



**AMREF INTERNATIONAL UNIVERSITY
SCHOOL OF MEDICAL SCIENCES
DEPARTMENT OF REHABILITATION MEDICINE
BACHELOR OF SCIENCE IN PHYSIOTHERAPY
END OF TRIMESTER EXAMINATIONS JAN TO APRIL 2026**

UNIT CODE: PHT 412

UNIT NAME: Occupational health and safety

DATE: 10th April 2026

TIME: 2 Hours START: 9:00AM STOP 11:00AM

INSTRUCTIONS

- 1. All students will have two (2) hours to complete the examination**
- 2. It is the student's responsibility to report any page and number missing in this paper.**
- 3. Check that the paper is complete**
- 4. Total number of pages is 6 including the cover.**
- 5. Read through the paper quickly before you start.**

SECTION ONE (Answer all questions in this section)

1. Which of the following is a primary duty of occupiers under Kenya's Occupational Safety and Health Act (OSHA) 2007?
 - A) To report all workplace accidents only when they result in fatal injuries
 - B) To ensure the safety, health, and welfare of all persons at the workplace
 - C) To delegate full responsibility for safety compliance to safety officers
 - D) To provide compensation directly to injured employees without statutory procedures

2. What category of occupational hazard includes exposure to solvents, adhesives, paints, and toxic dusts?
 - A) Physical hazards
 - B) Chemical hazards
 - C) Biological hazards
 - D) Ergonomic hazards

3. In industrial settings, which hazard is most likely to cause burns, respiratory problems, or chronic health issues like cancer?
 - A) Prolonged standing
 - B) Excessive workplace noise
 - C) Exposure to hazardous chemical agents
 - D) Inadequate workstation design

4. Under OSHA 2007 in Kenya, what must an occupier prepare to outline their approach to safety?
 - A) An annual workplace inspection schedule
 - B) A written safety and health policy statement
 - C) A risk register submitted only after incidents
 - D) A medical surveillance register

5. Which of the following is an example of a psychosocial hazard in work environments?
 - A) Prolonged exposure to hand-arm vibration
 - B) Workplace bullying, harassment, or chronic stress
 - C) Exposure to infectious pathogens
 - D) Poor illumination levels

6. Health services in occupational environments aim to primarily achieve what?
 - A) Enhance production efficiency
 - B) Prevent work-related injuries and diseases
 - C) Reduce compensation costs
 - D) Monitor employee attendance
7. What is the classification of an occupation-related disease caused by repetitive motions, such as carpal tunnel syndrome?
 - A) Degenerative neurological disorder
 - B) Work-related musculoskeletal disorder
 - C) Occupational infectious disease
 - D) Systemic inflammatory condition
8. The etiology of pneumoconiosis, an occupation-related disease, is primarily linked to:
 - A) Chronic exposure to awkward postures
 - B) Inhalation of respirable mineral dust
 - C) Prolonged noise exposure
 - D) Viral respiratory infections
9. In the pathology of work-related back injuries, what is a common underlying factor?
 - A) Congenital spinal abnormalities
 - B) Repetitive mechanical loading and improper lifting
 - C) Seasonal climatic variations
 - D) Sedentary leisure activities only
10. What is a key management strategy for preventing occupation-related accidents?
 - A) Post-incident disciplinary measures
 - B) Regular hazard identification and staff training
 - C) Reduction of workforce diversity
 - D) Increased productivity targets
11. Prevention of occupation-related diseases like asthma from chemical fumes involves:
 - A) Rotating workers without exposure monitoring
 - B) Engineering controls and appropriate PPE
 - C) Eliminating periodic health surveillance
 - D) Increasing tolerance to irritants

12. How are occupation-related accidents classified under general occupational health frameworks?
- A) By severity alone
 - B) By mechanism and causative factors
 - C) By worker designation
 - D) By duration of employment
13. What is the primary role of physiotherapists in occupational health?
- A) Conducting legal compliance audits
 - B) Promoting functional capacity and injury prevention
 - C) Supervising payroll systems
 - D) Overseeing procurement
14. In assessing the working environment, physiotherapists evaluate:
- A) Organizational profitability trends
 - B) Ergonomic risk factors (posture, force, repetition)
 - C) Corporate governance structures
 - D) Interior workspace aesthetics
15. The structure of occupational health services often includes physiotherapists for:
- A) For medico-legal arbitration
 - B) Functional rehabilitation and return-to-work planning
 - C) Administrative supervision
 - D) Procurement of safety equipment
16. Physiotherapists in occupational health contribute to:
- A) Workforce downsizing strategies
 - B) Health promotion and chronic condition management
 - C) Insurance policy development
 - D) Hazard reporting enforcement
17. When conducting a risk assessment, a physiotherapist's function includes:
- A) Limiting review to acute trauma cases
 - B) Task analysis for biomechanical and MSD risks
 - C) Investigating payroll discrepancies
 - D) Approving overtime schedules

18. In an occupational health organization, physiotherapists may develop:
- A) Corporate branding initiatives
 - B) Ergonomic training and injury prevention programs
 - C) Tax compliance systems
 - D) Public relations campaigns
19. What is the main goal of ergonomics in the workplace?
- A) Improve worker comfort only
 - B) Fit work demands to worker capacity to reduce injury risk
 - C) Eliminate all occupational hazards
 - D) Increase task speed
20. In manual handling, what is a common risk factor for injuries?
- A) Neutral spine positioning
 - B) Awkward postures and repetitive loading
 - C) Use of mechanical lifting aids
 - D) Adequate rest breaks
21. Medical examinations in occupational health are used to:
- A) Determine salary grading
 - B) Assess fitness for work and detect occupational risks
 - C) Approve annual leave
 - D) Evaluate retirement benefits
22. Management of sick employees in ergonomics involves:
- A) Immediate termination
 - B) Structured rehabilitation and graded return-to-work
 - C) Permanent task reassignment without assessment
 - D) Increased workload tolerance
23. Assessment of liability in work-related injuries includes evaluating:
- A) Regulatory compliance and workplace risk exposure
 - B) Personal lifestyle choices only
 - C) Family medical history
 - D) Company profit margins

