higher education & training

Department:
Higher Education and Training
REPUBLIC OF SOUTH AFRICA

NATIONAL CERTIFICATE (VOCATIONAL)

MANUAL MANUFACTURING
NQF LEVEL 2

SUPPLEMENTARY EXAMINATION 2013

(6030092)

11 March (X-Paper)
09:00 – 12:00

This question paper consists of 5 pages and 2 annexures.

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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. Diagrams must be neatly drawn and labelled.
5. Write neatly and legibly.

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QUESTION 1

1.1 Fire consists of three elements.

List the THREE elements of fire. (3)

1.2 You have found a water pump pliers item no 19503 that has damaged jaws as well as a bolt missing. You have been asked to complete the faulty report. Complete the report on ANNEXURE A and place it in the ANSWER BOOK. (8)

1.3 Name TWO safety hazards and TWO health hazards. (2 × 2) (4)

[15]

QUESTION 2

2.1 Explain the purpose and reason for engineering drawings. (4)

2.2 Draw TWO lines AB and BC. They form an angle of 90° with each other and their lengths are 55 mm and 70 mm respectively.

By construction obtain the centre of a circle which when drawn, will pass through A, B and C. (6)

[10]

QUESTION 3

3.1 Arrange the tools named below with the relevant process and explanation.

Write only the question number (3.1.1 – 3.1.5) and the letter (A – E) and (Q – Z) in your ANSWER BOOK.

NAME		**PROCESS**		**EXPLANATION**	
3.1.1	Center punch	**A.**	Assembling	**Q.**	Refers to scribing lines on work-pieces
3.1.2	File	**B.**	Measuring	**R.**	Measuring small gaps
3.1.3	Scriber	**C.**	Punching	**S.**	Refers to joining material by various mechanical means
3.1.4	Feeler gauge	**D.**	Forming	**X.**	Punching small holes for drilling
3.1.5	Spanner	**E.**	Marking off	**Z.**	Refers to forming materials by filing edges, surfaces and shapes

(10)

3.2 Refer to FIGURE 1 and answer the questions below.

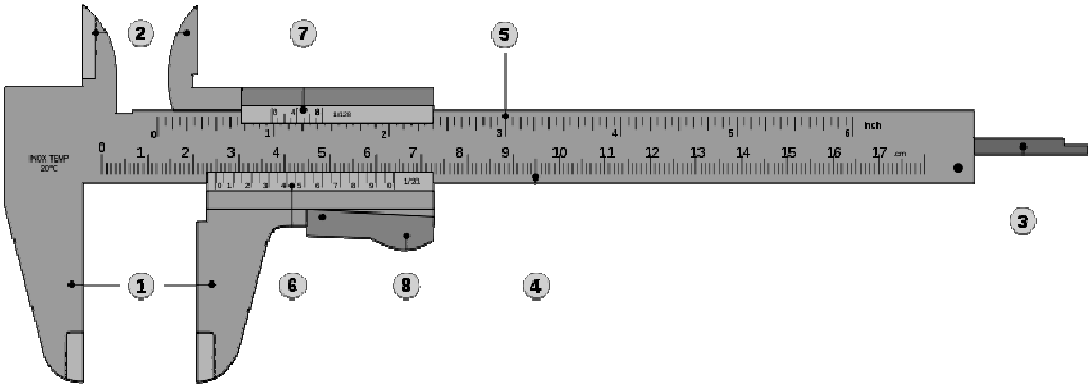

FIGURE 1

3.2.1 Identify the tool shown in FIGURE 1 above. (1)

3.2.2 Label the parts (1 – 8) of the tool shown in FIGURE 1 above. (8)

3.3 Explain the following processes:

3.3.1 Reaming (1)

3.3.2 Tapping (1)

3.3.3 Forming (1)

3.3.4 Cutting (1)

3.4 Name TWO factors to determine the nature of a grinding wheel. (2)
[25]

QUESTION 4

4.1 Soldering is performed for different applications.

Name any FOUR of these applications. (4)

4.2 Draw the following fillet-weld joints:

4.2.1 Multiple (2)

4.2.2 Obtuse (2)

4.2.3 Acute (2)

4.2.4 Mitre (2)

4.2.5 Convex (2)

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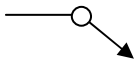
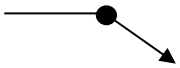
4.3 List FIVE safety considerations when soldering. (5)

4.4 Name THREE factors which the selection of soldering iron depends on. (3)

4.5 Identify the following symbols:

4.5.1  (2)

4.5.2  (2)

4.6 Draw sketches showing the TWO welding joints below:

4.6.1 Butt joint (2)

4.6.2 Overlapping joint (2)

[30]

QUESTION 5

5.1 Briefly describe the shape and colours used for the following signs:

5.1.1 Caution (2)

5.1.2 Prohibition (2)

5.1.3 Safe condition (2)

5.1.4 Mandatory (2)

5.1.5 Supplementary (2)

5.2 Using a project planning sheet, plan the operation necessary to manufacture the screw-thread gauge in FIGURE 2 below. Refer to ANNEXURE B and complete the plan. Remove ANNEXURE B from the question paper and place it in the ANSWER BOOK.

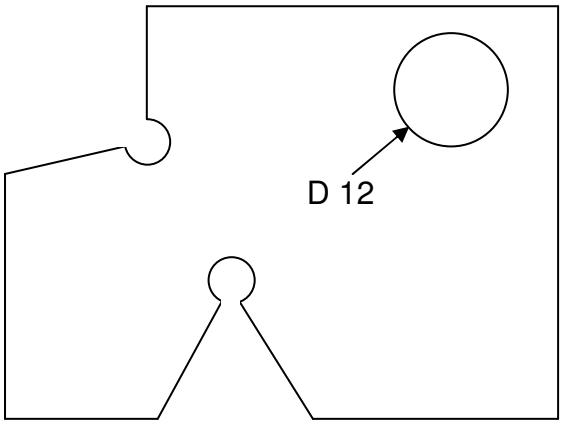


FIGURE 2

(10)

[20]

TOTAL: 100

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ANNEXURE A **EXAMINATION NUMBER:**

QUESTION 1.2

Faulty Tool Report:			
Tool name:			
Description:			
Item number:		**Date:**	

Fault description:	

Reporting person:		**Signature:**	

For office use

Stock number:	

Repair of tool

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

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ANNEXURE B **EXAMINATION NUMBER:**

QUESTION 5.2

Work plan	
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**

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