higher education & training

Department:
Higher Education and Training
REPUBLIC OF SOUTH AFRICA

NATIONAL CERTIFICATE

MOTOR BODYWORK THEORY N2

(11040572)

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This question paper consists of 7 pages.

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DEPARTMENT OF HIGHER EDUCATION AND TRAINING
REPUBLIC OF SOUTH AFRICA

NATIONAL CERTIFICATE
MOTOR BODYWORK THEORY N2
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. Start each section on a new page.
5. Use only a black or blue pen.
6. Write neatly and legibly.

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SECTION A

QUESTION 1

Various options are given as possible answers to the following questions. Choose the answer and write only the letter (A–D) next to the question number (4.1–4.10) in the ANSWER BOOK.

1.1 The roof panel is pressed with large presses into a slightly …

A round shape.
B flat surface.
C concave shape.
D convex surface.

1.2 A water gutter forms part of the edge and serves as a finish for the …

A car.
B bonnet.
C roof.
D frame.

1.3 Because of the large area and the mass of passengers to be carried, it is important that it is reinforced well.

A Front
B Top
C Floor
D Rear

1.4 It is made in the shape of a box.

A Engine
B Chassis
C Rear wheels
D Front wheels

1.5 It is used for the greatest part of the body and frame.

A Brass
B Copper
C Mild steel
D Aluminium

1.6 A steel alloy that is hard and as the name implies, can resist corrosion and does not rust.

A Stainless steel
B Mild steel
C Brass
D Aluminium

1.7 Metal used in radiator construction.

A Aluminium
B Copper shim
C Zinc alloy
D Lead

1.8 It is not used in motor car construction.

A Lead and solder
B Mild steel
C Stainless steel
D Mild and stainless steel

1.9 It is held against the inner part of the panel while dinging by means of a planishing hammer.

A Dolly
B Molly
C Mouse
D Body spoon

1.10 The pressure in the machine should be light to prevent overloading of the motor and resultant damage due to overheating.

A Soldiering iron
B Welding machine
C Disc sander
D Rubber mallet machine

(10 × 1) **[10]**

QUESTION 2

Indicate whether the following statements are TRUE or FALSE by writing only 'True' or 'False' next to the question number (2.1–2.5) in the ANSWER BOOK. Give ONE reason for each answer.

2.1 The fire extinguishers in the workshop should be in good order and they should be tested and recharged at prescribed intervals.

2.2 Fire buckets should be filled with sand and should not be used for other purposes.

2.3 To extinguish an electrical fire one must use water or a soda extinguisher.

2.4 To extinguish a wood or timber fire one must use sand or a carbon dioxide extinguisher.

2.5 To extinguish a liquid fuel fire one must use sand or a foam type extinguisher.

(5 × 1) **[5]**

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QUESTION 3

Choose an item from COLUMN B that matches a description in COLUMN A. Write only the letter (A–L) next to the question number (3.1–3.10) in the ANSWER BOOK.

COLUMN A		COLUMN B	
3.1	It is made of drawn steel and is filled with a porous mass which consists of charcoal, asbestos chippings and cement	A	cylinder
3.2	The volume of gas included is about 7 cubic metres under pressure of approximately 140 bars	B	pressure regulator
3.3	The gas cannot be used directly from the cylinders, as the pressures are too high	C	acetylene cylinder
3.4	Its function is to mix oxygen and acetylene in the correct proportion to obtain a suitable flame for welding	D	flame off
3.5	They are placed in an upright position on a trolley and firmly secured by a chain or sling with which the trolley is equipped	E	backfiring
3.6	The flame goes out, but is immediately reignited by the heat of the weld	F	oxygen cylinder
3.7	The flame contains an excess of acetylene	G	neutral
3.8	The flame contains equal quantities of both gasses	H	blowpipe
3.9	By either increasing the oxygen supply, or by decreasing the acetylene supply this flame is obtained	I	oxidising
3.10	First close the acetylene valve on the blowpipe and then shut off the oxygen valve	J	carburising
		K	connection
		L	water

(10 × 1) **[10]**

QUESTION 4

Complete the following sentences by writing only the missing word(s) next to the question number (4.1–4.5) in the ANSWER BOOK.

4.1 Well-fitting goggles must be … when using a disc sander or emery grinder to protect the eyes from flying emery or metal chips.

4.2 … colouring is used to indicate hazardous parts of a machine, and these should be avoided when the latter is in operation.

4.3 … acid may cause skin burns and damage to eyes and clothes; the acid may be neutralised by washing the affected part with a solution of bicarbonate of soda.

4.4 Rusty … should be treated with care, since metal in this state carries germs and may contaminate wounds.

4.5 Do not lie or sit on a cement floor when working underneath a car; use a floor … ..

(5 × 1) **[5]**

TOTAL SECTION A: 30

SECTION B

QUESTION 5

The rear door of a motor car is badly damaged and needs to be partly removed.

Describe in detail the step-by-step procedure of partial panel replacement.

(20 × 1) **[20]**

QUESTION 6

6.1 State FIVE measures that can be used to prevent the orange peel effect. (5)

6.2 Briefly explain how a repaired panel must be prepared before the first coat of primer is applied. (5)

6.3 Describe in detail the correct spraying technique used to obtain a neat painted finish. (5)

6.4 State FIVE causes why paint runs after spraying. (5)

[20]

TOTAL SECTION B: 40

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SECTION C

QUESTION 7

7.1	Name TWO types of panel replacements.	(2)
7.2	Name FOUR different types of joints that can be used in door panel replacement.	(4)
7.3	State THREE purposes of the centre pillar in motor body construction.	(3)
7.4	State FOUR panels in motor bodywork which are reinforced with inner construction.	(4)
7.5	Explain how spot welded joints are separated.	(2)
7.6	State FIVE types of reinforcement that are used in motor bodywork.	(5)
7.7	Give FIVE causes of a coarse and sandy surface appearance after spraying painting.	(5)
7.8	State FIVE general points to be considered when installing an air compressor.	(5)
		[30]

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TOTAL SECTION C: 30
GRAND TOTAL: 100

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