

REGISTRATION CENTRE NUMBER		CENTRE NAME	
CANDIDATE'S FULL NAMES			
CANDIDATE IDENTIFICATION NUMBER	SUBJECT CODE 5420	PAPER NUMBER 2	
FOLD HERE			
FOR OFFICIAL USE ONLY (Candidate Random Code)			
GENERAL CERTIFICATE OF EDUCATION BOARD Technical and Vocational Education Examination INTERMEDIATE LEVEL			
SUBJECT TITLE Quality, Hygiene, Safety & Environment	SUBJECT CODE 5420	PAPER NUMBER 2	
SPECIALTY: ALL SPECIALTIES		EXAMINATION DATE: JUNE 2023	

Answer Booklet

*This Paper has Four Sections, containing FOURTEEN Questions
Answer ANY TWO Questions from each of the Sections A, B and D*

Answer FOUR Questions from Section C

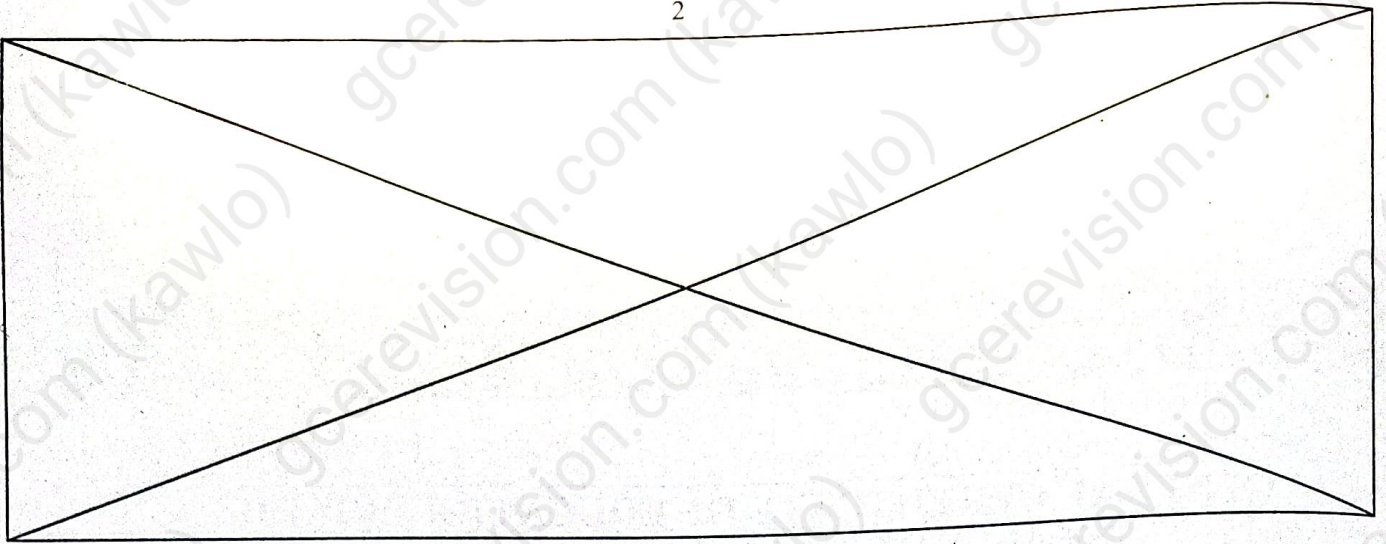
All questions in each section carry equal marks.

You are reminded of the necessity for good English and orderly presentation in your answers

All questions are to be answered. Answers should be written in the spaces provided.

FOR EXAMINERS' USE ONLY (To Be Exploited Only at the Marking Centre)	
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Turn Over



PROFESSIONAL SITUATION

This is the professional situation of Diana, a cleaning agent, employee for 15 years at a hospital, which is being analysed in order to provide solutions which will be valid for all the employees ensuring similar work. The attention of the management, and the Health, Safety Work Committee has been drawn by the number of cleaning agents complaining of fatigue due to the arduousness of the tasks. Work stoppages for low back pain are frequent.

