higher education & training

Department:
Higher Education and Training
REPUBLIC OF SOUTH AFRICA

NATIONAL CERTIFICATE (VOCATIONAL)

MANUAL MANUFACTURING
NQF LEVEL 2

(6030092)

20 November 2018 (X-Paper)
09:00–12:00

This question paper consists of 6 pages and 2 answer sheets.

Copyright reserved

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. ALL drawings must be neat and fully labelled.
5. Answer QUESTIONS 1.3 and 5.1 on the ANSWER SHEETS (attached). Write your EXAMINATION NUMBER in the spaces provided, detach them from the question paper and hand them in with the ANSWER BOOK.
6. Write neatly and legibly.

Copyright reserved

QUESTION 1

1.1 The workplace should be safe and free of any hazardous conditions.

State THREE examples of hazardous conditions in a workplace such as a factory. (3 × 1) (3)

1.2 Indicate whether the following statements are TRUE or FALSE. Choose the answer and write only 'True' or 'False' next to the question number (1.2.1–1.2.4) in the ANSWER BOOK.

1.2.1 It is important to report any damaged equipment or tool while working.

1.2.2 One of the potential hazards in a workshop is a wet floor.

1.2.3 The acronym NOSA stands for National Occupational Standardisation Association.

1.2.4 The ON button on a machine is normally coloured white and the OFF button red.

(4 × 1) (4)

1.3 You are requested to fix a water pump and were provided with water pump pliers, item No. 76389 to perform the job. However, you found that the jaws of the water pump pliers are damaged and a bolt is missing.

Report these faults by completing the report on the ANSWER SHEET (attached).

Write your EXAMINATION NUMBER in the space provided, detach it from the question paper and hand it in with the ANSWER BOOK. (8)
[15]

QUESTION 2

2.1 Angles sometimes need to be bisected using drawing instruments.

You are requested to bisect a 48° angle. Make sketches to show how you would go about bisecting this angle using drawing instruments. (3 × 2) (6)

2.2 Drawings are created to design components, tools, etc.

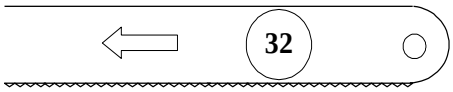
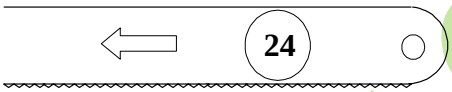
Explain the purpose for engineering drawings. (4)
[10]

Copyright reserved

QUESTION 3

3.1 Different saw blades are used for different types of applications.

Match each blade in COLUMN A with the correct use in COLUMN B. Write only the letter (A–C) next to the question number (3.1.1–3.1.3) in the ANSWER BOOK.

COLUMN A	COLUMN B
3.1.1 	A General purpose
3.1.2 	B Hard materials and thin materials (including thin-walled tubing)
3.1.3 	C Soft materials and thin materials

(3 × 1) (3)

3.2 Hacksaw blades are manufactured using different materials.

Name and explain THREE characteristics of the materials used in the manufacturing of hacksaw blades. (3 × 2) (6)

3.3 Files are classified into different categories.

Make sketches of THREE different grades of files and name them. (3 × 2) (6)

3.4 Name TWO factors that determine the nature of the grinding wheel to be used. (2 × 1) (2)

Copyright reserved

3.5 Verniers are used to measure the accuracy of manufactured components.

Label the parts of the vernier indicated in FIGURE 1. Write only the answer next to the question number (1–8) in the ANSWER BOOK.

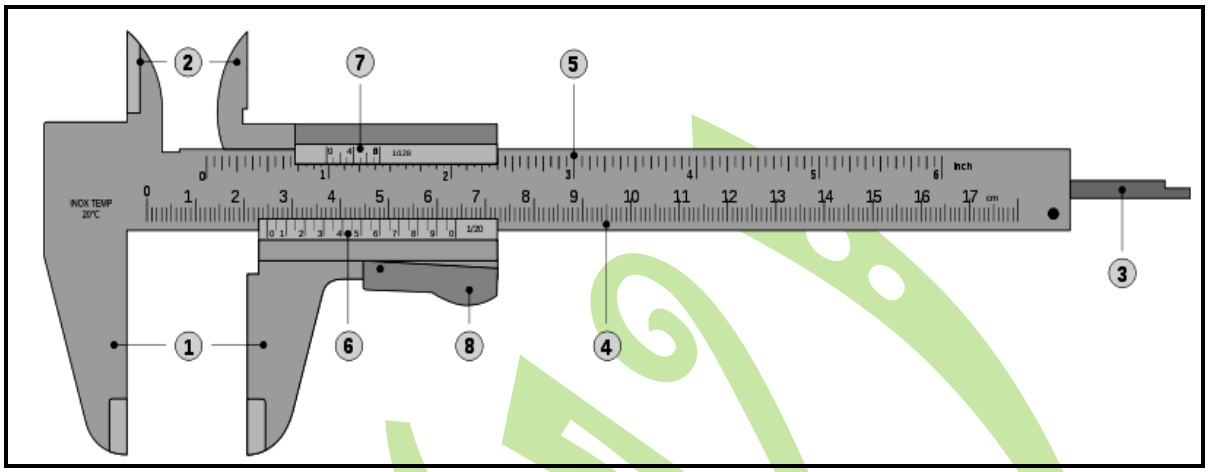


FIGURE 1 (8)

