higher education & training

Department:
Higher Education and Training
REPUBLIC OF SOUTH AFRICA

NATIONAL CERTIFICATE (VOCATIONAL)

MANUAL MANUFACTURING
NQF LEVEL 2

NOVEMBER EXAMINATION

(6030092)

10 November 2016 (X-Paper)
09:00–12:00

This question paper consists of 6 pages and 1 addendum.

TIME: 3 HOURS
MARKS: 100

INSTRUCTIONS AND INFORMATION

1. Answer ALL the questions.
2. Answer QUESTION 5.3 on the attached ADDENDUM and hand it in with the ANSWER BOOK.
3. Read ALL the questions carefully.
4. Number the answers according to the numbering system used in this question paper.
5. Write neatly and legibly.

QUESTION 1

1.1 Indicate whether the following statements are TRUE or FALSE. Choose the answer and write only 'true' or 'false' next to the question number (1.1.1–1.1.7) in the ANSWER BOOK.

1.1.1 It is important to report any damaged equipment or tools while working.

1.1.2 It is safe to work on a pedestal drill wearing loose clothing.

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

1.1.4 One cannot be electrocuted when working with water and electricity simultaneously.

1.1.5 Machine guarding is not important on rotating machinery.

1.1.6 The acronym NOSA stands for National Occupational Safety Association.

1.1.7 The ON button on a machine is normally coloured green and the OFF button red.

(7 × 1) (7)

1.2 Study FIGURE 1 below and answer the questions.

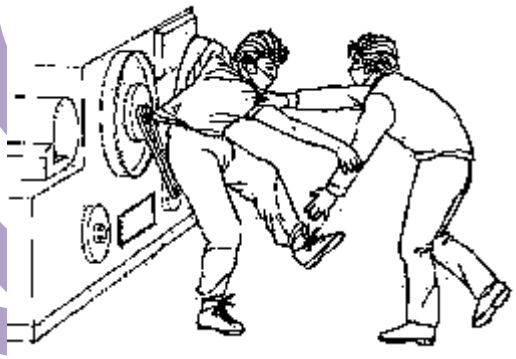

FIGURE 1

1.2.1 Name TWO hazard prevention methods. (2)

1.2.2 Give TWO characteristics of good safety boots. (2)

1.2.3 Explain why the workers are wearing safety boots. (1)

1.2.4 Explain why the workers are wearing masks. (1)

1.2.5 Describe how the potential hazard can be prevented. (1)

1.2.6 Explain what is the *potential hazard*? (1)

[15]

QUESTION 2

2.1 Draw the symbols showing the TWO orthographic projections and name them. (6)

2.2 Draw a freehand 3D box diagram and point out the THREE sides in third angle orthographic projection. (4)

[10]

QUESTION 3

3.1 Explain, with the aid of a sketch, the procedure you will follow to check an engineering square for squareness. (4)

3.2 Explain the purpose of marking-off procedures when producing a component. (2)

3.3 List FIVE things that can be checked by measuring techniques. (5)

3.4 Explain the importance of *marking out*. (4)

3.5 Label the parts (1–8) of the tool in FIGURE 2 shown below.

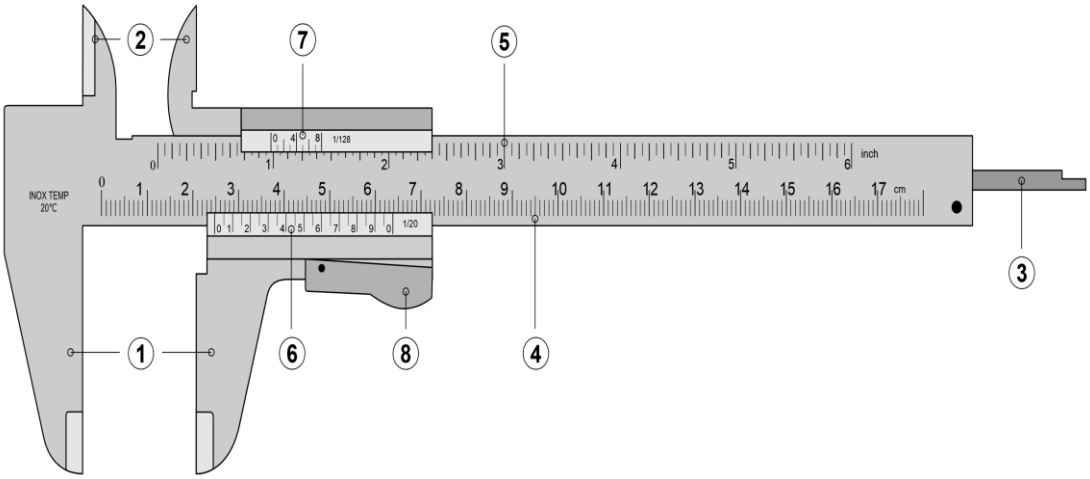

FIGURE 2 (8)

3.6 Identify the tool shown below in FIGURE 3 and name ONE use of it.

FIGURE 3 (2)

[25]

