

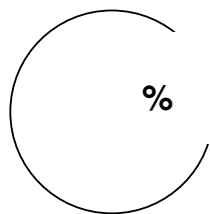
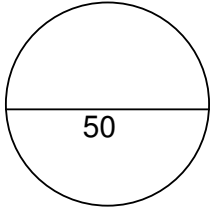
SUBJECT: **Engineering Fundamentals**
TEST 1

LEVEL: **2**

DATE: **MARCH 2017**
EXAMINER: **E.NDEBELE**
NAME OF MODERATOR: **S.MAUPA**

Student Surname		Name	
ID. Number		Group	

Topic and outcomes covered	Topics; 1 & 2
Duration	1 Hour
Evidence Required	Answer Paper of the test
Instrument	Test Question Paper



Rating Scale	Remark	Rating
5	Outstanding	80 - 100
4	Highly competent	70 - 79
3	Competent	50 - 69
2	Not yet Competent	40 - 49
1	Not achieved	0 - 39

SIGNATURES:

Student declaration:

I declare that the evidence provided is my own work.

STUDENT: _____

DATE: _____

FEEDBACK: _____

REVISION: _____

DATE: _____

Indicate which questions you found difficult (tick ✓)

1	2	3	4	5	6	7	8	9
								45

LECTURER: _____ **DATE:** _____

COMMENT:

POST MODERATION

DATE: _____

**COLLEGE
MODERATION
EXTERNAL
MODERATION**

DATE: _____

Engineering Fundamentals

TIME: 1 HOUR

MARKS: 50

INSTRUCTIONS: ANSWER ALL QUESTIONS.

- 1.1 Careers in manufacturing, engineering and technology can be classified into categories. Name FOUR main categories of careers in manufacturing, engineering and technology. (4)
- 1.2 What is a Code of Conduct in an engineering workplace? (1)
- 1.3 Quality Work Life (QWL) refers to a person's overall satisfaction with his or her working life. Name THREE elements of a good quality work life. (3)
- 1.4 Choose a description from COLUMN B that matches a legislation in COLUMN A. Write only the letter (A – D) next to the question number (1.4.1 - 1.4.4) on your ANSWER script.

	COLUMN A		COLUMN B	
1.4.1	Employment Equity Act (EEA)	A	the Act will make the employees more productive and will help to make the business successful	
1.4.2	Labour Relations Act (LRA)	B	the Act gives rules for the relationship between employer and employee and to support the rights and responsibilities of employees and employers	
1.4.3	Basic Conditions of Employment Act(BCEA)	C	the Act promotes equal opportunity and fair treatment in employment through the elimination of unfair discrimination	
1.4.4	Skills Development Act (SDA)	D	the Act protects employees by giving them a right to fair labour practices by laying down rules for basic conditions of employment, such as sick leave and annual leave.	
				4x1 (4)

1.5 What is understood by work ethics? (2)

1.6 As a supervisor, what steps would you take to discipline a worker who does not follow the code of conduct ? (5)

1.7 Give one reason why an employee joins a trade union.

(1)

QUESTION 2 ; SAFETY PRACTICES IN THE ENGINEERING WORKPLACE

2.1 Indicate whether the following statements are TRUE or FALSE. Choose the answer and write only 'true' or 'false' next to the question number (2.1.1 -2.1.5) in the ANSWER BOOK.

2.1.1 Good housekeeping improves productivity and workmanship. (1)

2.1.2 Prohibitory signs tell people about actions that are not allowed at a specific area. (1)

2.1.3 Warning signs are signs that give you general information. (1)

2.1.4 Color codes are often used to define demarcated areas. (1)

2.1.5 Machine guards are fitted to machines to protect workers from moving parts of the machines. (1)

(5)

2.2 List FIVE safety precautions to be kept in mind when using a bench or pedestal grinder. (5)

2.3 Name THREE types of safety signs. (3)

2.4 Name TWO types of machine guards that are used on machines in the industry. (2)

[15]

2.5 In the engineering workplace there are different shapes to identify safety signs . Give the shapes and colours of the following signs;