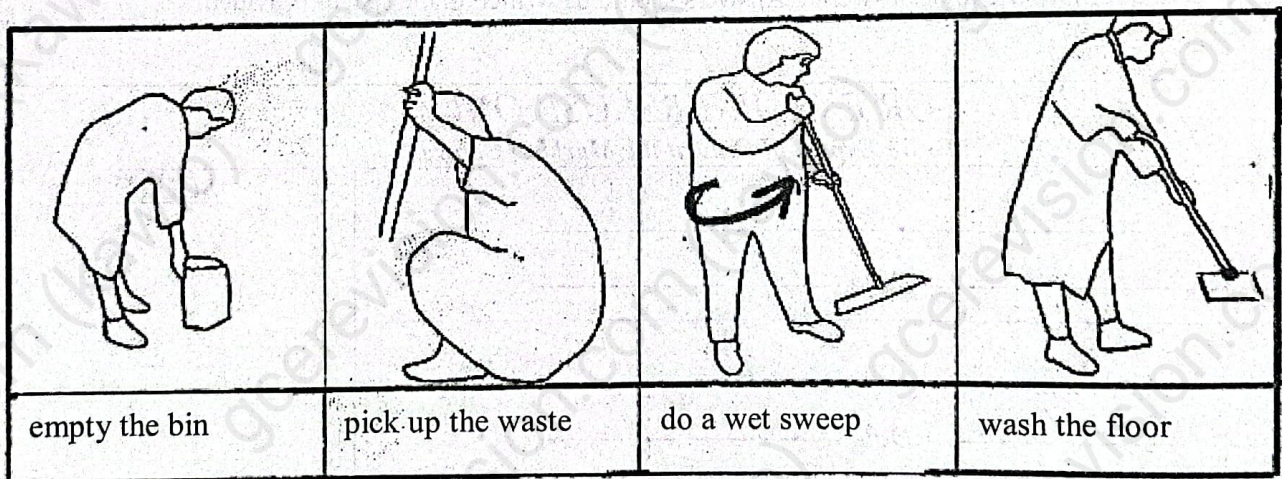
Diana takes care of the daily maintenance of patient rooms in the surgery department. She is very tired at the end of the day and feels pain in her left hip, knee joints and lower back. In addition, she has been off duty twice this year for lumbago.

She generally works alone; the schedules are imposed by the service: (6 a.m. – 1:30 p.m.). Medical checks intervention on patients often interrupts Diana and prevents her from completing her work in time.

The patient is present in the room while Diana carries out her work, and this is an opportunity for her to exchange few words.

She must first empty the patient's individual bin. She often has to pick up the waste on the floor (paper tissues, cottons, used nappies) and close the garbage bag. She wet sweeps, then washes the floor with a broom that is a bit short compared to her height (1.75m), which forces her to lean forward.

It is not easy to access the entire surface of the floor due to the presence of the sick bed, the bedside table and an armchair in a confined space. She wears work clothes which are changed twice a week. She works with her bare hands, despite the risks of contamination that exist.



Tasks performed by Diana

From the data available in the situation described above and from your personal knowledge, answer the following questions:

SECTION A: QUALITY (Answer any two questions: 2 x 5 marks = 10 Marks)

Question 1: Work interruptions due to low back pain are frequent at the hospital, which affects the quality of the services offered and the image of this hospital center.

1.1 Define the term "quality"

(1 mark)

1.2 List two examples of quality services that the Hospital Center can offer

(1 mark x 2=2 marks)

1.3 Identify two causes of non-quality in this hospital.

(1mark x2=2 marks)

Question 2: The hospital wishes to obtain ISO certification for the quality of health care offered in its services. For this, they request a Quality Audit.

2.1- Define these expressions: "ISO certification" and "quality Audit"

(1 mark x 2 = 2 marks)

2.2 List three stages of implementation of a quality audit

(1mark x 3 = 3 marks)

Question 3. In its quality approach, the management of the hospital uses tools such as the "Total Quality Management" (TQM), the "Total Productive Maintenance" (TPM), the "five zeros"

3.1 What do you understand by TPM, and TQM?

(1mark x 2=2 marks)

3.2 Complete the list of "five zeros"

(1mark x 2=3 marks)

"zero defect"

"zero time limit"

"zero

"zero

"zero

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SECTIONB: HYGIENE (Answer any two questions: 2 x 5 marks = 10 Marks)

Question 1. The chronogram of Diana's activities is given below (appendix N° 01)

Appendix N° 01: Chronogram of work tasks for the maintenance of four rooms

Each shaded slice has a duration of 4 minutes																
	Room 1				Room 2				Room 3				Room 4			
Empty the bin and pick up the waste	■				■				■				■			
Maintain the toilets		■				■				■				■		
Perform a wetsweep			■				■				■				■	
Wash the floor			■	■			■	■			■	■			■	■
Preparing the material for the next room				■				■				■				■

1.1. Complete table No. 01 below indicating the cumulative duration of each task.

(1 mark x 4 = 4 marks)

