UNISA university of south africa

MNO2605

OCTOBER/NOVEMBER 2019

ANALYSIS OF SAFETY INCIDENTS

STUDENT NUMBER									

IDENTITY NUMBER												

FOR USE BY EXAMINATION INVIGILATOR

Question No	Marks					
	Examiners					
	1		2		3	
Total						

Subject

Number of paper

Date of examination

Examination centre

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UNIVERSITY EXAMINATIONS

UNIVERSITEITSEKSAMENS

UNISA university of south africa

MNO2605

October/November 2019

Analysis of Safety Incidents

Duration 2 Hours

70 Marks

EXAMINERS

FIRST MRS LB LOUW

SECOND MS ES BOK

Closed book examination

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This examination paper consists of 17 pages, including 2 blank pages

CONTENTS

Examination paper		Section A *Compulsory* (MCQ)		Section B *Select any two questions*	
Section A	[10]	Question 1	[10]	Question 2	[30]
Section B	[60]			Question 3	[30]
				Question 4	[30]
Total for paper	[70]	Total for Section A	[10]	Total for Section B	2 x [30] = [60]

INSTRUCTIONS / INFORMATION

- This is a fill-in examination paper All answers need to be written on the paper in the space provided Additional blank pages are provided at the end of the paper (see pp 16 - 17)
- The examination paper consists of two sections Section A consists of 10 compulsory mulitple choice questions Section B consists of three essay-type questions, of which you must answer any two
- Answers must be written neatly with a black or blue pen Answers written in pencil will not be marked
- Take note of the mark allocation of each question and time limit of the paper (only 2 hours)
- Read each question very carefully Make sure your answer reflects what has been asked

SECTION A (Compulsory)

This section must be answered by all candidates For each question, five possible answers (options) is given Select only one option and write down the corresponding number in the space provided

Question 1 **[10]**

1 1 Every safety hazard has certain characteristics that relate to its structure and function Which characteristic focuses on the point of contact between safety hazards?

1 Tangibility
2 Energy
3 Shape
4 Texture

(1)

Answer 1.1

1 2 Which one of the following statements represent one of Heinrich's axioms of industrial safety?

1 Injuries are the result of a series of factors
2 A very good way to achieve safety results is for employers to take responsibility
3 The key people in the prevention of accidents are employees
4 The severity of an accident is mainly expected, unplanned and accidental

(1)

Answer 1.2

1 3 The following characteristic confirm that stress is not a safety hazard

1 Sensitivity
2 Tangibility
3 Humanity
4 Dangerously

(1)

Answer 1.3

1 4 Which of the following substances is a compound safety hazard?

1 A piece of copper
2 A single car key
3 A motor vehicle
4 A potential hazard

(1)

Answer 1.4

1 5 Which of the following indicates the exposure limits of substances?

1 Energy limits
2 Challenging limits
3 Environmental limits
4 Threshold limits

(1)

Answer 1.5

1 6 Which one of the following characteristics of safety hazards applies when water boils after being sufficiently heated inconsistency?

1 Consistency
2 Density
3 Weight
4 Texture

(1)

Answer 1.6

1 7 Which of the following elements are the purposes of safety risk assessment?

1 Risk assessment upon choice, risk assessment at leasure and only after incidents occur
2 Limited guidelines for training, little focus on control measures and limited importance given to innovation
3 Legal requirement, monitoring safety risk and guidelines for safety training
4 Limited basis for understanding risks, once after incidents occur and risk assessment as chosen

(1)

Answer 1 7

1 8 Which of the following stipulate the essence of preventing harm and damage regarding safety?

1 Identifying, evaluating and controlling unsafe actions
2 Identifying, evaluating and eliminating all safety hazards
3 Identifying, judging and treating safety hazards
4 Identifying, evaluating and controlling safety hazards

(1)

Answer 1.8

1 9 Which one of the following disciplinary groups focuses on the design of construction operation and maintenance of safety hazards during safety risk assessment?

