higher education & training

Department:
Higher Education and Training
REPUBLIC OF SOUTH AFRICA

NATIONAL CERTIFICATE (VOCATIONAL)

FITTING AND TURNING
NQF LEVEL 2

(6011042)

04 March 2024 (Y-paper)
13:00–16:00

This question paper consists of 7 pages.

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487Q1S2404

Please turn over

DEPARTMENT OF HIGHER EDUCATION AND TRAINING
REPUBLIC OF SOUTH AFRICA

NATIONAL CERTIFICATE (VOCATIONAL)
FITTING AND TURNING
NQF LEVEL 2
TIME: 3 HOURS
MARKS: 100

INSTRUCTIONS AND INFORMATION

1. Answer all the questions.
2. Read all the questions carefully.
3. Number the answers according to the numbering system used in this question paper.
4. Use only a black or blue pen.
5. Write neatly and legibly.

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QUESTION 1

1.1 Various options are given as possible answers to the following questions. Choose the answer and write only the letter (A–D) next to the question number (1.1.1–1.1.5) in the ANSWER BOOK.

1.1.1 Oil on the workshop floor must be cleaned …

A immediately.
B just before the end of one's shift.
C only after the supervisor tells you.
D when you receive a job card.

1.1.2 When can a centre lathe be operated at excessive high speed?

A When there is a breakdown
B A centre lathe must never be operated at excessive high speed
C Only when the supervisor gives permission
D When cutting soft wood on the centre lathe

1.1.3 When can equipment be stored in the area painted red in the workshop?

A When there is a breakdown
B When there is no other space in the workshop
C Equipment must not be stored in the area painted red in the workshop
D Only at the end of one's shift

1.1.4 Good housekeeping means …

A a well-fitted workshop.
B having good lighting in the workshop.
C a good supervisor who looks after the workshop.
D keeping the work area tidy, free from hazards, with a place for everything and everything in its place.

1.1.5 When should machinery and tools be cleaned?

A After use
B The next day
C While the machine is rotating
D Only after one has received a job card

(5 × 1) (5)

1.2 FIGURE 1 shows a Huntington wheel dresser with a set of cutters.

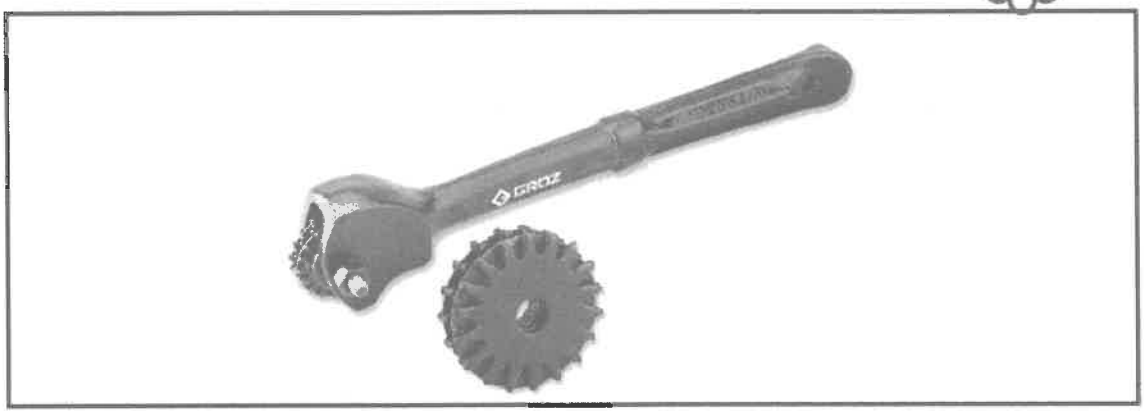


FIGURE 1

Name THREE disadvantages of this wheel dresser. (3)

Aluminium
Silicon
Brass

1.3 Name FIVE different types of grinding wheels. (5)

1.4 There are three main faults that can occur with grinding wheels.

It have beats inside. In order to checked it you must do

List TWO of these faults. (2)

