higher education & training

Department:
Higher Education and Training
REPUBLIC OF SOUTH AFRICA

NATIONAL CERTIFICATE (VOCATIONAL)

MANUAL MANUFACTURING
NQF LEVEL 2

(6030092)

9 March 2020 (X-paper)
09:00–12:00

This question paper consists of 5 pages and 1 addendum.

329Q1S2009

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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. Write neatly and legibly.

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QUESTION 1

1.1 Explain the basic first-aid procedures to follow when a person is choking. (5)

1.2 Draw a fully labelled basic diagram to explain the essentials needed to start and maintain a fire. (4)

1.3



[Source: *https://www.google.co.za/search?q=hazardous+acts+in+a+workplace*]

FIGURE 1

Identify SIX dangerous acts shown in FIGURE 1. (6)
[15]

QUESTION 2

2.1 List SIX drawing instruments used to draw a technical drawing. (6)

2.2 Draw symbols to explain the difference between *first-angle orthographic projection* and *third-angle orthographic projection*. (2 + 2) (4)
[10]

QUESTION 3

3.1

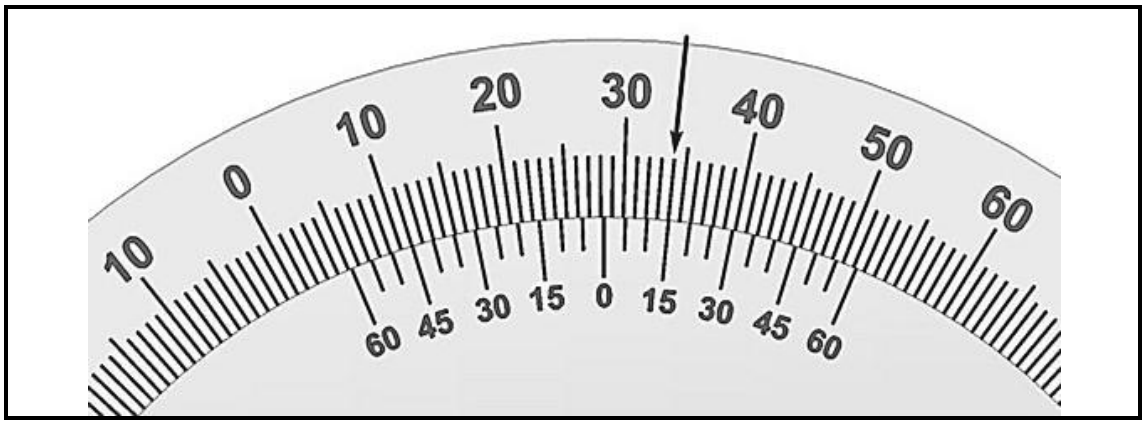

FIGURE 2

Give the reading indicated by the arrow on the vernier protractor shown in FIGURE 2. (1)

3.2 List FOUR ways to take care of a measuring tape. (4)

3.3 Draw a fully labelled diagram to explain how to check the squareness of a large workpiece. (5)

3.4 Explain the term *solid dies*. (3)

3.5 Draw fully labelled diagrams to differentiate between FOUR types of metal chisels. (4 × 3) (12)

[25]

QUESTION 4

4.1 Explain THREE advantages of an electronic face shield when doing arc welding. (3 × 2) (6)

4.2 Draw TWO symbols to differentiate between *weld all around* and *site weld*. (2 + 2) (4)

4.3 4.3.1 Name THREE welding leads used for arc welding. (3)

4.3.2 Explain the purpose of each of the welding leads named in QUESTION 4.3.1. (3 × 2) (6)

4.4 Draw THREE diagrams for V-welding both sides indicating detail, section and elevation. (3 × 2) (6)

4.5 State the factors to consider when selecting the correct soldering iron. (5)

[30]

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QUESTION 5

5.1

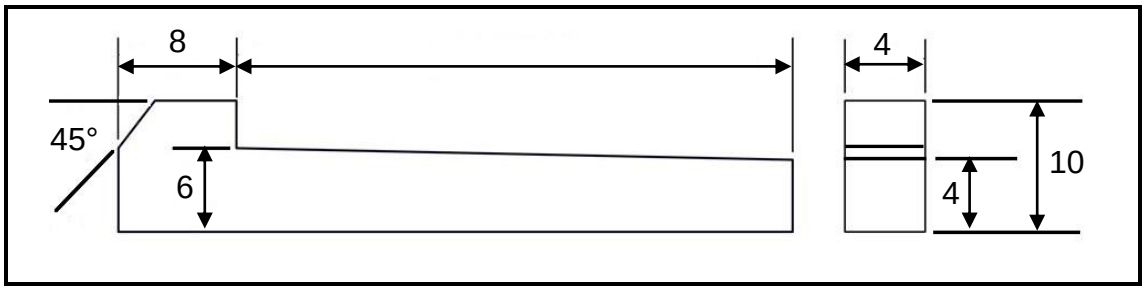

FIGURE 3 (12)

Refer to FIGURE 3 and complete the work plan to manufacture the machine key on the ADDENDUM (attached). The size of the mild-steel block is 55 mm × 15 mm × 10 mm.

5.2 Explain the heating of metal. (3)

5.3 Give FIVE advantages of good housekeeping. (5)

[20]

TOTAL: 100

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ADDENDUM

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

QUESTION 5.1

Submit the ADDENDUM with the ANSWER BOOK.

Work plan					
Name:					
Name of task:					
Start date:		**End date:**			
Bill of materials					
Part name:	**No:**	**Material:**	**Size:**	**Unit cost:**	**Total cost:**
Procedural plan					
List all the operations to be performed in the correct sequence and list the tools and equipment needed to accomplish the work task according to the plan.					
Item	**Operation**			**Tools**	

[12]

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