higher education & training

Department:
Higher Education and Training
REPUBLIC OF SOUTH AFRICA

MARKING GUIDELINE

NATIONAL CERTIFICATE (VOCATIONAL)

FITTING AND TURNING
NQF LEVEL 2

12 MARCH 2018

This marking guideline consists of 5 pages.

QUESTION 1

1.1
1.1.1 True
1.1.2 True
1.1.3 True
1.1.4 False
1.1.5 True

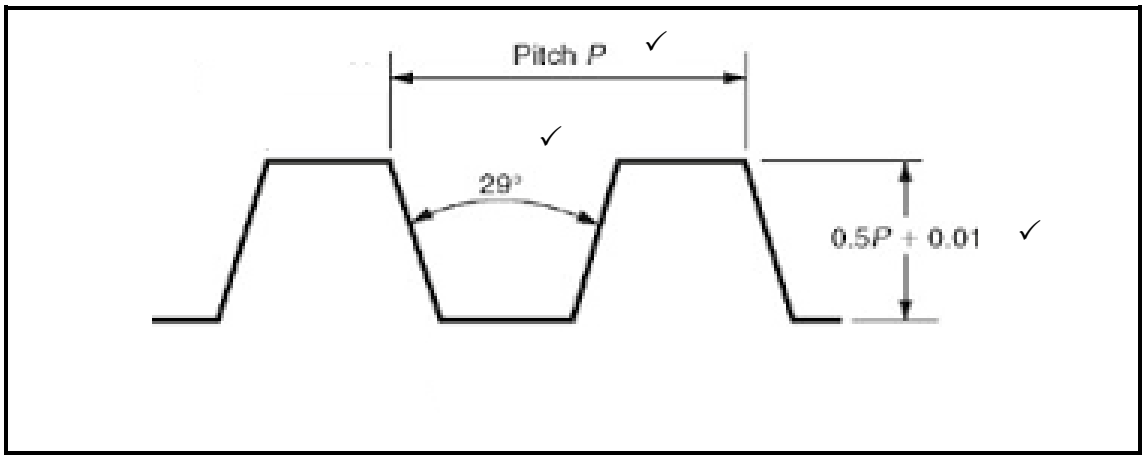
(5 × 1) (5)

1.2
A Wheel speed
B Wheel grade
C Size of wheel (3)

1.3
- Hardness of material
- Area of contact
- The speed of the wheel
- Feed rate
- Operator characteristics (Any relevant answers) (5)

1.4
- The fluid keeps the work piece cool.
- The fluid keeps the wheel clean.
- The fluid reduces rust on the machine. (Any TWO relevant answers) (2)

1.5



(TWO marks for accuracy) (5)

1.6
- First cut or taper tap
- Second cut or intermediate
- Plug tap (3)

1.7 A solid-die is used to cut external threads. (2)

[25]

QUESTION 2

2.1

A	Motor	
B	Spindle speed selector	
C	Hand feed lever	
D	Pillar	
E	Base	
F	Table	(6 × 1) (6)

2.2
- Ensure that the drilling machine is securely bolted to the floor.
- Check if the electrical cable is properly inserted in the power supply.
- Make sure that the table is secure.
- Inspect for any broken parts. (Any THREE relevant answers) (3)

2.3 D = 8mm=0,008m✓
S = 50m/min
N = ?

S = πXDXN✓

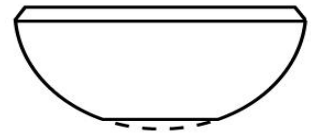
$$N = \frac{S}{\pi XD} \checkmark$$

$$= \frac{50}{(\pi X0{,}008)} \checkmark$$

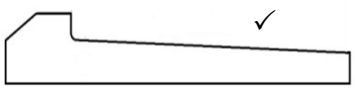
= 1989,44r/m ✓ (5)

2.4
- Drill bit blunt
- Incorrect speed
- Incorrect feed
- Metal too hard
- Loose bolts (Any relevant answers) (5)

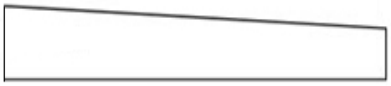
2.5



✓
Woodruff Key✓



✓
Gib Head Key✓



✓
Taper Key✓ (3× 2) (6)

[25]

QUESTION 3

3.1
- Eye protection
- Overalls
- Safety boots
- Hairnet for long hair
- Gloves for removing shavings and handling work pieces with sharp edges. (5)

3.2
- Parting tool
- Roughing tool
- Right-hand knife tool
- Facing tool
- Recessing tool (Any other relevant answers) (5)

3.3
3.3.1 G
3.3.2 F
3.3.3 C
3.3.4 H
3.3.5 E

(5 × 1) (5)

3.4 Install the knurling tool in the tool post taking note of the correct height; adjust it until it is square to the work piece. Turn the cross slide inwards until the tool makes a mark on the work piece. Use the manual or automatic feed to move the tool to the other end of the required knurling point on the work piece. Repeat until the desired finish is achieved. (Any other relevant answers) (5)

3.5
- Prolongs the machine life.
- Part of good housekeeping.
- To prevent rust.
- While cleaning the machine defects or any breaks in the machine can be identified.
- A clean lathe is a safe lathe/Accident prevention.

(Any other relevant answers) (5)
[25]

QUESTION 4

4.1 4.1.1
A Arbor
B Milling cutter
C Table
D Knee
E Base
F Column

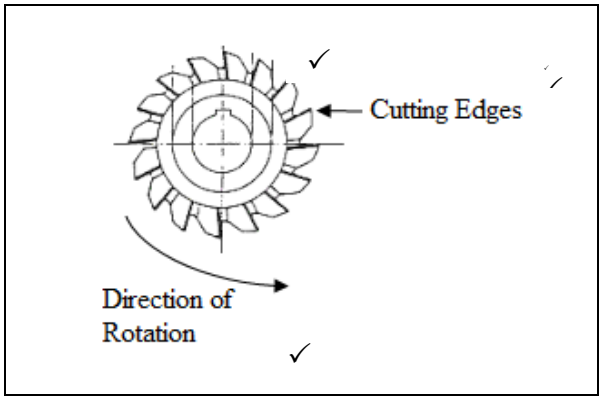
(6 × 1) (6)

4.1.2
X Horizontal movement of table
Y Vertical movement of table
Z Cross movement of table (6)

4.2
- Gear cutting
- Slot cutting
- Key way cutting
- Dove tail cutting
- Face cutting

(Any other relevant answers) (5)

4.3



Sketch: 2 marks
Labelling: 2 marks (4)

4.4
- The type of tool
- The hardness of material
- The feed
- Condition of material
- The cut (roughing or finishing cut)

(Any other relevant answers) (4)

[25]

TOTAL: 100