



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

UNIT CODE: PHT 118 UNIT NAME: Fitness and wellness

DATE: 11 August 2025

TIME: TWO HOURS

START: 6PM STOP : 8PM

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. Attempt all the questions

1. Which of the following dimensions of wellness includes the ability to be autonomous?
 - A. Environmental
 - B. Financial
 - C. Occupational
 - D. Social

2. A student procrastinates studying for finals due to anxiety. Which wellness dimension is most directly impacted?
 - A. Emotional
 - B. Social
 - C. Physical
 - D. Spiritual

3. According to the transtheoretical model, someone aware of their smoking habit but not intending to change is in what stage?
 - A. Precontemplation
 - B. Contemplation
 - C. Preparation
 - D. Action

4. In behavior modification, self-efficacy refers to:
 - A. Social support
 - B. Personal confidence in ability to change
 - C. Access to professional help
 - D. Past behavior patterns

5. Alex sets a goal to lose 10 lbs in one week. According to SMART goals, this goal is:
 - A. Specific and attainable
 - B. Measurable but unrealistic
 - C. Realistic and time-bound
 - D. Attainable and flexible

6. The overload principle requires that exercise stress must:
 - A. Be low to avoid injury
 - B. Stay the same to maintain adaptation
 - C. Exceed threshold to stimulate adaptation
 - D. Be unpredictable

7. A runner increases mileage each week. This illustrates which principle?
 - A. Specificity
 - B. Progression
 - C. Reversibility

D. Periodization

8. The principle of reversibility implies that:
- A. Fitness cannot be regained after stopping
 - B. Adaptations are permanent
 - C. Training must be reversed monthly
 - D. Gains are lost if training stops
9. Periodization in exercise is most similar to:
- A. Decreasing frequency
 - B. Structured variation over time
 - C. Static routines
 - D. One-time assessments
10. Which of the following is not a health-related component of fitness?
- A. Flexibility
 - B. Coordination
 - C. Cardiorespiratory endurance
 - D. Muscular strength
11. VO₂max measures:
- A. Body's maximum blood volume
 - B. Lung expansion
 - C. Maximum oxygen use
 - D. Anaerobic capacity
12. Greg jogs while maintaining a conversation. This suggests intensity is:
- A. Low to moderate
 - B. Too high
 - C. Anaerobic
 - D. VO₂max level
13. The non-oxidative energy system provides energy for:
- A. 1 hour
 - B. 10 seconds
 - C. 2 minutes
 - D. 4 hours
14. Aerobic energy systems require:
- A. No glucose
 - B. ATP supplements
 - C. Oxygen
 - D. Lactate accumulation

15. The Borg RPE scale estimates:
- A. Heart rate
 - B. VO₂max
 - C. Blood pressure
 - D. Intensity perception
16. Muscular endurance refers to:
- A. Max weight lifted once
 - B. Ability to stretch
 - C. Repetitive low-force exertion
 - D. Sprinting power
17. Type I muscle fibers are:
- A. Fast-twitch glycolytic
 - B. High force, fatigue fast
 - C. Slow-twitch, fatigue resistant
 - D. Only in cardiac muscle
18. Which stretch is performed slowly and held?
- A. Ballistic
 - B. Dynamic
 - C. Static
 - D. PNF
19. Juan injures his back doing bouncing toe-touches. He was likely using:
- A. Static stretching
 - B. Safe dynamic motion
 - C. Ballistic stretching
 - D. Myofascial release
20. Flexibility benefits include all EXCEPT:
- A. Reduced stress
 - B. Improved balance
 - C. Increased VO₂max
 - D. Reduced injury risk
21. A BMI over 30 indicates:
- A. Normal weight
 - B. Underweight
 - C. Obesity
 - D. Healthy fat mass

22. A client has high visceral fat would mostly likely lead to.
- A. Flexibility decline
 - B. Lower injury risk
 - C. Cardiovascular disease
 - D. Improved metabolism
23. The most accurate method of body composition assessment is:
- A. BIA
 - B. Skinfolds
 - C. BMI
 - D. DEXA
24. Essential fat is needed for:
- A. Energy storage
 - B. Hormone production
 - C. Athletic performance
 - D. None of the above
25. Which fat distribution shape has higher CVD risk?
- A. Gynoid
 - B. Apple
 - C. Pear
 - D. Linear
26. Chronic stress is linked to increased risk of:
- A. Flexibility
 - B. Heart disease
 - C. Increased bone mass
 - D. VO₂max
27. Eustress is:
- A. Chronic and harmful
 - B. No stress at all
 - C. Positive and motivating
 - D. Uncontrollable anxiety
28. Which hormone is most associated with stress response?
- A. Insulin
 - B. Testosterone
 - C. Cortisol
 - D. Dopamine

29. The most preventable cause of cancer and heart disease is:

- A. Poor sleep
- B. Low hydration
- C. Tobacco use
- D. Alcohol moderation

30. Which is NOT a risk factor for cardiovascular disease?

- A. Obesity
- B. Sedentary lifestyle
- C. High HDL
- D. Hypertension

SECTION B: SHORT ANSWER QUESTIONS (20 MARKS)

ANSWER ALL QUESTIONS

1. Explain the role of the Transtheoretical Model (TTM) in promoting lasting health behavior change. Include a brief description of at least three stages in your response. (5 MARKS)
2. Describe the principle of specificity in fitness training. Provide an example of how this principle is applied differently in training for a marathon versus training for muscular strength (5 MARKS).
3. Compare and contrast aerobic and anaerobic energy systems. Provide examples of physical activities that primarily use each system (5 MARKS)
4. Describe the FITT principle and explain how it applies to a beginner designing a fitness plan aimed at improving cardiorespiratory endurance (5 MARKS).

LONG ANSWER QUESTIONS (20 MARKS)

ANSWER ALL QUESTIONS

1. Using the principles of behaviour modification and wellness planning, design a personalized 4-week lifestyle intervention for a sedentary college student who wants to reduce stress and improve cardiovascular health (10 MARKS)
2. James M. Olson identifies several psychological barriers that prevent individuals from adopting healthy lifestyles, categorizing them into challenges at the admission of a problem, initial attempts to change, and long-term maintenance. Reflect on a personal or observed instance where an individual struggled to adopt a healthy behaviour (e.g., regular exercise, healthier eating, reducing screen time, improving sleep habits, etc.). Identify at least two specific psychological barriers from Olson's framework that you believe were most prominent in this situation. Describe how these barriers manifested and, drawing directly from the strategies outlined in the article, propose two distinct, actionable strategies that could have been employed to overcome these specific barriers. Explain *why* you believe these strategies would be effective in that particular

context, providing a detailed justification that connects to the article's theoretical underpinnings (10 MARKS).

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