24. In physiotherapy, manual handling training focuses on:
- A) Increasing lifting speed
 - B) Safe lifting techniques and assistive devices
 - C) Physical strength testing only
 - D) Competitive lifting practices
25. Which Kenyan law provides for the safety, health, and welfare of workers?
- A) Employment Act 2007
 - B) Occupational Safety and Health Act (OSHA) 2007
 - C) Public Health Act
 - D) Work Injury Benefits Act (WIBA) 2007
26. ILO Convention No. 155 primarily addresses:
- A) Wage protection standards
 - B) Occupational safety and health framework
 - C) Social security financing
 - D) Collective bargaining rights
27. Under the Work Injury Benefits Act (WIBA) 2007 in Kenya, what is covered?
- A) Injuries outside employment
 - B) Compensation for work-related injuries and diseases
 - C) Employer criminal liability
 - D) Workplace inspections
28. ILO policies emphasize that a safe and healthy working environment is:
- A) Voluntary employer initiative
 - B) A fundamental principle and right at work
 - C) Corporate social responsibility strategy
 - D) Insurance-based entitlement
29. Medico-legal reports in occupational health are used for:
- A) Clinical diagnosis and routine treatment planning
 - B) Compensation claims and legal proceedings
 - C) Workplace health promotion campaigns
 - D) Academic research and publication purposes

30. Which ILO convention promotes a framework for occupational safety and health?

- A) Convention No. 87
- B) Convention No. 187
- C) Convention No. 29
- D) Convention No. 100

SECTION 2 (answer 2 questions)

QUESTION 2

A physiotherapist working in a private clinic in Mombasa develops skin irritation and respiratory symptoms after prolonged exposure to unventilated disinfectants and latex gloves during post-COVID-19 sanitization protocols. The clinic lacks proper ventilation and has not conducted a chemical risk assessment, resulting in multiple staff complaints. Similar chemical hazards are reported in under-resourced Kenyan health facilities, where approximately 20–30% of workers experience dermatitis related to cleaning agents.

Using relevant occupational health legislation and OSH principles in Kenya, answer the following:

- a) Applying the Hierarchy of Controls, propose appropriate measures the clinic could implement to eliminate or reduce chemical exposure. (3 marks)
- b) Explain the procedure for reporting this incident under OSHA 2007 (Kenya) and outline the compensation provisions available under the Work Injury Benefits Act (WIBA). (4 marks)
- c) As a member of the clinic's safety committee, propose TWO policy changes to prevent recurrence of such incidents. (2 marks)
- d) Noting the resource constraints in Kenyan private clinics, suggest ONE advocacy strategy physiotherapists can use to improve workplace safety. (1 mark)

QUESTION 3

A large tea processing factory in Kericho County reports an increase in musculoskeletal injuries among workers involved in manual handling of heavy tea sacks. Several workers have been placed on sick leave due to low back pain. The management has requested the physiotherapist attached to the occupational health service to conduct a workplace risk assessment and provide recommendations. Using your knowledge of occupational health physiotherapy, answer the following:

- a) Describe the role and functions of a physiotherapist in occupational health services within this factory setting. (3 marks)
- b) Analyze the ergonomic factors contributing to the workers' low back pain. (3 marks)
- c) As the occupational health physiotherapist, propose a management and return-to-work plan for affected workers, including considerations of employer liability under Kenyan OSH legislation (OSHA 2007/WIBA). (4 marks)

SECTION C (The section has 3 questions; answer any 2)

QUESTION FOUR

Body alignment is a foundational principle in ergonomic assessment and physiotherapy practice.

- a) Explain how optimal body alignment contributes to efficient posture and movement during task performance. (3 marks)
- b) Using an office-based workstation scenario, demonstrate how a physiotherapist would apply principles of body alignment to:
 - i. Assess the patient's posture, and (2 marks)
 - ii. Teach at least two self-assessment or corrective strategies to promote musculoskeletal health during daily activities. (5 marks)

QUESTION FIVE

Occupational hazards are a significant concern in physiotherapy practice, particularly within hospital, community, and industrial settings. Using relevant examples, answer the following:

- a) Define *occupational hazard* and list four categories of hazards relevant to physiotherapy practice. (2 Marks)
- b) Explain how each of the following hazards may arise in physiotherapy practice:
 - Physical hazards
 - Biological hazards
 - Ergonomic hazards (3 Marks)
- c) Analyze the potential short-term and long-term implications of occupational hazards on physiotherapists' health, professional performance, and quality of patient care. (3 Marks)
- d) Propose two evidence-based strategies that physiotherapists can implement to minimize occupational risk in their workplace, justifying your choices. (2 Marks)

QUESTION SIX

- (a) Discuss the key provisions of Kenya's OSHA 2007 and analyze how they contribute to the management of workplace hazards in industrial settings. (5 marks)
- (b) Discuss occupational lung diseases, with specific reference to silicosis. In your answer, include its classification, etiology, pathology, management, and prevention. (5 marks)