



ZIMBABWE

**MINISTRY OF HIGHER AND TERTIARY EDUCATION,
INNOVATION, SCIENCE AND TECHNOLOGY
DEVELOPMENT**

**HIGHER EDUCATION EXAMINATIONS COUNCIL
(HEXCO)**

NATIONAL CERTIFICATE

IN

MOTOR VEHICLE MECHANICS

MODULE: Brakes System Maintenance

PAPER NO: 346/22/M08

DURATION: 3 Hours

NOVEMBER/DECEMBER 2025 EXAMINATION

REQUIREMENTS

Blue pen, pencil, rule, drawing instruments

INSTRUCTIONS TO CANDIDATE

- 1) **Section A: Answer all questions (40 marks).**
- 2) **Section B: Answer all questions (60 marks). Each question carries ten (10 marks).**

This paper consists of 3 printed pages.

SECTION A: ANSWER ALL QUESTIONS

QUESTION 1

- 1.1 State three (3) functions of the braking system. (3 marks)
- 1.2 State two (2) types of braking systems. (2 marks)
- 1.3 Define the term brake fade (2 marks)
- 1.4 Differentiate between leading and trailing shoe assembly from duo servo assembly. (4 marks)
- 1.5 With reference to braking system state the use of each of the following:
- i) Speed sensor (2 marks)
 - ii) Electronic control unit (2 marks)
 - iii) Hydro/electric modulator (2 marks)
- 1.6 Define brake binding and state one cause. (3 marks)

QUESTION 2

- 2.1 Explain how braking efficiency of a vehicle is evaluated. (4 marks)
- 2.2 Give one advantage and one (1) disadvantage of disc brakes. (2 marks)
- 2.3 State the purpose of the following brake components:
- i) Wheel cylinder (2 marks)
 - ii) Stop light switch (2 marks)
- 2.4 Give two (2) types of brake servo units (2 marks)
- 2.5 List three (3) other names of ABS (3 marks)
- 2.6 List any five (5) checks to be done when servicing a brake master cylinder. (5 marks)

SECTION B: ANSWER ALL QUESTIONS

QUESTION 3

Explain the operation of a typical ABS braking system. (10 marks)

QUESTION 4

Give two (2) causes of each of the following brake defects:

- a) Inefficient brakes (2 marks)
- b) Dragging brakes (2 marks)
- c) Grabbing brakes (2 marks)
- d) Brakes pulling to one side (2 marks)
- e) Excessive pedal travel (2 marks)

QUESTION 5

In logical sequence describe the procedure you would adopt to adjust, brake shoe to drum clearance. (10 marks)

QUESTION 6

- a) Give four (4) advantages and two (2) disadvantages of air braking system. (6 marks)
- b) List any four (4) precautions to be observed when handling brake fluid. (4 marks)

QUESTION 7

Draw a well labelled diagram of a leading and trailing shoe drum brake arrangement. (10 marks)

QUESTION 8

- a) In logical sequence describe how one would adjust the cable hand brake system. (6 marks)
- b) Explain the energy conversion experienced during braking. (4 marks)
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