2.5.1 Safe condition signs (2)

2.5.2 Supplementary sign (2)

2.5.3 Mandatory sign (2)

2.5.4 Warning sign (2)

2.5.5 Prohibitory sign (2)

2.6 Give two incidences when the lockout is used. (2)

2.7 What is personal protective equipment and give 2 examples. (3)

TOTAL ; (50)

MARKING GUIDELINE

1.1	<ul style="list-style-type: none">• Extraction – based careers.• Installation – based careers.• Maintenance – based careers.• Manufacturing – based careers.	<p>(1) (1) (1) (1) (4)</p>
1.2	A code of conduct is a written set of rules explaining how workers must behave in the workplace.	<p>(1)</p>
1.3	<ul style="list-style-type: none">• Good safety regulations.• A fair salary.• A healthy work environment.• Reasonable working hours.• Not too much stress.	<p>(1) (1) (1) (1) (1) (3)</p>
(ANY THREE FACTS)		
1.4	1.4.1 1 – D 1.4.2 2 – B 1.4.3 3 – A 1.4.4 4 – C	<p>(1) (1) (1) (1) (4)</p>
1.5	Work ethics refers to the way we behave at work. It is about our attitude towards our work, fellow workers and our supervisors	<p>(2) (1)</p>
1.6	(a) Counseling (b) Verbal warning (c) Written warning (d) Final written warning (e) Summary of dismissal	<p>(1) (1) (1) (1) (1) (5)</p>
1.7	<ul style="list-style-type: none">• Workers feel that they are stronger as a group and can protect themselves from powerful employers who might not treat them fairly.• Workers want to be paid well and feel that the unions will be able to get better wages for them.• Workers feel more secure in their jobs when belong to a trade union and can protect them if they are dismissed unfairly.	<p>(1) (1) (1) (1) (1)</p>
(ANY FACT)		
		[20]
2.1	2.1.1 - True 2.1.2- False 2.1.3 - False 2.1.4 - True 2.1.5 - True	<p>(1) (1) (1) (1) (1) (5)</p>

- 2.2
 - Always wear safety goggles or face shield when using a pedestal or bench grinder. (1)
 - Always use wheels that are rated consistent with the speed rating of the pedestal or bench grinder. (1)
 - Only dress the face of the wheel with a suitable wheel dresser. (1)
 - Never use a wheel that vibrates (1)
 - Never start a grinder with a work piece against the wheel (1)
 - Keep your hand and fingers at least 50mm away from the rotating wheel. (1)
 - Cool the work piece by dipping it in water. Do not apply coolant water directly onto the wheel. (1)
 - Always clean the pedestal or bench grinder work areas upon completion of a grinding task. (1)
- (ANY FIVE FACTS) (5)**

- 2.3
 - Protection signs (1)
 - WW- Warning signs (1)
 - FB-Fire Equipment warning signs (1)
 - PV- Prohibitive signs (1)
 - GA- Informative signs (1)
 - MV- Safety clothes and equipment to be worn (1)
- (ANY THREE FACTS) (3)**

- 2.4
 - Fixed Guards (1)
 - Interlocking Guards (1)
 - Automatic Guards (1)
 - Distance Guards (1)
 - Trip Guards (1)
- (ANY TWO FACTS) (2)**
- [15]**

- 2.5.1** Square/Rectangle , White picture
- 2.5.2** Square/Rectangle, White text, green for safe condition, red for fire equipment yellow for warning
- 2.5.3** Circle , Blue with white text or symbol
- 2.5.4** Triangle, Yellow with black symbol or text
- 2.5.5** Circle Red with a white background, red band and crossbar (10)

- 2.6 The lockout can be used when;
 - Working on electrical circuits
 - Attending to jammed mechanisms
 - Bypassing guards or safety devices
 - Doing maintenance or repair work on machinery
- (ANY TWO FACTS) (2)**

- 2.7 All equipment that is used by people at work and which protects them from risky situations that threaten their health and safety. **(ANY RELEVANT FACT) (1)**

- Safety helmets
 - ear muffs
 - safety boots
 - safety screens
 - hand protection
- (ANY TWO) (2)**

TOTAL **[50]**

