

BELGRADE CIRCUIT PLC

FINAL EXAMINATION (MEMO)

GRADE 7

NOVEMBER 2023

MARKS: 80

TIME : 90 MINUTES

Section	CONTENT	POSSIBLE MARKS	MARKS OBTAINED	MODERATED MARK
A	DESIGN PROCESS	40		
B	TECHNOLOGICAL KNOWLEDGE AND UNDERSTANDING	24		
C	TECHNOLOGY, SOCIETY AND THE ENVIRONMENT	16		
TOTAL		80		

SIGNATURE OF TEACHER: _____ **DATE:** _____

SIGNATURE OF DH: _____ **DATE:** _____

SECTION A TECHNOLOGICAL PROCESSES/ DESIGN PROCESS [40]

QUESTION 1

- 1.1. B✓
- 1.2. D✓
- 1.3. D✓
- 1.4. C✓
- 1.5. A✓
- 1.6. C✓
- 1.7. B ✓
- 1.8. B✓
- 1.9. B✓
- 1.10. D✓

Question 2

- 2.1. D✓
- 2.2. E✓
- 2.3. A✓
- 2.4. B✓
- 2.5. C✓

QUESTION 3

Read the scenario given then answer the questions that follow:

An informal settlement during a fire

Shack dwellers face many problems. Fires are particularly dangerous. Shack fires kill many people every year. People in shacks use open fires and candles for heat and light. When a candle falls over or an open fire is not dampened down to kill all the flames, a fire starts. These fires spread very quickly because shacks are built too close to each other. There are also no proper roads in between the shacks. This makes it difficult for fire fighters to reach the fires in order to put the fires out.

Your local municipality has asked your class to design and make models of temporary shelters suitable for disaster victims to live in. The shelters must be:

- Lightweight
- Safe and sturdy
- Large enough to house a family of six for a month
- Easy to transport
- Easy to assemble
- Waterproof
- Suitable for all weather conditions such as wind and heat

When designing the shelter, keep the health and safety of the people who will use the shelter in mind.

3.1. Identify the problem given in the scenario.
(2)

Shack dwellers struggle with fire and end up without a home ✓✓

3.2. Who will benefit from the solution?
(1)

Disaster victims ✓

3.3 How will the solution help the municipality?
(2)

Refugees will have some form of temporary shelter ✓✓

3.4 Write a design brief. Start your design brief by saying: I will be designing and making. (3)

I will design and make an emergency/temporally shelter for disaster victims to live in. ✓✓ The shelter must lightweight, safe and sturdy. ✓

3.5. List 3 specifications and 3 constraints for the problem you have identified.
(3)
1.

Specifications	Constraints
3.5.1. Lightweight ✓	3.5.4. Time needed to assemble the house ✓

Specifications	Constraints
3.5.2. Safe and sturdy ✓	3.5.5. Cost of building the house ✓
3.5.3. Easy to transport ✓	3.5.6. Availability of the material to be used ✓

3.6. What do you think can make a shelter unsafe?

The shelter is unsafe if it does not protect the people who live in it. ✓ ✓

3.7 Rubric for the circuit

Cells ✓ ✓

Bulb ✓

Open switch ✓

Show the direction of current ✓

Conductors ✓

3.8 Define the following terms

3.8.1 Conductor a material that is used to carry electricity through an electric circuit ✓ ✓

3.8.2 Electrical energy is the energy that flows through an electric circuit ✓ ✓

SECTION B: KNOWLEDGE AND UNDERSTANDING [24]

QUESTION 4

4.1. Name the two poles of the magnet shown

4.1.1. North pole ✓

4.1.2. South pole ✓

4.2. What will happen when the red end of one magnet come close to the other end of another magnet?

They repel each other. ✓

4.3. Explain the concept of a magnetic field.

A magnetic field is a space in which the magnetic effect is felt ✓ ✓

4.4. Define the following technological term:

Recycling:

The action or process of converting waste into reusable material/ product ✓✓

4.5 Differentiate between the ferrous and non-ferrous metal.

Ferrous contain irons and are magnetic✓

They corrode(rust) easily✓

Non-ferrous do not contain and not magnetic✓

They are malleable. ✓

4.6. Give any two recycling materials that can be recycled at home.

Cans✓

Glass✓

Paper✓

Plastic✓

Tins✓

Any four

4.7 Give the difference between Permanent and Temporary magnets. (4)

Permanent magnet for a long time ✓✓ while temporally magnet quickly lose their magnetic. ✓✓

4.8 Explain how to store a magnet in order to keep it safe. (2)

Store magnets with their keepers in place✓

Store magnets in their boxes in a safe place✓

Never drop or heat a magnet✓

Any two

Section C: TECHNOLOGY, SOCIETY AND THE ENVIRONMENT: [16]

Question 5

Read the following case study and the questions that follow:

The Simelane family left their farm after a devastating veld fire destroyed their home and all their crops. They are being housed in a temporary tented camp on the outskirts of the neighbouring town.

5.1. What is a refugee? (2)

Is someone who leaves their country to seek protection in another country because of war etc. ✓✓

5.2. Why would you not refer to the Simelane's as refugees? (2)

Simelane family is not from other country. ✓✓

5.3. What do you call people who are in the same position as the Simelane's? (2)

Internally displaced people. ✓

5.4. What kind of disaster is a veld fire? (1)

Natural disasters. ✓

5.5. When preparing foods to be supplied to a refugee camp, the conditions need to suit the people living in the camp. List 3 criteria to consider regarding food storage and/ or preparation. (3)

Does not spoil easily ✓

Relatively cheap ✓

Provides nutrients ✓

Familiar to people receiving it ✓ (Any relevant three)

5.6. Imagine you are a refugee in South Africa, name two problems you think you will face as a refugee. (2)

Safety ✓ and security ✓

Shelter ✓

(Any other relevant answer)

5.7 List the four fire-fighting gear. (4)

Turnout or bunker gear ✓

Wildfire suits ✓

Hazmat suits ✓

Fire proximity suits ✓

TOTAL MARKS: 80