

**higher education  
& training**

Department:  
Higher Education and Training  
**REPUBLIC OF SOUTH AFRICA**

**NATIONAL CERTIFICATE (VOCATIONAL)**

**PLANT AND EQUIPMENT  
NQF LEVEL 2**

**NOVEMBER 2011**

**(12030052)**

**1 November (X-paper)  
09:00 – 12:00**

**This question paper consists of 6 pages.**

**TIME: 3 HOURS  
MARKS: 100**

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**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 well balanced.
  5. ALL work you do not want to be marked must be clearly crossed out.
  6. Write neatly and legibly.
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**QUESTION 1: INTRODUCTION TO PLANT AND MACHINERY**

- 1.1 In the past people were using simple machines to build their structures. Name TWO of those simple machines. (2)
- 1.2 State THREE economic benefits to the contractor if he looks after his tools and equipment properly. (3)
- [5]**

**QUESTION 2: LEGISLATION AND SAFETY REGULATIONS**

- 2.1 South Africa established Occupational Health and Safety Act No. 85 of 1993 to compensate for injuries to workers. State FIVE other acts that you know. (5)
- 2.2 What is the primary responsibility of the client on site? (2)
- 2.3 State THREE consequences of poor house-keeping. (3)
- 2.4 Appropriate personal protective equipments are given together with their purpose in a table form below. Write only the correct purpose next to the equipment name (2.4.1 – 2.4.7) in the ANSWER BOOK.

	<b>EQUIPMENT</b>	<b>PURPOSE</b>
2.4.1	Protective boots	Is to protect the eyes while working.
2.4.2	Hand gloves	Is to protect the head from falling objects.
2.4.3	Earplugs	Is to protect the body while working.
2.4.4	Respirators	Is to protect the hands from injuries.
2.4.5	Safety belts	Is to protect the ears from noise while working.
2.4.6	Work suites	Is to protect the lungs from infections.
2.4.7	Safety hats	Is to protect the feet while working.

(5 × 1)

(5)  
**[15]****QUESTION 3: FIRST AID**

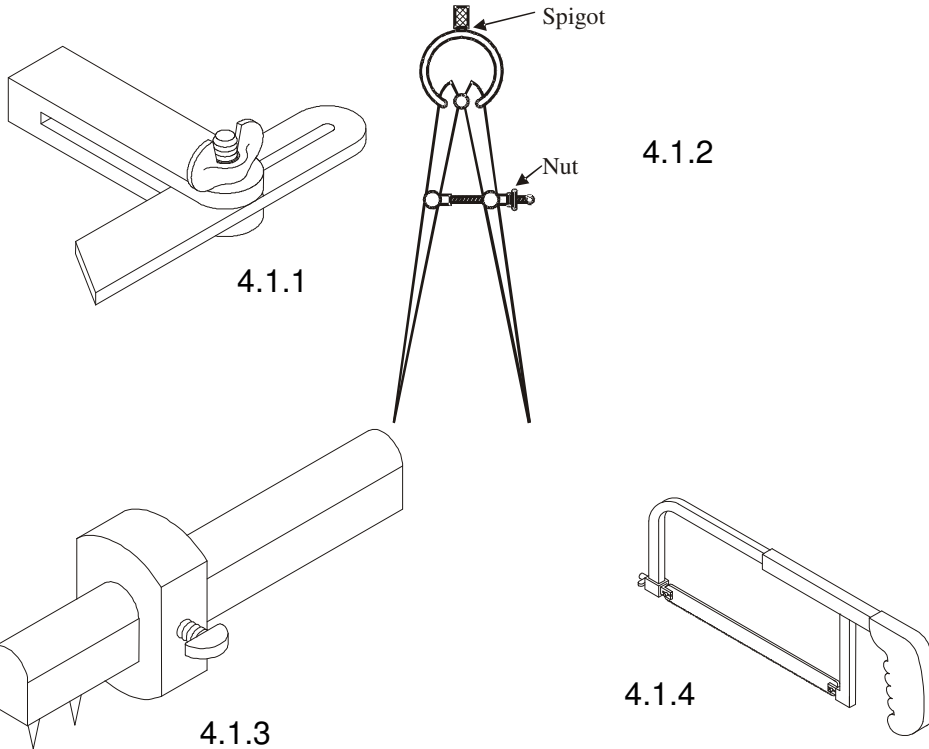
- 3.1 Explain the term *emergency situation*. (2)
- 3.2 Explain what you understand by the abbreviation 'ABC' when a fellow worker has been injured (3)
- 3.3 Giving first aid can results in serious infection to the first-aid provider. State FIVE points on how you will go about giving first aid. (5)

