



**AMREF INTERNATIONAL UNIVERSITY  
SCHOOL OF MEDICAL SCIENCE  
DEPARTMENT OF REHABILITATION MEDICINE  
BACHELOR OF SCIENCE IN PHYSIOTHERAPY  
END OF MAY-AUGUST 2025 TRIMESTER EXAMINATIONS**

**UNIT CODE: PHT 312                      UNIT NAME: Sports physiotherapy I**

**DATE:                      8<sup>th</sup> August 2025**

**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](mailto: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' 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
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. That said it 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 VO<sub>2</sub>max 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 be able to 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. Age, body position, fitness, type of activity, medications, environmental conditions, and blood volume all influence the HR response
- 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 one 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 the 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 athletes' 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
51. 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
52. 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
53. 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
54. 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
55. 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
56. Bone fracture healing most commonly occurs through direct (primary) bone healing.
- A) True
  - B) False
57. 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.
58. Physical activity improves the ability of the immune system to respond to pathogens.
- A) True
  - B) False
59. Should athletes exercise during their 14 days of isolation after receiving a (+) COVID-19 test?
- A) Yes, but only low intensity exercise.
  - B) Yes, as long as they can tolerate it.
  - C) No
  - D) None of the above
60. How long do athletes with moderate COVID-19 infection need to wait before starting a graded Return to Play (RTP) program?
- A) 14 days from their (+) test
  - B) 14 days from their (+) test and 10 days after symptom resolution
  - C) 3-6 months
  - D) None of the above

61. You are working with a rugby player who had a mild COVID-19 infection. You are on week 2 of the return to play program and the athlete develops new-onset chest pressure and fatigue while jogging during practice. What action would you take?
- A) Ask the athlete to rest for 15 minutes then return to practice.
  - B) Tell the athlete to take the day off and return to practice tomorrow.
  - C) Refer the athlete to be evaluate by the team physician after practice.
  - D) Tell the athlete to discontinue all physical activity and immediately be evaluated by the team physician.
62. With the above athlete, which of the following conditions could be contributing to their symptoms?
- A) Asthma
  - B) COPD
  - C) Deep Vein Thrombus
  - D) Myocarditis
63. Which of the following athletes DO NOT need a physician's evaluation and clearance before starting a graded Return to Play program?
- A) 23yo basketball player with mild infection
  - B) 27yo runner with moderate infection
  - C) 67 yo soccer player with mild infection
  - D) 12 yo rugby player with moderate infection
64. When can a recreational athlete who had mild COVID-19 infection can return to moderate intensity exercise?
- A) Following an evaluation by a physician
  - B) After having a 12-lead ECG that shows no pathology
  - C) After 14 days of isolation
  - D) After 14 days of isolation and 10 days after symptom resolution