

cTHE NATIONAL UNIVERSITY OF LESOTHO
BSc. ENVIRONMENTAL HEALTH
SUPPLEMENTARY EXAMINATIONS- 2023

OCCUPATIONAL HEALTH, SAFETY AND HYGIENE (EHS3212)

DURATION: 3 HRS

MARKS: 100

INSTRUCTIONS:

1. Answer **ALL** questions
2. Each question must be started on a new page

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QUESTION 1

Define the following terms as used in Occupational Health, Safety and Hygiene: [2*5]

- a. Local Labor Laws;
- b. Occupational Health;
- c. Industrial Hygiene;
- d. Confined space;
- e. Ergonomics.

QUESTION 2

- a) List any five (5) hazards of working in outdoor environment [5]
- b) Elimination and substitution can be cheap or expensive depending on when they were implemented. Discuss the statement above [5]

QUESTION 3

- a) What does labor code of Lesotho say about protection of workers in different workplaces? [4]
- b) Differentiate between the Personal and area monitoring. [4]
- c) Discuss how a warehouse must be designed to ensure less Musculoskeletal Disorders within the work environment. [15]

QUESTION 4

EARTHMOVING AND TRENCHING AT A CONSTRUCTION SITE (QUINTON'S TURF):

The construction company for which Quiton works is busy with a project for its client, a Danish hotel group, to build a boutique hotel in what was vacant land in the Tokai area of Cape Town. The project scope is principally the building of a five-storey hotel, an adjacent parking area for hotel guests and visitors, a large swimming pool, tennis courts and leisure annex, and landscaping and paving where needed for the entire site. One of the first activities on site is that of earthmoving and trenching, which is an important part of site clearing and preparation. This involves the use of two excavators and one bobcat (compact excavator) to remove the vegetation and soil from the area in which the trenches for the hotel, parking area, leisure areas and paved areas will be needed. The soil gets transported to the 'spoil area' by use of a tipper truck. Some of this soil will get used later for backfilling where required. Trenches are created as the first step of creating foundation walls for the buildings.

a) Conduct Risk assessment for the above project identifying two hazards per operation. [32]

QUESTION 5

[25]

BACKGROUND

On the day of the incident, a group of employees were busy with the installation of lighting on a walkway 28m above ground level.

The foreman, who was appointed as responsible person, left at 16:00. Before leaving, he issued instruction that his team of workers should go off duty at 16:30.

Education and Training had been provided and written safety procedures had been given to all employees. These procedures included instructions on the correct way to lower tools and equipment from an elevated position or platform. This procedure included the an instruction that a "watch person" should be present on ground level to supervise and check the lowering operation; to keep the area clear and to warn people of the overhead danger.

SHORT DISCRIPTION OF THE INCIDENT

At approximately 16:20 employees started lowering toolboxes. Manila ropes were used. There was no ground level supervision at the time. The boxes weighted approximately 8kg, and a tenth of rope was secured to each box.

One employee (Joe) had lowered his box to approximately 5m from the ground when the rope broke. The box crashed to the ground, striking a passerby, Jack, on the head. He sustained a skull fracture and was killed instantly.

On inspection, defects in the rope were identified.

1. It had been joined in several places. These joins hadn't been spliced.
2. Excessive wear and tears found in several places, which severely affected its strength and overall load capacity.

Analyse the scenario above indicating the following:

- a) Direct cause of the accident [2]
- b) Incident classification [3]
- c) Unsafe acts and conditions that lead to the accident [6]
- d) Personal and job factors that lead to the accident [4]
- e) Remedial/corrective action plan [10]