3.4 Medical shock is a condition where not enough blood circulates around the body. Name FIVE symptoms and signs of medical shock.

(5)  
[15]

**QUESTION 4: THE RIGHT TOOL FOR THE JOB – HAND TOOLS**

4.1 Name the general tools below and state ONE use of each. Write only the answer next to the question number (4.1.1 – 4.1.4) in the ANSWER BOOK.



(8)

4.2 During your practical experience, the supervisor advised your team leader to use portable electric power tools to speed up the finishing process of carpentry work. Name THREE electric power tools that a carpenter will have in his toolbox.

(3)

4.3 Safety first is the responsibility of everyone on site. State FIVE general safety tips regarding any of your answer in QUESTION 4.2.

(5)

4.4 What are the consequences of working with a blunt tool?

(4)

4.5 Explain in detail how you would sharpen a chisel by means of an oil stone

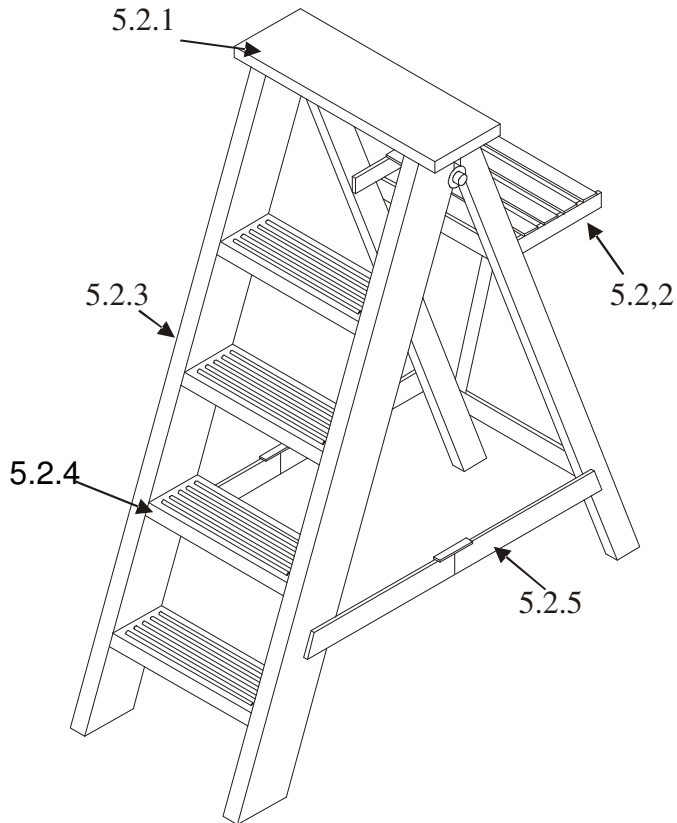
(5)

4.6 Construct an octagon with a diameter of 80 mm using your 45° set-square.

(5)  
[30]

**QUESTION 5: LADDERS**

- 5.1 Your supervisor instructed you to explain to the unskilled labour force about the safe use of ladders. You decided to start with the aspect of inspection before they use a ladder. Name FIVE aspects that they should look for before working with a ladder. (5)
- 5.2 Name the components of the ladder below. Write only the answer next to the question number (5.2.1 – 5.2.5) in the ANSWER BOOK.