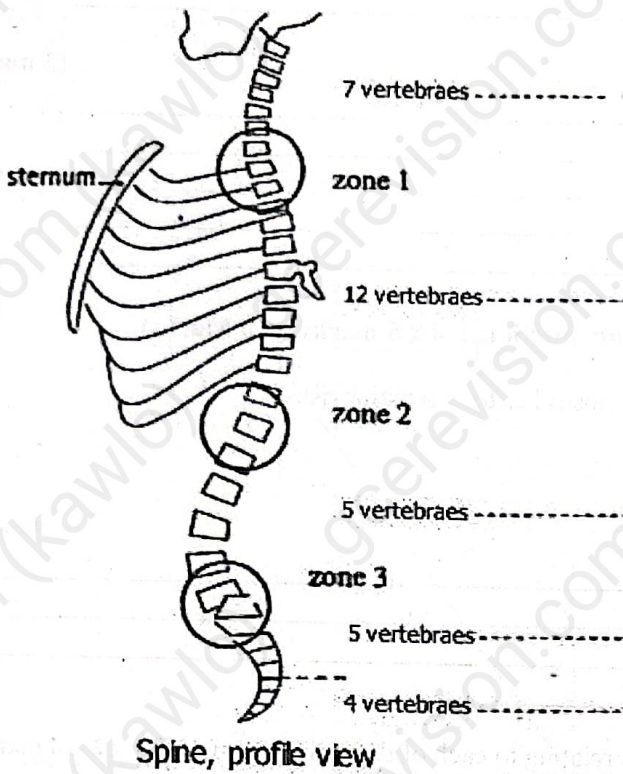
Table No. 01

Tasks	Cumulative time in minutes
- Empty the bins - Pick up the waste on the floor	16 minutes
Maintain the toilets	
Perform a wet sweep	
Wash the floor	
Preparing the material for the next room	

1.2. Specify the longest task.

(1 mark)

Question 2. Below is the diagram of the vertebral column (appendix No. 02), including the names of the different groups of vertebrae



2.1 Complete the labeling of the vertebral column.

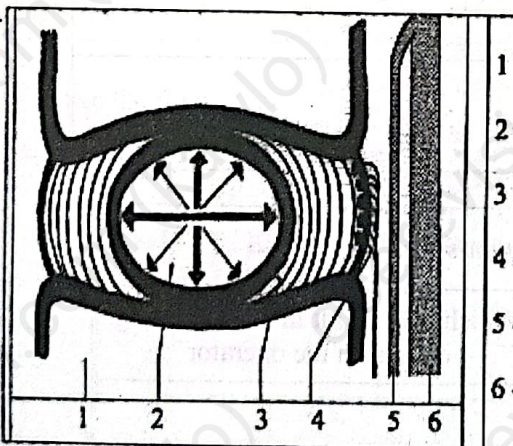
(1 mark X 4 = 4 marks)

2.2 Name the most stressed vertebral area in Diana's situation.

(1 mark)

Question 3. Below is the diagram of the intervertebral disc and the pictogram relating to gestures and postures taken from the facilitator's manual (Annex No. 03).

Annex No. 03: Diagram of the intervertebral disc



- 1 vertebral body
- 2 core
- 3 fibrous ring or disc
- 4 sensory nerves
- 5 sciatic nerves
- 6 Spine

Pictogram relating to the manifestation of lumbago

The image cannot be displayed. Your computer may not have enough memory to open the image, or the image may have been corrupted. Restart your computer, and then open the file again. If the red x still appears, you may have to delete the image and then insert it again.

3.1. Complete the sentence below:

(2 marks)

« low back pain is a symptom, defined by: _____

3.2. Describe the mechanism of lumbago.

(3 marks)

SECTION C: SAFETY (Answer any four questions: 4 x 5 marks = 20 Marks)

Question 1. According to the text, Diana's professional activity exposes her to two major risks:

- The risk related to physical activity;
- The biological risk.

1.1 Give the definition of biological risk

(1 mark)

1.2 Complete table No. 03 below, by formulating the hypotheses relating to each of these risks. (1 mark x 2 x 2 = 4 marks)

Table No. 03

Hypothesis No. 01 : Risks related to physical activity		
It seems that the following determinants(challenges)	Lead the operator to	This can have the following effects on the operator
	Lean forward	

Hypothesis No. 02: Risks relating to biological agents		
It seems that the following elements	Lead the operator to	Which may result in the following effects on the operator
	<i>Take the waste with her bare hands</i>	

Question 2. Specify the tasks and activities of the real work from the text and the diagrams of the postures adopted by the operator by completing table No.04 below relating to the comprehension diagram.

