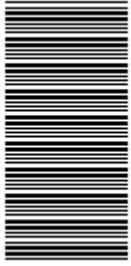


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higher education & training

Department:
Higher Education and Training
REPUBLIC OF SOUTH AFRICA

NATIONAL CERTIFICATE (VOCATIONAL)

**MANUAL MANUFACTURING
NQF LEVEL 2**

NOVEMBER EXAMINATION

(6030092)

**15 November 2013 (X-Paper)
09:00–12:00**

This question paper consists of 8 pages and 1 addendum.

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. Complete ADDENDUM A and hand it in with your ANSWER BOOK.
 5. Only a PENCIL, ruler and rubber are to be used in producing freehand drawings.
 6. Write neatly and legibly.
-

QUESTION 1

- 1.1 Name TWO safety precautions to be taken under the following working conditions:
 - 1.1.1 When working with electricity
 - 1.1.2 When working with pneumatic (air pressure) equipment
 - 1.1.3 When working with mechanical machines (3 × 2) (6)

- 1.2 What is the purpose of the *Occupational Health and Safety Act*? (1)

- 1.3 1.3.1 What is meant by the acronym NOSA?

- 1.3.2 What is the purpose of NOSA? (2 × 1) (2)

- 1.4 What is the advantage of being associated with NOSA? (1)

- 1.5 Study FIGURE 1 and write down FIVE health and safety hazards seen in the picture.



FIGURE 1

(5)
[15]

QUESTION 2

2.1 FIGURE 2 shows an isometric view.

Draw the THREE orthographic views in first-angle projection (FRONT, SIDE and TOP VIEW).

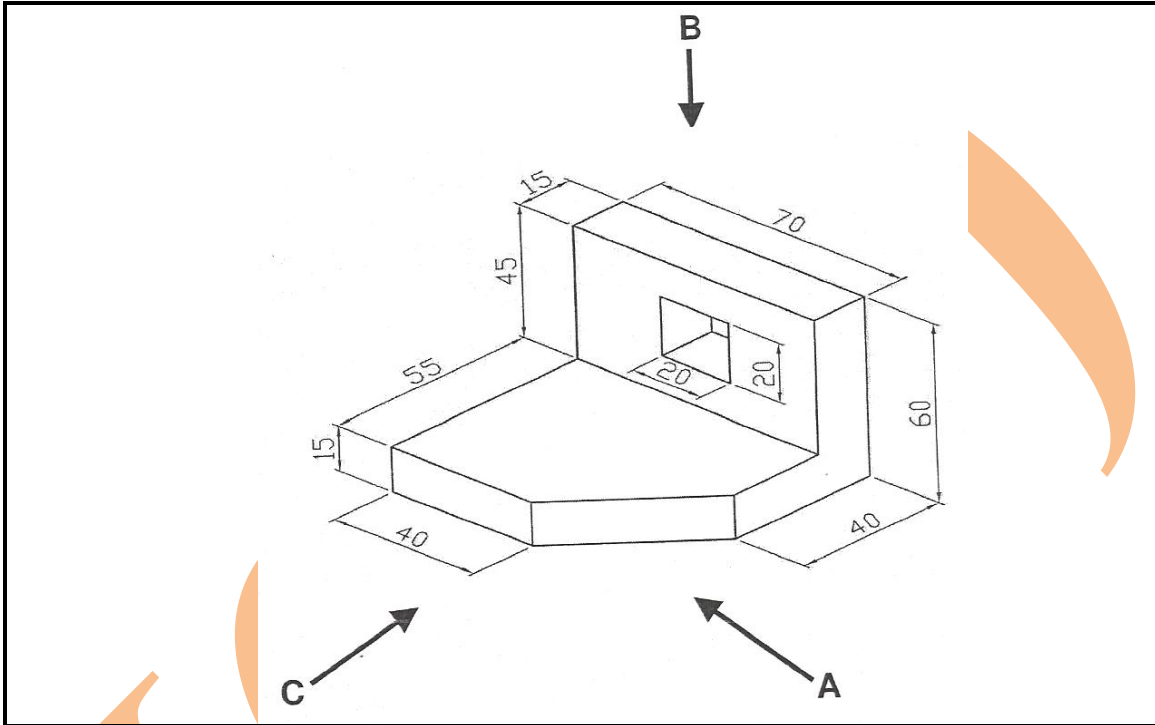


FIGURE 2

(9)

2.2 What is the purpose of flexi-curves in engineering drawing?

(1)

[10]

QUESTION 3

3.1 3.1.1 Name the tool shown in FIGURE 3.

