ice, Elevation, Rest
 - B. Protection, Ice, Elevation, Rest

- C. Stretching, Heat, Elevation, Rest
 - D. Protection, Heat, Elevation, Rest
5. A grade II tendon injury presents with:
- A. Pain during activity that impairs performance and resolves between bouts of activity
 - B. Minimal pain during activity that doesn't impair performance
 - C. Pain that impairs performance and doesn't resolve between bouts of activity
 - D. Pain after activity that resolves between bouts of activity
6. Bone fracture healing, most commonly, occurs through direct (primary) bone healing.
- A) True
 - B) False
7. Which of the following statements is INCORRECT?
- A. Indirect bone healing does not require anatomical alignment of the bone.
 - B. Indirect bone healing involves the formation of a soft callus around the fracture.
 - C. Small amounts of movement and weightbearing are acceptable with direct bone healing.
 - D. Hard callus is formed when the cartilage of the soft callus is replaced with new bone.
9. When considering fitness and performance testing of athletes, which of the following are potential benefits?
- A. Predict future performance and/or athlete identification
 - B. Identify weaknesses that need to be addressed
 - C. Evaluate the effectiveness of a given training program
 - D. Evaluate and monitor aspects of health and skill related fitness
 - E. Placement of the athlete in an appropriate training group
 - F. All of the above
 - G. All of the above except "A"
 - H. All of the above except "E"
10. A valid test means that the given test will provide repeatable results.
- A) True
 - B) False

11. It is critical that a given test has appropriate normative data otherwise it is of little value in the athletic training model.
- A) True
 - B) False
12. Of the tests that we covered in class which of the following tests would be **best** for assessing an athletes' anerobic power?
- A. Cooper 12-minute run for distance
 - B. Balke treadmill test
 - C. Astrand bike test
 - D. 1 repetition max test
 - E. Vertical jump test
 - F. Wingate 30 second test
13. Of the tests that we covered in class which of the following tests would be **BEST** for assessing aerobic capacity in footballers?
- A. Cooper 12-minute run for distance
 - B. 1 mile run test
 - C. The Bleep/Beep test
 - D. Astrand bike test
 - E. Six-minute treadmill test
14. The Stork test measures ...
- A. Anaerobic capacity
 - B. Agility
 - C. Flexibility
 - D. Balance
 - E. Coordination
 - F. Reaction time
15. The Ruler drop measures ...
- A. Anaerobic capacity
 - B. Agility
 - C. Flexibility
 - D. Balance
 - E. Coordination
 - F. Reaction time

16. The Shark drill test measures ...

- A. Anaerobic capacity
- B. Agility
- C. Flexibility
- D. Balance
- E. Coordination
- F. Reaction time

18. Which of the follow are considered domains of Sports Medicine?

- A. Biomechanical
- B. Environmental
- C. Nutritional
- D. Pathological
- E. Physiological
- F. Psychological
- G. All of the above

19. Which of the follow **is not** considered an objective of the “Pre-Season Evaluation/Screening”?

- A. Act as a screening process
- B. Determine correctible conditions
- C. Determine current health status
- D. Discover preexisting conditions
- E. Meet legal and insurance requirements
- F. All of the above are considered objectives

20. Regarding passing/failing the “Pre-Season Evaluation/Screening”, the physician is the final arbitrator. This should be in consultation with the rest of the medical team and the individual.

- A) True
- B) False

21. After going through their “Pre-Season Evaluation/Screening” an athlete is identified as “Passed with Recommendations”. “Passed with Recommendations” means that they must be supervised but may participate in Collision/Contact sports.

- A) True
- B) False

22. Wrestling is considered a Limited-Contact sport.

- A) True
- B) False

23. In general, **when assessing physical performance**, a given test should not require any **sport specific technical competence** on the part of the athlete.

- A) True
- B) False

24. To ensure _____, physical performance test procedures should be strictly standardized in terms of administration, organization and environmental conditions.

- A. Accuracy
- B. Honesty
- C. Reliability
- D. Specificity
- E. Validity

25. Physical performance tests that do not have associated normative data are of limited value.

- A) True
- B) False

26. The VO₂max achieved with cycle ergometer is _____ as compared to the treadmill.

- A. Greater
- B. Lesser
- C. The same

27. For any given workload, heart rate is found to be greater when exercising in aquatic environment versus a comparable intensity of work on land.

- A) True
- B) False

28. When using body mass index, ethnicity/race do not impact the cut offs for determining lean, normal, overweight, and obese.

