



**AMREF INTERNATIONAL UNIVERSITY
SCHOOL OF MEDICAL SCIENCE
DEPARTMENT OF REHABILITATION MEDICINE
BACHELOR OF SCIENCE IN PHYSIOTHERAPY
END OF SEPT-DECEMBER 2024 TRIMESTER EXAMINATIONS**

UNIT CODE: PHT 118

UNIT NAME: Fitness and wellness (Special Exam)

Direct entry

DATE: Day/ Date/ AUGUST

TIME: TWO HOURS

START: 0:00

STOP : 0:00

INSTRUCTIONS (physical exams)

- 1. Do not write on this question paper**

(Marks and questions distribution as per program curriculum.)

INSTRUCTIONS (Online examinations)

1. This exam is marked out of 70 marks
2. This Examination comprises 3 Sections
3. This online exam shall take 2 Hours
4. Late submission of the answers will not be accepted
5. Ensure your web-camera is on at all times during the examination period
6. No movement is allowed during the examination
7. Idling of your machine for 5 min or more will lead to lock out from the exam
8. The Learning Management System (LMS) has inbuilt integrity checks to detect cheating
9. Any aspect of cheating detected during and or after the exam administration will lead to nullification of your exam
10. In case you have any questions call the invigilator for this exam on Tel. 0705833434 and or the Head of Department on Tel 0720491032
11. For adverse incidences please write an email to: amiu.examinations@amref.ac.ke

Section A. Multiple choice questions. (30 Marks)

1. The concept of "general fitness" is most closely related to:
 - A. The ability to perform specific tasks well
 - B. The overall health and well-being of an individual
 - C. The capacity to meet emergency situations
 - D. The resistance to hypokinetic diseases

2. A sprinter would primarily need to improve which skill fitness components to enhance their performance?
 - A. Power and speed
 - B. Balance and coordination
 - C. Reaction time and agility
 - D. All of the above

3. What is the criterion measure of cardiorespiratory fitness?
 - A. Muscle endurance
 - B. Flexibility
 - C. Maximal oxygen uptake (VO₂max)
 - D. Muscle strength

4. Which of the following is NOT a method used to assess body composition?
 - A. Skinfold thickness measurements
 - B. Hydrodensitometry
 - C. Goniometry
 - D. Anthropometric measurements

5. Which of the following statements best describes the relationship between health and wellness?
 - A. Health is a subset of wellness.
 - B. Wellness is a subset of health.
 - C. Health and wellness are interchangeable terms.
 - D. Health and wellness are unrelated concepts.

6. Which of the following is NOT an indicator of social wellness?
 - A. Having good friends
 - B. Bond with family members
 - C. Regular exercise
 - D. Volunteerism

7. Which of the following statements accurately reflects the relationship between mental fitness and mental health?
 - A. Mental fitness is a precursor to mental health.
 - B. Mental health is a prerequisite for mental fitness.
 - C. Mental fitness and mental health are mutually exclusive concepts.

- D. Mental fitness is a component of mental health, contributing to overall well-being.
8. A standing squat is considered a closed kinetic chain exercise because:
- A. The feet are free to move
 - B. The distal segment meets considerable resistance
 - C. The proximal segment is fixed
 - D. The movement is isometric
9. A patient with a recent ankle sprain is instructed to use crutches. This is because when they try to stand, they lose their balance and fall. Which of Newton's laws explains why their body resists the change from being supported by their ankle to being supported by crutches?
- A. Newton's First Law of Motion
 - B. Newton's Second Law of Motion
 - C. Newton's Third Law of Motion
 - D. Law of Conservation of Energy
10. A patient with osteoporosis is at risk of fractures. Which rehabilitation principle, based on the law of gravity, should be emphasized to prevent falls?
- A. Increase the patient's weight
 - B. Decrease the patient's center of gravity
 - C. Increase the patient's height
 - D. Decrease the patient's base of support
11. If accessory motions are restricted, what is likely to occur?
- A. Normal physiological movements will be unaffected.
 - B. Muscles can still be fully rehabilitated.
 - C. Joint compression or distraction will compensate for the restriction.
 - D. Full-range physiological movement will be limited.
12. A key characteristic of implicit learning is:
- A. Dependence on cognitive stages.
 - B. Adaptation to perturbations.
 - C. Progression with increased verbal knowledge.
 - D. Greater automaticity compared to explicit learning.
13. During which stage of learning does the learner become more independent and less reliant on external instructions?
- A. Associative stage
 - B. Autonomous stage
 - C. Cognitive stage
 - D. Retention stage

