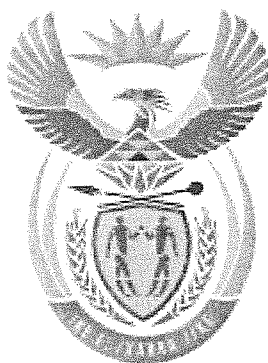


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higher education & training

Department:
Higher Education and Training
REPUBLIC OF SOUTH AFRICA

**T1170(E)(A17)T
NATIONAL CERTIFICATE**

MOTOR TRADE THEORY N2

(11040662)

**17 April 2015 (Y-Paper)
13:00–16:00**

Candidates will require drawing instruments.

This question paper consists of 5 pages.

DEPARTMENT OF HIGHER EDUCATION AND TRAINING
REPUBLIC OF SOUTH AFRICA
NATIONAL CERTIFICATE
MOTOR TRADE 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. Write neatly and legibly.
-

QUESTION 1

- 1.1 With the aid of a sketch, show the following wheel-alignment angles:
 • Positive camber
 • Included angle
 • Steering axis inclination
 • Scrub radius (4 × 2) (8)
- 1.2 List FOUR advantages of leaf springs that are used in suspension systems. (4)
- 1.3 State TWO advantages of Macpherson strut suspension. (2)
- 1.4 Give TWO reasons for camber in a motor vehicle. (2)
- 1.5 Give THREE reasons why an independent suspension is preferred over a non-independent suspension. (3)
- 1.6 Name the gas used in shock absorbers? (1)
- [20]**

QUESTION 2

- 2.1 FIGURE 1 shows a Constant Velocity (CV) joint. Label items A-E in your ANSWER BOOK.

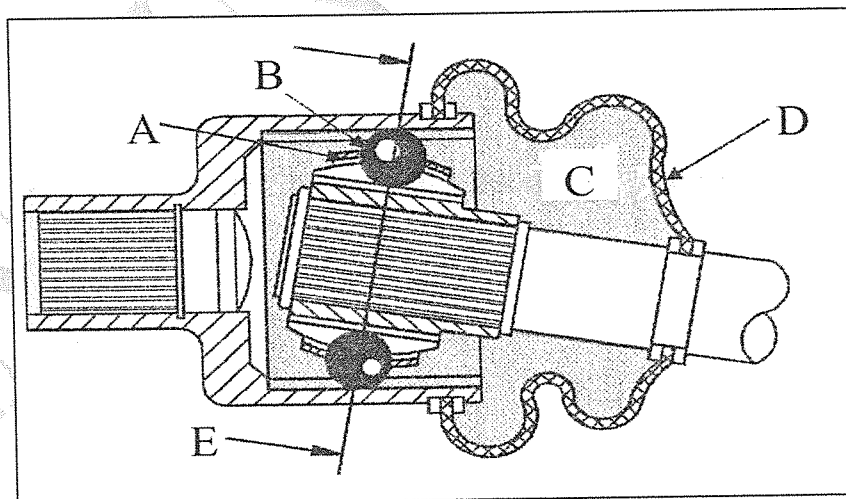


FIGURE 1

- (5)
- 2.2 State THREE functions of the final-drive assembly. (3)
- 2.3 Explain the limitation of conventional differentials. (4)
- 2.4 List FOUR advantages of the rubberised fabric type universal-joint coupling. (4)
- 2.5 List FOUR disadvantages of unequal length drive-shafts. (4)
- [20]**