[25]

QUESTION 4

4.1 Symbols are used to indicate different welding processes.

Draw the symbols that are used to indicate the following welding processes:

4.1.1 Weld-all-around

4.1.2 Flush welding

4.1.3 Concave surface contour

4.1.4 Convex surface contour

4.1.5 Site weld

(5 × 2) (10)

4.2 When the soldering is being performed, safety considerations need to be adhered to.

State FIVE safety considerations when soldering is being performed. (5 × 1) (5)

4.3 Make a fully labelled, freehand drawing to illustrate the construction of a gas-welding torch. (7)

4.4 State FOUR safety rules to adhere to before performing a gas-welding task in a welding bay. Give a reason for each rule you named. (4 × 2) (8)

[30]

QUESTION 5

5.1 Plan the operation necessary to manufacture the screw-thread gauge shown in FIGURE 2 by completing the project planning sheet on the ANSWER SHEET (attached).

Write your EXAMINATION NUMBER in the space provided, detach it from the question paper and hand it in with the ANSWER BOOK.

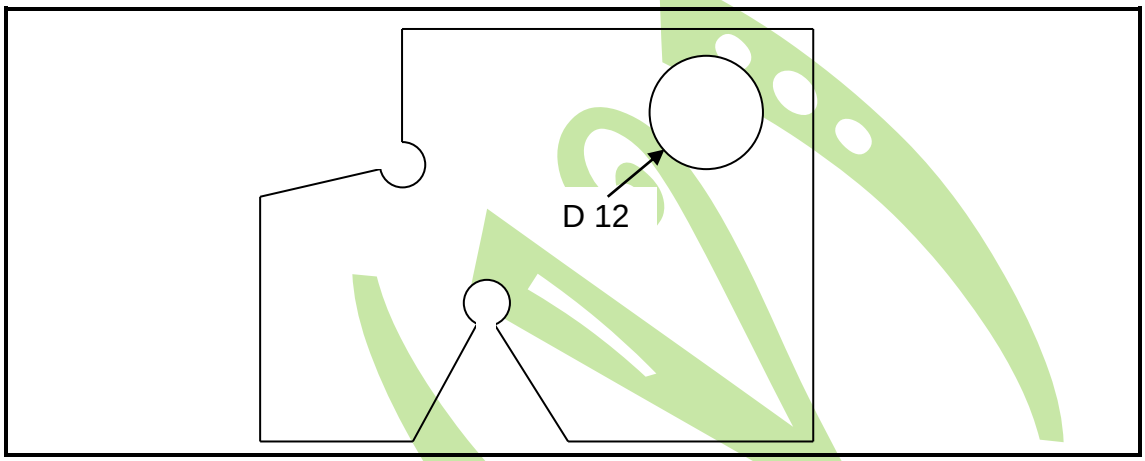


FIGURE 2 (10)

5.2 Doing maintenance and keeping workplaces clean is part of the daily procedure which is called housekeeping.

Name SIX basic areas of good housekeeping and maintenance and give a brief explanation of each. (6)

5.3 Different metals have their own properties.

Draw a table indicating two types of cast iron and stating ONE property and ONE use of each type. (4)

[20]

TOTAL: 100

Copyright reserved

ANSWER SHEET

EXAMINATION NUMBER: | | | | | | | | | | | | | |

QUESTION 1.3

FAULTY TOOL REPORT			
Tool name:			
Description:			
Item number:		**Date:**	
Description of fault/faults:			
Reporting person:		**Signature:**	
For Office Use			
Stock number:			

Repair of Tool

Service provider	**Date sent**	**Date back**	**Cost of repairs**	**Responsible person**	**Signature**

(8)

Copyright reserved

ANSWER SHEET

EXAMINATION NUMBER: | | | | | | | | | | | | | |

QUESTION 5.1

PROJECT PLANNING SHEET

WORK PLAN	
Name:	
Name of task:	
Starting date:	End date:

PROCEDURAL PLAN

State all the operations to be performed in the correct sequence and name all the tools and equipment needed to accomplish the work task according to plan.

PROCESS	**TOOLS/EQUIPMENT**
(5)	(5)

(5 × 2) (10)

Copyright reserved