14. Which phase of motor performance most closely aligns with the autonomous stage of learning?
- A. Acquisition phase
 - B. Retention phase
 - C. Transfer phase
 - D. Practice phase
15. The primary difference between the reflex theory and the hierarchical theory is:
- A. The role of reflexes in motor control.
 - B. The organization of the nervous system.
 - C. The importance of sensory feedback.
 - D. The clinical implications for rehabilitation.
16. Which of the following statements is most accurate regarding the effectiveness of stretching during a warm-up?
- A. Static stretching is consistently shown to reduce the risk of injury.
 - B. Both static and dynamic stretching are equally effective in improving performance.
 - C. There is strong evidence that stretching during a warm-up significantly reduces injury.
 - D. While not well-supported by evidence, some trainers believe stretching can be beneficial.
17. The SAID principle directly relates to the principle of:
- A. Specificity
 - B. Overload
 - C. Progression
 - D. Reversibility
18. Isometric exercises are primarily effective for:
- A. Increasing muscle endurance
 - B. Improving flexibility
 - C. Enhancing cardiovascular fitness
 - D. Increasing muscular strength
19. Which of the following factors can help to mitigate the decline in muscular strength as people age?
- A. Increased sedentary lifestyle
 - B. Reduced caloric intake
 - C. Regular exercise
 - D. Decreased sleep
20. Which of the following statements is INCORRECT regarding cardiorespiratory endurance?
- A. It is essential for preventing injuries.
 - B. It is determined solely by the heart's pumping efficiency.
 - C. It involves the coordinated function of multiple systems.

- D. It is closely related to maximum oxygen consumption.
21. A patient with impaired coordination would likely exhibit difficulty with which of the following tasks?
- A. Performing a simple finger-to-nose test
 - B. Maintaining a stable posture while standing with eyes closed
 - C. Executing a rapid alternating movement, such as tapping the palms of the hands alternately on a table
 - D. All of the above
22. Which of the following is NOT a component of balance control?
- A. Muscular forces
 - B. Cardiovascular function
 - B. Neurological sensory information
 - C. Biomechanical information
23. When developing an exercise program for a sedentary individual, it is recommended to start with:
- A. High-intensity interval training
 - B. 5 days/week of aerobic exercise
 - C. 2-3 days/week of aerobic exercise
 - D. Yoga
24. A patient is aiming to lose weight and has expressed interest in joining a gym. Using the FITT principle, design a comprehensive exercise plan that includes both cardio and strength training components. Consider the patient's current fitness level, goals, and access to gym equipment.
- A. Begin with 30 minutes of cardio and 15 minutes of strength training, 3 days per week. Increase intensity and duration gradually.
 - B. Start with 60 minutes of cardio and 30 minutes of strength training, 5 days per week. Maintain this intensity and duration for the first month.
 - C. Focus solely on cardio for the first 2 months, then introduce strength training.
 - D. Avoid strength training until the patient has lost a significant amount of weight.
25. Junk foods are considered nutrient-dense because they:
- A. Provide adequate vitamins and minerals
 - B. Are low in calories
 - C. Are high in fiber
 - D. Are high in calories and low in nutrients
26. What percentage of total caloric intake is recommended for protein in athletes?
- A. 10-35%
 - B. 20-35%
 - C. 35-50%
 - D. 45-65%

27. Which of the following is a key principle of periodization?
- A. Athletes should train at the same intensity throughout the year
 - B. Conditioning programs should be identical for all athletes
 - C. Conditioning needs vary across different seasons
 - D. Rest and recovery are not important
28. According to the principle of individuality, why do people respond differently to the same training program?
- A. They have different fitness levels.
 - B. They have different health statuses.
 - C. They have different genetic makeup.
 - D. All of the above.
29. If a patient experiences increased pain or swelling during a rehabilitation exercise, the therapist should.
- A. Continue with the exercise
 - B. Increase the intensity of the exercise
 - C. Decrease the intensity of the exercise
 - D. Discontinue the exercise
30. How does the frequency of resistance training differ from aerobic exercise?
- A. Resistance training requires higher frequency
 - B. Resistance training requires lower frequency
 - C. There is no difference in frequency between resistance training and aerobic exercise
 - E. Resistance training requires more rest days between sessions

Section B. Short structured questions. Answer all the questions (20 Marks)

1. State the concave-convex rule (3 Marks)
2. Explain the principle of Specific Adaptation to Imposed Demand (SAID) (3 Marks)
3. James, a 22-year-old college soccer player, recently suffered a knee injury during a game. He is currently undergoing physiotherapy to rehabilitate his knee. James is eager to return to playing but is also feeling frustrated and anxious about his recovery process. State 2 physical fitness components and skill related fitness components that his physiotherapist will pay attention to in order to meet James goals (4 Marks)
4. Margaret, a 68-year-old retired teacher, has been experiencing decreased mobility and balance issues. She has a history of hypertension and has been feeling increasingly isolated due to her reduced activity levels. She has been attending physiotherapy clinic in a near by hospital. State 2 physical fitness and skill related fitness her physiotherapist is applying to improve her quality of life (4 Marks)
5. Explain the Adam's closed loop theory (6 Marks)

Section C. Long structured questions. Answer the question below (20 Marks)

1. Wellness not only involves preventive health related behavior but also a change in thinking and attitude. Discuss the seven dimensions of wellness (20 Marks)

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