

UNIVERSITY OF SWAZILAND

Faculty of Health Sciences

Department of Environmental Health Science

December 2015 Examination

Title of paper: Principles of Ergonomics

Course code: EHM 420

Time allowed: 2 hours

Marks allocation: 100 Marks

Instructions:

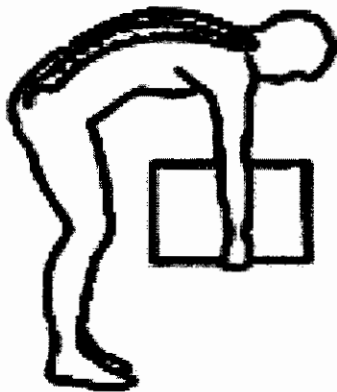
- 1) Read the questions and instructions carefully
- 2) Answer any 4 questions
- 3) Each question is weighted 25 marks
- 4) Write neatly and clearly

This paper is not to be opened until the invigilator has granted permission

Question 1

Occupational health is the promotion and maintenance to the highest degree of physical, mental and social-well being of all workers in all occupations. However, there are health conditions that may have been a result of the life style/pattern of the worker.

- a) Discuss three (3) life styles/pattern that may endanger the health of a worker that are not related to the workplace. State how they affect the body of the worker. [21 Marks]
- b) Why is it important to practice ergonomics at the workplace? [4 Marks]

Question 2

(i) Manual material handling tasks are noted as major ergonomic risk factors. The worker shown on the left picture was lifting a 20kg solid object from the floor which he cannot bring up to the centre of his trunk. The object is carried to a storage place which is 10 meters away.

- a) Given this scenario, outline the posture of this worker and state what are the possible adverse health effects on the worker's body [5 Marks]
- b) Discuss how a safety officer would ensure that the risk of injuries when handling loads is reduced.

[9 Marks]



(ii) Seating workstation can pose a danger to the health of a worker.

- a) Analyze and state your observations on the worker's posture and sitting position. [5 Marks]
- b) What measures can be taken to improve the protection of the worker's health. [6 Marks]

Question 3

The workplace environment is another ergonomics risk factor:

- a) Discuss how indoor light can affect the health of the worker and state the basic principles of illumination at the workplace (indoors). [8 Marks]
- b) Discuss how noise can affect the health of the worker. State what the employer should do to protect the health of the worker. [9 Marks]
- c) Outline how vibration affects the worker and what the workplace can be improved to protect the worker. [8 Marks]

Question 4

As a safety officer you are to give a 30 minutes presentation to workers on the importance of health and safety at a house building construction site:

- a) Write the objectives of the presentation. [8 Marks]
- b) Write the presentation outline. [3 Marks]
- c) Write the main points that will be discussed stating the key areas of concern. [14 Marks]

Question 5

Define the following and give examples in each:

- a) Musculoskeletal disorders. [8 Marks]
- b) Ergonomics. [5 Marks]
- c) Workplace stress and its effects. [10 Marks]
- d) Cumulative trauma disorders. [2 Marks]