- A) True
- B) False

29. Steady state exercise is synonymous with submaximal exercise workloads and is representative of a primarily aerobic metabolism.

- A) True
- B) False

30. Given that the Exercise Pressor Response is invoked by muscle contractions; which of the following is not correct?

- A. There is generalized vasoconstriction in nonactive skeletal muscle
- B. Myocardial contractility is increased
- C. Heart rate is increased
- D. Diastolic blood pressure will increase
- E. Cardiac output is decreased
- F. The magnitude of the response is proportional to the intensity of the exercise

31. As a rule of thumb, how many repetitions should someone perform at an intensity of 60% of their 1RM?

- A. 5 reps
- B. 10 reps
- C. 15 reps
- D. 20 reps
- E. 25 reps

32. The HR response is influenced by Age, body position, fitness, type of activity, medications, environmental conditions, and blood volume.

- A) True
- B) False

33. Maximal heart rate remains consistent from day to day, but decreases slightly year to year; that said maximal heart is trainable and can increase given a high intensity endurance training program.

- A) True
 - B) False
34. End diastolic volume is affected by the following, which of the following is incorrect?
- A. Peripheral vasoconstriction
 - B. Blood pressure
 - C. Skeletal muscle pump
 - D. Blood volume
 - E. Respiratory muscle pump
35. Cardiovascular drift is a function is the sudden increase in heart rate and stroke volume during prolonged exercise despite no change in workload.
- A) True
 - B) False
36. With a well-constructed endurance training program, the rate at which heart rate will return to near resting levels quickens.
- A) True
 - B) False
37. With a well-constructed muscular strength training program, improvements in 1RM will be a result of both skeletal muscle hypertrophy and neuromuscular adaptations.
- A) True
 - B) False
38. The face validity of a sport performance test is he extent to which test scores are associated with some other measure of the same ability.
- A) True
 - B) False
39. When selecting sports performance testing it is more critical to consider that the test is sport specific versus the skill level, fitness level and age of the athletes being evaluated.
- A) True
 - B) False

40. When determining the order of the items to be included in a test battery, typically sprint/anaerobic fatiguing type tests are placed last.
- A) True
 - B) False
41. The personal and family history of the athlete has been shown to be a potentially sensitive tool than the physical exam.
- A) True
 - B) False
42. When considering fitness and performance testing of athletes, which of the following are potential benefits?
- A) Predict future performance and/or athlete identification
 - B) Identify weaknesses that need to be addressed
 - C) Evaluate the effectiveness of a given training program
 - D) Evaluate and monitor aspects of health and skill related fitness
 - E) Placement of the athlete in an appropriate training group
 - F) All of the above
43. A valid test means that the given test will provide repeatable results.
- A) True
 - B) False
44. It is critical that a given test has appropriate normative data otherwise it is of little value in the athletic training model.
- A) True
 - B) False
45. Of the tests that we covered in class which of the following tests would be best for assessing an athlete's anaerobic power?
- A) Cooper 12-minute run for distance
 - B) Balke treadmill test
 - C) Astrand bike test
 - D) 1 repetition max test
 - E) Vertical jump test
 - F) Wingate 30 second test
46. Of the tests that we covered in class which of the following tests would be **best** for assessing an athlete's aerobic capacity?
- A) Cooper 12-minute run for distance
 - B) 1 mile run test
 - C) Standing jump test
 - D) Running based sprint test
 - E) Wingate 30 second test

47. Of the tests that we covered in class which of the following tests would be **best** for assessing aerobic capacity in footballers?

- A) Cooper 12-minute run for distance
- B) 1 mile run test
- C) The Bleep test
- D) Astrand bike test
- E) Balke treadmill test

48. The Stork test measures ...

- A) Anaerobic capacity
- B) Agility
- C) Flexibility
- D) Balance
- E) Coordination
- F) Reaction time

49. The Ruler drop measures ...

- A) Anaerobic capacity
- B) Agility
- C) Flexibility
- D) Balance
- E) Coordination
- F) Reaction time

50. The Shark drill test measures ...

- A) Anaerobic capacity
- B) Agility
- C) Flexibility
- D) Balance
- E) Coordination
- F) Reaction time

Section B: Essay Questions. Answer any one of two the questions (20 Marks)

1. Discuss the evaluation and management of a sprained ankle sustained during a football match. Describe the application of the TOTAPS procedure in your answer.
2. Discuss the preventive and treatment strategies used in managing sports injuries, giving examples from at least three types of sports.

AMU