QUESTION 3

3.1 FIGURE 2 shows a CONVENTIONAL IGNITION SYSTEM. Label items A-J in your ANSWER BOOK.

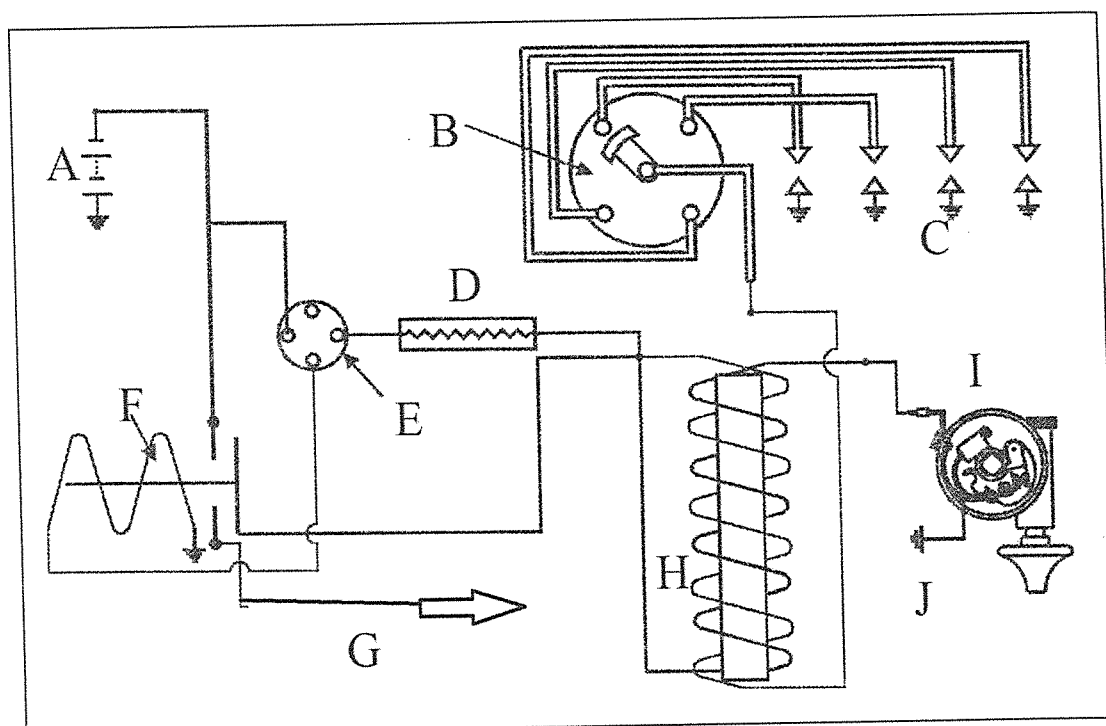


FIGURE 2

(10)

3.2 Name TWO functions of a ballast resistor in an ignition system.

(2)

3.3 State the function of the following components of a carburetor:

3.3.1 Power valve

3.3.2 Accelerator-pump circuit

(2 × 2)

(4)

3.4 Name TWO methods of how the fuel-pump pressure can be altered in a mechanical fuel pump.

(2)

3.5 Name TWO adjustments that can be carried out on a carburetor.

(2)

[20]

QUESTION 4

- 4.1 4.1.1 Give TWO advantages of using spur gears in a gearbox.
- 4.1.2 Name TWO limitations of spur gears. (2 × 2) (4)
- 4.2 List the SIX components in the correct order when reverse gear is selected in a four-speed gearbox. (6)
- 4.3 A customer complains that it is difficult to select gears. His vehicle is a manual vehicle.
- List FOUR possible reasons for his problem. (4)
- 4.4 Explain the function of an interlocking device used in gearboxes. (3)
- 4.5 List THREE advantages of a synchromesh unit. (3)
- [20]**

QUESTION 5

- 5.1 List THREE reasons for using a tandem-brake master cylinder. (3)
- 5.2 State the function of a compensator used in a handbrake mechanism? (2)
- 5.3 Name TWO types of disc-brake calipers. (2)
- 5.4 Explain why it important to check the level of the brake fluid before changing brake pads. (4)
- 5.5 Give THREE disadvantages of a fixed brake calliper. (3)
- 5.6 Draw a neat labelled sketch of a Brake system.
 Show the following components in the sketch:
 Brake pedal, master cylinder, fluid reservoir and slave cylinder. (6)
- [20]**

TOTAL: 100