1 Industrial hygienists
2 Fire professionals
3 Engineers
4 Health professionals

(1)

Answer 1.9

1 10 Which of the following procedures produce the mean of a range responses?

1 Calculate the total of the responses and divide the total by the number of the responses
2 Calculate the total of the responses and multiply them by the number of the responses
3 Calculate the total of the responses and subtract the number of the responses
4 Calculate the total of the responses and add the number of the responses

(1)

Answer 1.10

Subtotal for Question 1: 10 × (1) = [10]

Subtotal for Section A: 1 × [10] = [10]

SECTION B

This section consists of three questions for 30 marks each Select <u>any two</u> questions to answer from Section B Write each answer neatly in the space provided Additional writing space, if needed, is provided at the end of the paper (pp 16-17)

Question 2 **[30]**

2 1 Differentiate between the three functional characteristics of safety hazards

	6

2 2 It is important that safety professionals and accident investigators understand concepts and terminology related to occupational safety Distinguish between the terms 'safe' and 'unsafe'

	4

2 3 Occupational diseases and injuries are managed by the Compensation Commissioner and the Department of Labour What are the most commonly reported occupational diseases in South Africa?

	5

2 4 The systems theory model developed by RJ Firenze in 1978 is one of the most widely used accident causation models Describe the role of the feedback loop in this model

[ ] 3

2 5 The Health and Safety Executive defines an accident as an unplanned event that results in injury, illness, damage or loss to property, machinery or business opportunity With this definition in mind, describe the categories of accidents and incidents

[ ] 6

2 6 Occupational incidents must be reported to the Department of Labour and Compensation Commissioner as required by legislation Expand on any three of the reasons why occupational incidents are not reported

	3

2 7 Evaluate whether a condition or a situation is a safety hazard and expand on your answer

	3

Subtotal for Question 2 = [30]

Question 3 **[30]**

3 1 Differentiate between potential energy and kinetic energy

	2

3 2 It is important to determine and confirm that humans as safety hazards fully meet the structural and functioning criteria of the definition of safety hazards Describe the structural characteristics of humans as safety hazards

	6

3 3 What is the role of emotional intelligence as a part of human competence with specific application to safety hazards?

	3

3 4 Safety risks that threaten the achievement of objectives result from the dysfunction of interaction and energy exchange The dysfunction that manifests in destructive effects depends on variables Describe any four of these variables

	4

3 5 What is the mandate and purpose of safety as a science?

	3

3 6 In order to handle safety risks successfully in the workplace, employees need to meet particular requirements and obtain certain skills Describe any three of these requirements

	3

3 7 Define the concept of non-interactive mode of safety hazard interaction and provide a practical example

	3

3 8 Distinguish between closing potential, collision potential and interactive potential as it relates to safety hazards

	6

Subtotal for Question 3 = [30]

Question 4 **[30]**

4 1 What is the difference between baseline safety risk assessment and issue based safety risk assessment?

4

4 2 Every business must develop a health and safety policy This policy must clearly state how the business will handle safety risk in the workplace The safety policy needs to clearly specify certain aspects on conducting a safety risk assessment Describe these aspects

5

4 3 A safety risk assessment needs to take note of specific criteria that have to be considered when focusing on identifying and assessing safety risk Highlight the particular criteria that should be noted

	4

4 4 Describe the role of an ergonomist in a cross-functional team

	2

4 5 Safety control measures play an indispensable role in safety and health in the workplace What are the four types of safety controls that are aimed at preventing the likelihood and limitation of the severity of impact?

	4

4 6 Safety communication forms an important role in changing the employees' knowledge, attitude and behaviour towards safety The safety risk assessment reports achieves this by informing interested parties about which aspects?

	5

4 7 Describe the four-step teaching method that should be undertaken during training

	4

4 8 Summarize the reasons why a vision and mission statement is important

	2

Subtotal for Question 4 = [30]

Subtotal for section B. 2 × [30] = [60]

Total for paper = [70]

Blank pages for additional writing

You can make use of the space provided below, if needed Please number all your answers clearly and leave a line open between each answer

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