Candidate's Examination Number……

SMZ

ZANZIBAR EXAMINATIONS COUNCIL

FORM THREE ENTRANCE EXAMINATION

052 FITTING AND TURNING

TIME 2:30 HOURS **FRIDAY 1ST DECEMBER, 2017 am**

INSTRUCTIONS TO CANDIDATES

1. **This paper consists of THREE (3) sections A, B and C.**
2. **Answer all questions in sections A and B and any three questions from section C.**
3. **Answers for each question should be written in the space provided.**
4. **Calculators and cellular phones are not allowed in the examination room.**
5. **Write your examination number on every page of this booklet.**
6. **Use a blue or black pen in writing. The diagrams must be drawn in a pencil.**

FOR EXAMINER'S USE ONLY					
QUESTION NUMBER	MARKS	SIGNATURE	QUESTION NUMBER	MARKS	SIGNATURE
1			9		
2			10		
3			11		
4			12		
5			13		
6			14		
7			15		
8					
TOTAL					

This paper consists of 15 printed pages.

Candidate's Examination Number……

SECTION A: (10 Marks)

Answer ALL question in this section.

1. Choose the letter of the correct answer and write it in the table below.

i) Before you start any machine in a workshop you should know

A. its functions
B. Where to stop it
C. Who is responsible
D. Its tools
E. Its name

ii) Precision tools must be handled with care because they are

A. Very brittle
B. Expensive
C. Heavy
D. Very soft
E. Very light

iii) An accurate measurement of length may be done by using

A. Rule
B. Divider
C. Square
D. Depth gauge
E. Micrometer .

iv) Calipers should be held

A. Lightly when measuring
B. Tightly when measuring
C. Strongly when measuring
D. Firmly when measuring
E. Loosely when measuring

v) Before you test micrometer ensure that

A. You stand firm
B. Micrometer is open
C. Both faces are clean
D. One face is clean
E. The bench is clean

vi) A prick punch is a

A. Measuring tool
B. Layout tool
C. Cutting tool
D. Lathe tool
E. Hand tool

vii) V-blocks are used for

A. Supporting round work pieces or drilling
B. Clamping work piece
C. Lifting work piece
D. Testing work pieces
E. Testing round bars

viii) Lathe chick is made from

A. Aluminum
B. Cast iron
C. Wrought iron
D. Stainless steel
E. Carbon

ix) Which one of the following operations can be done on drilling machine?

A. Turning
B. Reaming
C. Knurching
D. Chasing
E. Forging

x) A pilot hole is drilled

A. Before intended hole
B. After intended hole
C. Before and after intended hole
D. When work is finished
E. Aside intended hole

ANSWERS

Item number	i	ii	iii	iv	v	vi	vii	viii	ix	x
Answer										

SECTION B: (30 Marks)

Answer ALL questions in this section.

2. State two (2) important applications of venire height gage.

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3. Briefly describe how the length of a back saw can be measured.

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4. a) Write down any two (2) purposes of flutes on a twist drill.

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b) List down three (3) main parts of a twist drill.

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5. Write down three (3) advantages of using a twist drill over the other forms of drills.

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6. Enumerate three (3) types of drills that can be used for drilling of thin materials.

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7. State any three (3) precautions that should be observed when measuring a round work piece with a steel rule.

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8. Name three (3) applications of a solid square.

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9. a) Identify the main parts of a combination set.

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b) State one application for each part identified in (a) above.

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10. How is the size of a hand and piller drilling machines generally given?

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11. a) Distinguish between a prick punch and a centre punch.

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b) Examine the importance of obeying safety rules in a mechanical workshop.

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SECTION C: (60 Marks)

Answer any three (3) questions.

12. a) Define a file.

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b) Describe the degree of coarseness for large files as well as for small files.

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c) Why should the hand never be rubbed across a surface being filed?l

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13. a) Explain any five (5) characteristics of a good cutting fluid.

b) Explain any five (5) economic benefits of the cutting fluid.

14. a) Define drilling .

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b) Why drilling is important?

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c) State the function of each of the following parts of drilling machine,

i) Spindle

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(ii) Spindle sleeve

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iii)Table

(iv) Hand feel lever

v) depth stop

(vi) Base

15. a) Identify four (4) factors that affects the speed of a machine.

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b) A 35mm diameter drill bit is used to drill a hole 63mm deep. The suggested feed is 1.25mm/rev and cutting speed is 40m/min. Assuming the tool approach and tool over travel is 5mm. Calculate

i) Number of revolution the spindle revolve in a minute.

ii) The feed speed.

iii) The cutting time.

iv) The rate of material removed in mm^3 per minute.

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