(1)

3.1.2 State ONE function of the tool shown in FIGURE 3.

(2)

3.1.3 What is the accuracy of the tool shown in FIGURE 3?

(1)

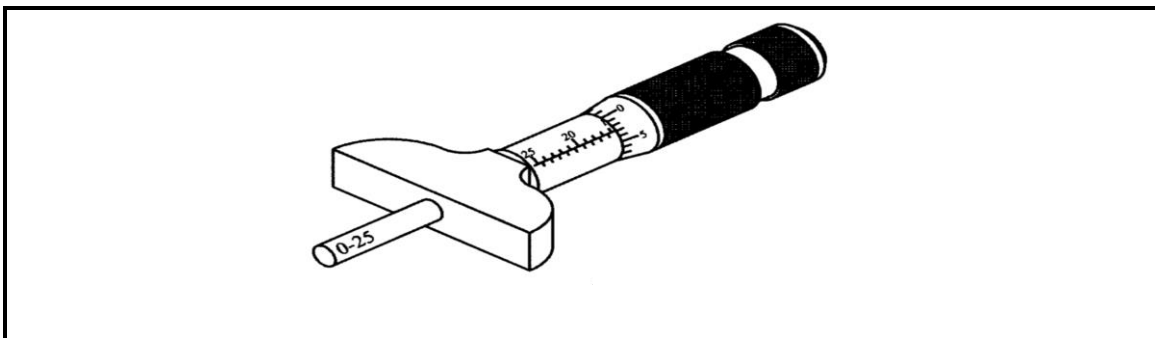


FIGURE 3

3.2 State FIVE safety precautions to consider when using a hacksaw. (5)

3.3 Explain what is meant by the following terms regarding a grinding wheel:

3.3.1 The ring test

3.3.2 Dressing a grinding wheel

(2 × 2) (4)

3.4 Identify the tools shown in the six FIGURES below. Write only the name(s) and ONE use of each tool next to the question number (3.4.1–3.4.6) in the ANSWER BOOK.