1.5 Draw a neat labelled diagram of an ACME screw thread. Label the following:

The pitch, the angle of the thread and the depth of the thread. (5)

1.6 A hand tap has the following markings imprinted on it: M10 × 1.25.

What do these markings mean? (3)

1.7 Name TWO types of taper reamers. (2)
[25]

- Hand reamers
-

QUESTION 2

2.1 FIGURE 2 shows a pillar-type drilling machine.

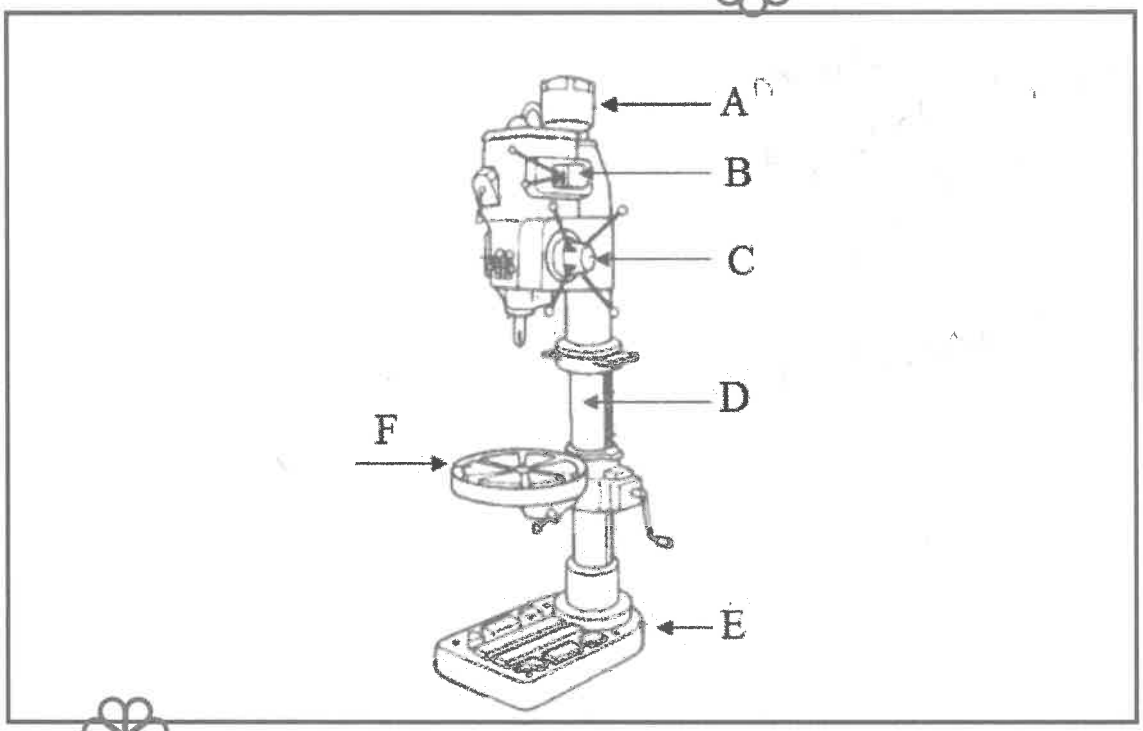


FIGURE 2

Name the labelled parts by writing only the answer next to the letter (A–F) in the ANSWER BOOK. (6)

2.2 If the cutting speed for mild steel is 25 m/min and a machine runs at 300 rpm, determine the diameter that can be used at that speed. (6)

2.3 State FIVE factors that need to be taken into consideration when mounting and supporting a workpiece in a drilling machine. (5)

2.4 List FOUR standard metric sizes of a rectangular key. (4 × 2) (8)

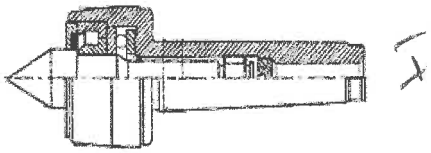
[25]

QUESTION 3

3.1 List FIVE centres on a centre lathe. (5)

3.2 Briefly describe FIVE steps to set the graduated sleeve of a cross slide to zero using a centre lathe. (5)

3.3 Choose a description from COLUMN B that matches a drawing in COLUMN A. Write only the letter (A–I) next to the question number (3.3.1–3.3.6) in the ANSWER BOOK.