(1 mark x 5 = 5 marks)

Table No. 04

HUMAN DETERMINANTS
(Characteristics of the operator)

COMPANY DETERMINANTS
(characteristics of the workstation environment)

Prescribed work:
Daily room maintenance

Actual work	
Tasks	Activities
Empty the bins	-Leans completely forward. - Straightens with a charge.
Pick up the waste on the floor	- squats and stands up. - Takes the waste by hand.
Perform a wet sweep	- Lean forward. - Twists.
Wash the floor	

Effects on the operator

Effects on the business (company)

Question 3 We are looking for justified solutions to the risks incurred by Diana in the performance of her duties.
3.1 Propose three solutions to the risks associated with physical activity in relation to Diana's situation. (1 mark x3 = 3 marks)

Solutions	Justifications

3.2 Propose two solutions to the biological risk, in connection with the situation of Diana.

(1 mark x 2 = 2 marks)

Solutions	Justifications

Question 4. We want to prevent the biological risks to which Diana is subjected in the exercise of her duties.

4.1 Based on Annex No. 04 below, Identify the group to which the biological agents belong, in Diana's situation. (1 x 2 = 2 marks)

Annex N° 04: Classification of biological agents according to infection risks

Group 1	Biological agents not likely to cause diseases in humans.	
Group 2	Biological agents that can cause diseases in humans and constitute a danger to workers; their spread in the community is unlikely; there is usually prophylaxis or effective treatment.	<ul style="list-style-type: none"> - Legionella - Leptospira - Staphylococcus aureus - Hepatitis A Virus (HAV)
Group 3	Biological agents that can cause serious disease in humans and constitute a serious danger to workers; their spread in the community is possible; but there exists generally a prophylaxis or effective treatment.	<ul style="list-style-type: none"> - Tuberculosis bacilli - Brucella (brucellosis agent) - HIV (AIDS virus)
Group 4	Biological agents that can cause serious diseases in humans and constitute a serious danger to workers; their spread risk in the community is high; there is generally no prophylaxis or an effective treatment.	<ul style="list-style-type: none"> - Ebola virus - Smallpox virus

4.2. Complete table No. 05 below relating to the Identification of the elements of the epidemiological chain at the origin of the risk of contamination, in the situation of Diana.

(1 x 3 = 3 marks)

Table No. 05

The epidemiological chain	Definitions	Possible contaminations	
		Case N° 01	Case N° 02
Infectious agent	The microorganism causing a disease (dangerous phenomenon)	Bacillus tuberculosis	Staphylococcus aureus
Reservoir of germs	The living place of the infectious agent	Patient	
Transmission	The dangerous event allowing the contamination of the worker	Dialogue with the patient	
Route of entry into the body	The pathway through which the infectious agent enters the body		Dermal (skin)

Question 5. At the hospital, work stoppages for low back pain are frequent. Low back pain is considered as professional disease.

5.1 Define "professional disease"

(1 mark)

5.2 Name the person empowered to qualify a professional disease

(1 mark)

5.3 In order to limit the risks of accidents at work and occupational disease, the hospital must put in place individual and collective preventive measures.

Among the measures listed, distinguish collective measures from individual measures by ticking the appropriate box in the table below.

(0.5 mark x 6 = 3 marks)

Examples of measures allowing work without any risk	Individual Measure	Collective Measure
Hearing protector	X	X
Adapted white cotton or wool blouse	X	
Adapted work gloves, fire resistant, in leather	X	
Dilute contaminants through general ventilation		
Wear a respiratory protector		
Isolate workstations or processes		
Safety shoes or boots with lace protection		
Protective glasses		
Hood		

SECTIOND: ENVIRONMENT (Answer any two questions: 2 x 5 marks = 10 marks)

Question 1: Medical waste is all the waste produced by the activities of the health sector.

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In particular, lab examinations, prevention, care, treatment, therapy, diagnosis and research are considered to be activities of the health sector.

Hospital must ensure the destruction of its medical waste in an hazardous manner

1.1. List three direct environmental effects resulting from the deposit of healthcare waste in uncontrolled areas. (1 mark x 3 = 3 marks)

1.2. Give two (02) methods of destruction of medical waste that respect the environment. (1mark x 2 = 2 marks)

Question 2. Global climatologists have observed and recorded global warming since the mid-20th century.

2.1. Define the following term: global warming. (1 mark)

2.2. List two (02) possible causes of global warming. (1 mark x 2 =2 marks)

2.3. List two (02) possible actions to limit global warming (1 mark x 2 =2 marks)

Question 3. All waste used at home, in business, or in hospitals must be deposited in specific bags. Once collected, they are taken to sorting centers to be sorted by material and then sent to specific recycling plants. They will then be transformed into new objects for everyday life.

3.1 Define: recyclable waste (1 mark)

3.2 Identify the treatment to be applied to each waste by assigning to it the corresponding number. (1 mark x 4 = 4marks)

Waste	N°	Treatment
Brochures on treatment prices	1	1- Recycling 2- Incineration 3- Composting 4- Storage Center
Body milk plastic bottles		
Wax and wax strip		
Not-empty polish/solvent bottles		
food waste		

STOP GO BACK AND CHECK YOUR WORK