

University of Ruhuna- Faculty of Technology

Bachelor of Engineering Technology Honours Degree

Level 3 (Semester I) Examination, June 2023

Academic year 2021/2022

Course Unit: TCS3111 Safety and Risk Management Duration: 01 hour

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- Answer all **Five (05)** questions.

1)

- a) What is an integrated approach? (02 marks)
- b) List out four characteristics of an effective integrated approach. (08 marks)
- c) List out four benefits of integrated approach? (04 marks)

2)

- a) State two reasons why do we need an occupational health and safety policy statement. (02 marks)
- b) Name three parties that should read the occupational health and safety policy statement in a laboratory/ workshop. (04 marks)
- c) List out four statements of occupational health and safety of the laboratory/workshop for the students. (08 marks)

3)

- a) Write two costs and two benefits of an occupational health and safety program in a workplace. (04 marks)
- b) Financial analysis International Ltd is planning to undertake one project. It has two alternatives, with the following benefits and costs.

Given,

Alternative 1

The total value of the Costs from project 1 = \$ 60 million.

Benefits available from project 1 = \$ 100 million

Alternative 2

The total value of the Costs from project 2 = \$ 14 million.

Benefits available from project 2 = \$ 21 million

By using the Cost-benefit analysis; which Project the company should choose?

(10 marks)

- 4)
- a) What are the four basic ways of handling a risk? (04 marks)
 - b) Technical officer (TO) needs to move the X-ray diffraction machine to the newly build X-ray room.
 - i) Identify two tasks that should be performed when moving the X-ray diffraction machine. (02 marks)
 - ii) Describe two-risk types associated with performing these tasks. (04 marks)
 - iii) Explain two ways to mitigate these risks. (04 marks)
- 5)
- a) Draw a simple risk matrix showing the relationship between probability and severity of an incident. (04 marks)
 - b) What are the actions required for four risk assessment codes (RAC) in the above matrix? (04 marks)
 - c) Chemical exposure is one of the hazards in the workshop.
 - i) Assign RAC for the hazard. (02 marks)
 - ii) What are the actions need to avoid the hazard? (04 marks)

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