3.4.1

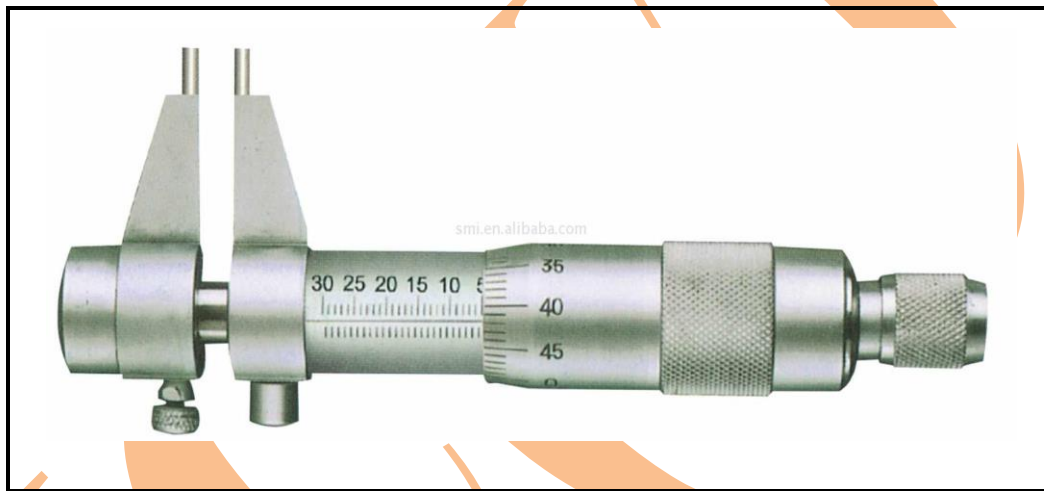


FIGURE 3.4.1

3.4.2



FIGURE 3.4.2

3.4.3



FIGURE 3.4.3

3.4.4



FIGURE 3.4.4

3.4.5



FIGURE 3.4.5

3.4.6

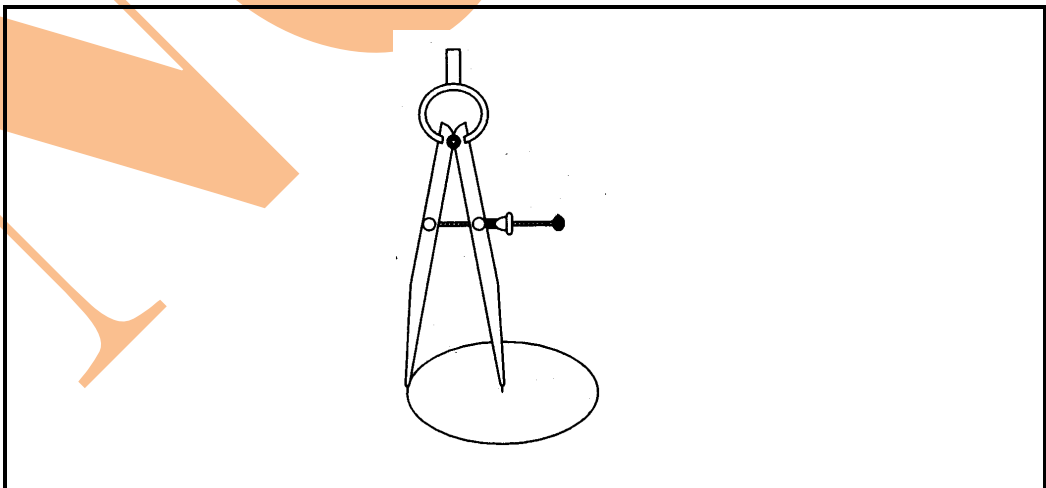


FIGURE 3.4.6

(6 × 2)

(12)
[25]

QUESTION 4

4.1 State THREE functions of the electrode holder. (3)

4.2 Choose a description from COLUMN B that matches an item in COLUMN A. Write only the letter (A–F) next to the question number (4.2.1–4.2.6) in the ANSWER BOOK.

COLUMN A		COLUMN B	
4.2.1	Electrode lead	A	joint in which the ends of two pieces of metal are joined without overlapping
4.2.2	Workpiece clamps	B	pain, watering of the eyes, and a feeling of sand in the eyes
4.2.3	Welding mask	C	the cable that connects the electrode holder to the welding machine
4.2.4	Arc eyes	D	it establishes the connection between the end of the workpiece and the work lead
4.2.5	Butt joint	E	substance used in soldering and brazing to make the metals more fusible
4.2.6	Flux	F	a special helmet to protect the eyes and the face from the extremely bright arc

(6 x 1) (6)

4.3 Name FOUR methods you would use to perform a weld ability test on different metals. (4)

4.4 Soldering is the process of joining metals. You are required to perform tinning of the tip of a soldering iron.

Explain how you would go about tinning the tip of a soldering iron. (3)

