

Candidate's Examination Number.....

SMZ

ZANZIBAR EXAMINATIONS COUNCIL

FORM THREE ENTRANCE EXAMINATION

056

WORKSHOP TECHNOLOGY

TIME: 2:30 HOURS

SUNDAY 27TH DECEMBER 2020 P.M

1. This paper consists of THREE (3) sections A, B and C.
2. Answer ALL questions in section A, B and C.
3. Write your examination number on every page of this booklet.
4. Write all answers in the space provided.
5. Use a blue or black pen in writing. Diagrams must be in pencil.
6. Calculators, cellular phones and unauthorized materials are not allowed in the examination room.

FOR EXAMINER'S USE ONLY					
Question number	Marks	Signature	Question number	Marks	Signature
1			8		
2			9		
3			10		
4			11		
5			12		
6			13		
7					
TOTAL					

This paper consists of 12 printed pages

SECTION A: (10 Marks)

Attempt ALL questions from this section.

1. Choose the correct answer and write its letter in the table provided below.
 - i) The ability of a metal to deform under load and to return its original form when the load is removed is termed as
 - A. Ductility
 - B. plasticity
 - C. Toughness
 - D. elasticity
 - E. permeability
 - ii) The type of steel used to manufacture cutting tool is
 - A. low carbon steel
 - B. Medium carbon steel
 - C. Alloy steel
 - D. High carbon steel
 - E. Stainless steel
 - iii) When an operator work with machine and develop a problem, the operator should
 - A. run away
 - B. Shout for help
 - C. looks for what happened
 - D. Switch off the machine
 - E. Work at steady speed
 - iv) Absorbing shocks to metals refers to
 - A. Brittleness
 - B. Softness
 - C. Hardness
 - D. Toughness
 - E. Ductility
 - v) Pig iron is produced by
 - A. melting process
 - B. Quenching process
 - C. Annealing process
 - D. extracting
 - E. Heating process
 - vi) Hot air is blown in the furnace through
 - A. Top of the furnace
 - B. middle of the furnace
 - C. Tuyeres
 - D. Bottom of the furnace
 - E. Outside of the furnace

- vii) An electric furnace is used to produce
- A. Poor steel B. Mild steel
C. High quality steel D. Plain steel
E. Wrought steel
- viii) Steel is an alloy of
- A. Iron and carbon B. Carbon and sulphur
C. Iron and silicon D. iron + Carbon
E. Silicon + Water
- ix) Metals are obtained by
- A. Extraction B. Oxidation
C. Purification D. Solidification
E. Melting and pouring
- x) Vice body is made by using
- A. Copper B. Cast iron
C. Zinc D. Cast iron E. Wrought iron

Answers

[illegible]

SECTION B: (45 marks)

Attempt ALL questions from this section.

2. a) Define alloy steel

b) List down three (3) materials used to alloy steels.

c) Explain the effect of silicon on plain carbon steel.

3. a) Distinguish between ductility and brittleness.

b) Define the term permeability.

4. a) Give two (2) advantages of using stainless steels.

b) Give the other name for stainless steel.

5. a) Write down two (2) examples for each of the following types of metals

i) Ferrous metals

ii) non ferrous metals

b) Briefly explain the meaning of "non ferrous metals"

6. a) Define hot rolling.

b) Why is cold rolling important?

c) List down any two (2) rolling mill arrangements.

7. a) Define the term heat treatment.

- b) What changes occur to steel when it is hardened?

- c) Mention one (1) application of wrought iron.

8. a) Outline three (3) classifications of hand tools.

- b) Name any two (2) important materials for thermosetting of plastics.

9. a) State the kind of furnace used to produce the highest quantity of steel.

b) Distinguish between Copular furnace and blast furnace.

10. a) What is the purpose of using cutting fluid during cutting process?

b) In metal cutting operations, cutting fluids are applied to a work piece chip zone in order to _____

c) Why soluble oils are used during cutting operations?

SECTION C: (45 Marks)

Attempt ALL questions from this section.

11. a) What do you understand by the term annealing?

Candidate's Examination Number.....

b) Examine the main objectives of annealing.

c) Distinguish between ferrite and cementite.

[illegible]

12. a) Discuss the properties of cast iron.

- b) Briefly explain the essentials to start fire in a working area.

- c) Describe the function of each of the raw materials used in the manufacturing of pig iron.

[illegible]

13. a) Briefly explain any five (5) characteristics of cast iron.

- b) Draw a well labeled diagram of a micrometer screw gauge.

[illegible]

Page 12 of 12