QUESTION 4

4.1 Explain the fundamental difference between *gas welding* and *gas cutting*. (4)

4.2 List FIVE safety rules that must be considered when working in a welding bay. (5)

4.3 Name THREE common items of protective clothing that you are required to wear when performing electric arc-welding applications. (3)

4.4 Make a fully labelled freehand drawing to illustrate the construction of gas welding components. (10)

4.5 Make THREE drawings illustrating the difference between an oxidising flame, carbonising flame and a neutral flame. (3 × 2) (6)

4.6 Explain what is meant by *soldering.* (2)
[30]

QUESTION 5

5.1 List FIVE basic elements of good housekeeping. (5)

5.2 Safety signs and colour are very important in the workshop.

Give FIVE reasons why they are so important? (5)

5.3 You are required to manufacture the bracket shown in FIGURE 4 below. Complete a workplan on how to manufacture the bracket in sequence of events. Material used is 1,6 mm mild steel.

Complete the attached ADDENDUM and submit it with the ANSWER BOOK.

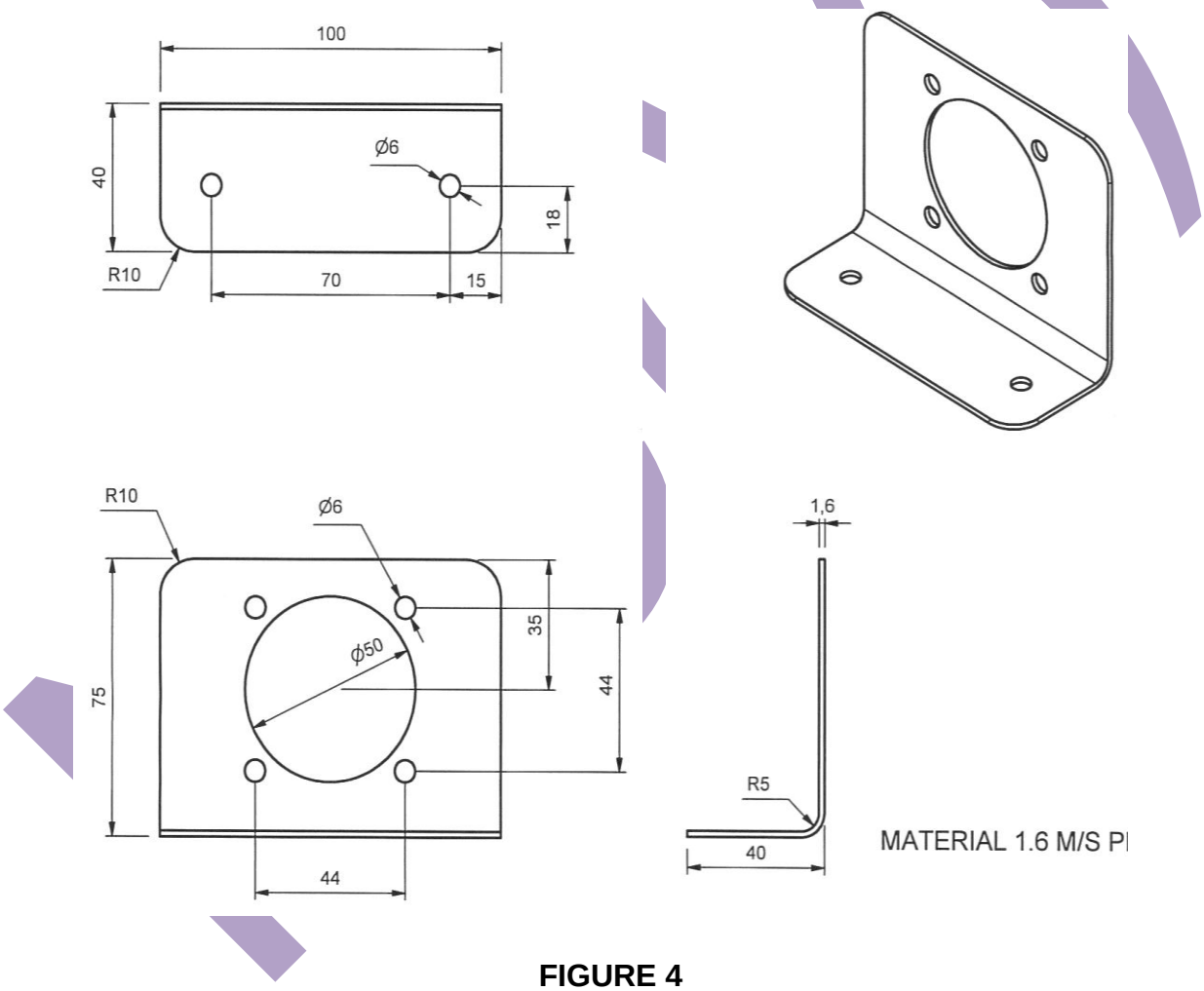

FIGURE 4 (10)

[20]

TOTAL: 100

ADDENDUM **EXAMINATION NUMBER:** | | | | | | | | | | | | | |

QUESTION 5.3

Workplan	
NAME:	
Name of task:	
Start date:	End date:

Procedure plan

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

PROCESS	**TOOLS/EQUIPMENT**