COLUMN A		COLUMN B	
3.3.1		A	three-jaw chuck
3.3.2		B	tap wrench
3.3.3		C	lathe steady
3.3.4		D	ball centre
3.3.5		E	roughing tool
3.3.6		F	chuck key
		G	four-jaw chuck
		H	revolving centre
		I	parting tool

(6 × 1) (6)

3.4 List FOUR advantages of using a face plate when irregular-shaped workpieces are machined on a centre lathe. (4)

3.5 Give FIVE reasons why it is important to ensure that the centre lathe is switched off when loading and unloading a workpiece. (5)
[25]

QUESTION 4

4.1 FIGURE 3 shows a milling machine.

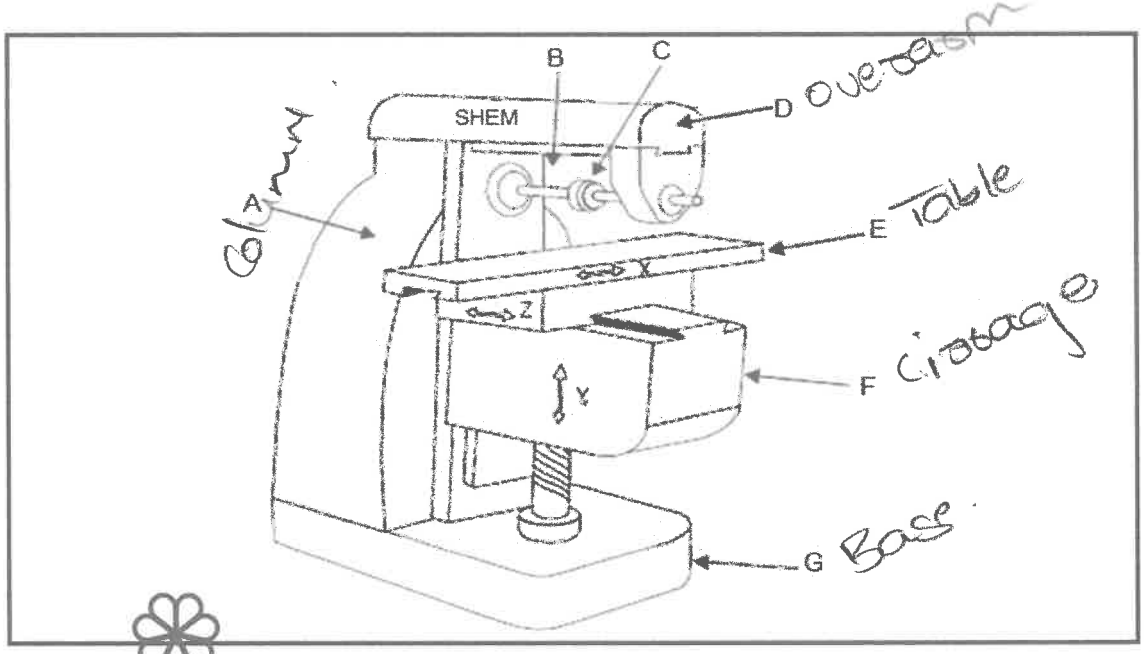


FIGURE 4

4.1.1 Name the labelled parts by writing only the answer next to the letter (A–G) in the ANSWER BOOK. (7)

4.1.2 List THREE types of milling machines found in the fitting shop. (3)

4.2 Give THREE advantages of using a bracing arm when milling operations are performed on a milling machine. (6)

4.3 Name TWO methods of cutting when using a milling machine. (4)

4.4 Name FIVE tools that can be used with a milling machine. (5)
[25]

TOTAL: 100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