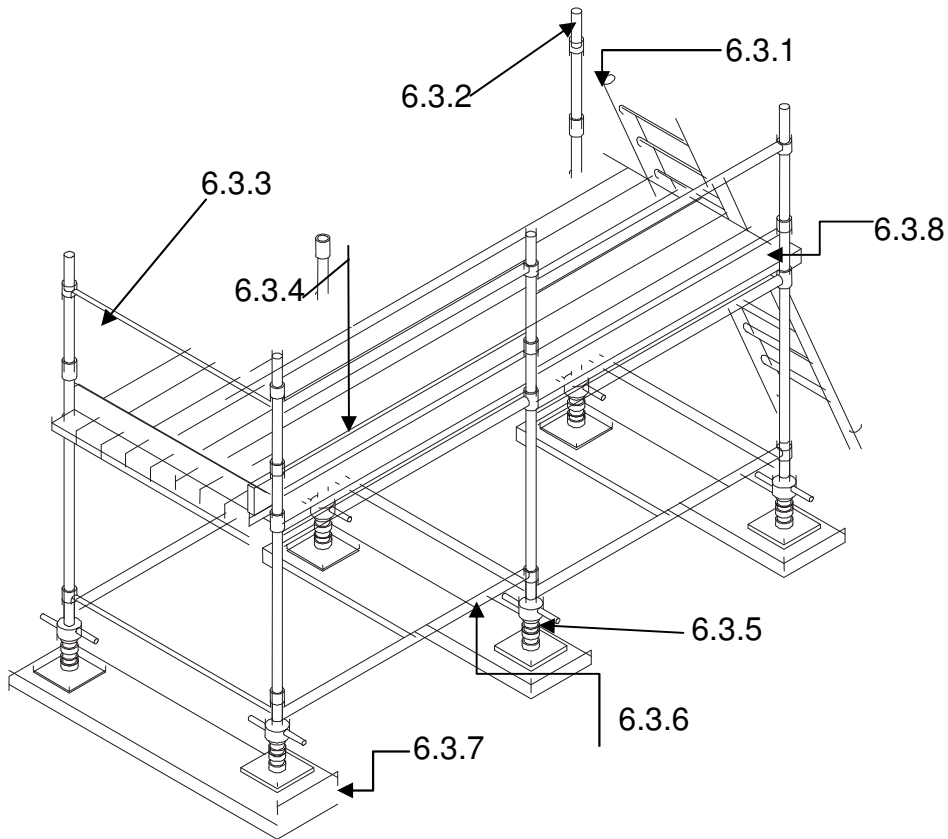


(5)  
[10]

**QUESTION 6: BUILDER'S TRESTLES, ACCESS SCAFFOLDING AND MOBILE TOWERS**

- 6.1 Define the term *bracing*. (1)
- 6.2 You are given a task to design a scaffold to perform a particular task. What are the factors that you would consider when you design the scaffold (5)

6.3 Name the following scaffolding components. Write only the answer next to the question number (6.3.1 – 6.3.8) in the ANSWER BOOK.



(8)

6.4 Choose a description from COLUMN B that matches a load limit in COLUMN C. Write only the load limit next to the item number (6.4.1 – 6.4.4) in the ANSWER BOOK.

COLUMN A	COLUMN B	COLUMN C
Item no.	Duty of scaffold	Load Limit
6.4.1	Heavy	80 kg/m <sup>2</sup>
6.4.2	Medium	160 kg/m <sup>2</sup>
6.4.3	Light	240 kg/m <sup>2</sup>
6.4.4	Very Light	320 kg/m <sup>2</sup>

(4)

6.5 Trestle scaffolds are the most widely used scaffolds in South Africa. State FIVE safety rules that workers must adhere to when working on a trestle scaffold.

(5)

6.6 Name the TWO types of tower scaffolds.

(2)

[25]

TOTAL: 100