

Candidate's Examination Number.....

SMZ

ZANZIBAR EXAMINATIONS COUNCIL

FORM THREE ENTRANCE EXAMINATION

052

FITTING AND TURNING

TIME 2:30 HOURS

MONDAY 09TH DECEMBER, 2019 A.M

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 C.**
- 3. Answers for each question must be written in the spaces provided.**
- 4. Calculators and cellular phones are not allowed in the examination room.**
- 5. Write your examination number on every page.**
- 6. Use a blue or black pen in writing and drawing must be in 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					
7					
8					
TOTAL					

This paper consists of 12 printed pages

SECTION A: (10 Marks)

Answer ALL questions in this section.

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

- i) As a precaution when using drilling machine, you should
- A: Always remove burns from a drilled hole with hands
B: Have chuck key in a drill chuck all time
C: Never set speed or adjust the work or clamps
D: Keep your head near the revolving parts of the drill
- ii) Most brittle materials when drilled produce
- A: Long chips B: Discontinuous chips
C: Continuous chip D: Built up edge chip
- iii) The part of twist drill that is fixed in spindle or secured in the drill chuck is
- A: Tang B: Flute C: Web D: Shank
- iv) To regulate the depth of a blind hole drilled on a squared piece the operator must use
- A: Drill bit B: Depth stop
C: Depth gauge D: Twist drill
- v) When tapered shank of drill is small than the hole in the spindle adopt it with
- A: Sleeve B: Socket C: Drift D: Chuck
- vi) The material used for making twist drill is
- A: Stainless steel B: High speed steel C: Cast iron D: Mild steel

- vii) For general purpose drilling the drill point should be ground to an included angle of
- A: 90° B: 180°
C: 120° D: 125°
- viii) The cone shaped opening at the top of a drilled hole for flat or an oval head mechanical screw is
- A: Counter sinking B: Counter boring
C: Spot facing D: Chamfer
- ix) When drilling operation can be done on a lathe machine, the tool can be held on a
- A: Tool post B: Tool holder
C: Tool stock D: Lathe chuck
- x) Which one is the function of twist drill flutes?
- A: To provide strength of drill
B: To save as means of letting out coolant
C: To provide means for cutting
D: To clean the drilled hole.

ANSWERS

i	ii	iii	iv	v	vi	vii	viii	ix	x

SECTION B: (45 Marks)

Answer ALL questions in this section.

2. List down four (4) precautions that should be observed when using chisel.

3. Determine the number of revolutions per minute that can be used to drill a hole of 35mm diameter machine steel at a given speed of 40m/min.

4. State three (3) applications of scribing block.

5. Mention two (2) effects of un equal cutting edges of a twist drill.

6. Explain the criteria used to determine the size of a twist drill.

7. Enumerate three (3) ways used to find correct centre of a round bars.

8. State the main purpose of a drilling machine.

9. Give two (2) differences between temporary and permanent metal joining.

10. Determine the time taken in seconds to drill a hole through a 25mm thick plate using a rotating speed of 300 rev/min and feed of 0.25mm/rev.

SECTION C: (45 Marks)

Answer ALL questions in this section.

11. a) Define the following terms

i) Cutting speed of a lathe

ii) Feed lathe

b) Calculate the time taken to face a work piece of 80mm diameter.

Spindle speed is 90 rpm and cross speed is 0.3mm/rev

12. a) Distinguish between drilling and boring.

b) Describe the functions of the following parts of drilling machine

i) Base

ii) Column

iii) Table

iv) Spindle head

13. a) With the help of diagram(s) explain the differences between the parallel shank and taper shank of the twist drill.

Candidate's Examination Number.....

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b) Explain the functions of the following parts of twist drill.

i) Flutes

ii) Shank

iii) Lip.

[illegible]

Candidate's Examination Number.....

c) Why is drill sleeve important in the drilling machine?

[illegible]

[illegible]

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Page 12 of 12