4.5 Identify the symbols shown in FIGURE 5. Write only the symbol name next to the number (1–7) in the ANSWER BOOK.

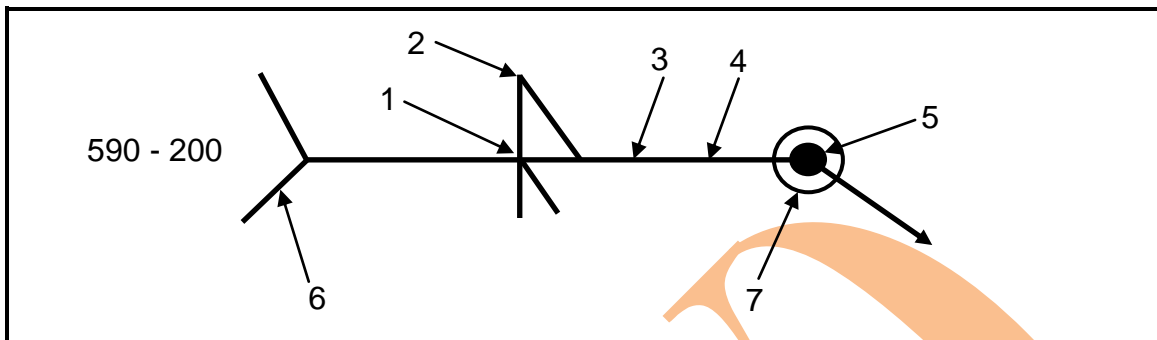


FIGURE 5

4.6 Name FIVE safety considerations when performing soldering.

4.7 When do you clean the tip of a soldering iron?

(7)

(5)

(2)

[30]

QUESTION 5

5.1 What is meant by the term *good housekeeping*?

5.2 Name FIVE accidents which could be caused by poor housekeeping.

5.3 Describe FOUR benefits of good housekeeping.

5.4 **SITUATION:** A student walking in the workshop tripped over electrical cables which were on the floor from an extension used by another student on the other side of the workshop. He struck his head against a corner of the table which cut his head and this led to severe bleeding. You notice the incident happening and you now have to fill in an accident report.

Complete the accident report on ADDENDUM A (attached) and hand it in with your ANSWER BOOK.

(9)

[20]

TOTAL: 100

ADDENDUM A**EXAMINATION NUMBER:**

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CENTRE NUMBER:

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QUESTION 5.4

NAME OF INJURED:										DATE REPORTED:									
LOCATION OF INCIDENT:										DATE AND TIME OF INCIDENT:									
DISCRPTION OF DAMAGE:																			
DAMAGE/INJURY/LOSS																			
BUILDING		EQUIPMENT		FLOOR		MACHINERY		VEHICLE		INJURY		PRODUCT							
GENERAL CAUSES																			
STRUCK	FALL	HANDLING	TRANSPORT	FIRE	MACHINE	ELECTRICITY	FALLING OBJECTS	STRUCK AGAINST											
Was this in the course of performing normal duties?										YES					NO				
UNSAFE ACTS					UNSAFE CONDITIONS					PERSONAL FACTORS									
OPERATING WITHOUT AUTHORITY					INADEQUATELY GUARDED					LACK OF KNOWLEGE/SKILL									
OPERATING AT UNSAFE SPEEDS					UNGUARDED					PHYSICAL/MENTAL									
DISABLING SAFETY DEVICES					DEFECTIVE TOOLS AND EQUIPMENT					INCOMPATIBILITY									
USING EQUIPMENT UNSAFELY					HAZARDOUS ARRANGEMENT					IMPROPER ATTITUDE									
USING UNSAFE EQUIPMENT					UNSAFE DESIGN OR CONSTRUCTION					MOTIVATION									
UNSAFE LOADING/PLACING					POOR LIGHTING					JOB FACTORS									
TAKING UNSAFE POSITION					UNSAFE CLOTHING					INADEQUATE WORK STANDARDS									
WORKING ON UNSAFE OR MOVING EQUIPMENT					POOR FLOOR CONDITION					HIGH-RISK CONDITION									
TRANSFER TO ANOTHER JOB					POOR VENTILATION														
CONTROL STEPS TO PREVENT REOCCURANCE																			
NAME & SIGNATURE OF EMPLOYER										DATE									
PERSONAL FACTORS										JOB FACTORS									
ATTEND TRAINING					WRITE WORK STANDARDS					MODIFY									
GIVE PERSONAL INSTRUCTION					REVISE WORK STANDARDS					LOCKOUT									
HAVE MEDICAL TIMETABLE					JOB SAFETY STANDARDS					HOUSEKEEPING									
ATTEND SHE COMMITTEE					REVIEW PROCESS					REMOVE									
					GUARD					PROVIDE PROTECTION									
					REPAIR					IMPROVE									
EMPLOYER'S FOLLOW UP ACTION																			
ACTION TAKEN					BY WHOM					WHEN									
NAME AND SIGNATURE OF EMPLOYER										DATE									

(9)