



Province of the
EASTERN CAPE
EDUCATION

DIRECTORATE SENIOR CURRICULUM MANAGEMENT (SEN-FET)

HOME SCHOOLING SELF-STUDY WORKSHEET ANSWER SHEET

SUBJECT	AUTOMOTIVE	GRADE		DATE	
TOPIC	MAINTENANCE	TERM 1 REVISION	(Please tick)	TERM 2 CONTENT	(√)

QUESTION 1

1.1 Exhaust gas analyser causes of high hydrocarbon (HC) reading:

1.1.1

- Excessive unburned fuel by incomplete combustion.
- Improper timing
- Vacuum leak
- Faulty air management system **(Any 3)**

1.1.2 Corrective measures:

- Reset fuel mixture
- Check and reset ignition system
- Check and repair vacuum leaks
- Check and repair faulty air management system **(Any 3)**

1.1.3 Exhaust gases that are analysed:

- Carbon monoxide
- Carbon dioxide
- Nitrogen oxide
- Sulphur dioxide
- Oxygen (Any 2)

QUESTION 2

2.1 Carry out wet test on the cylinder

2.2 Cylinder leakage test procedure:

- Ensure the vehicle is at normal operating temperature.
- Remove the air filter, high tension cables, oil cap, radiator cap, dip stick.
- Unscrew the spark plug.
- Turn the engine until both valves are close on cylinder 1 and keep the crankshaft pulley locked.
- Screw in the cylinder leakage tester to the sparkplug hole.
- Open the relief valve slowly and check the leakage reading.
- Repeat the process on the other cylinders and compare readings with specifications.

2.3

FAULT	POSSIBLE CAUSES	CORRECTIVE MEASURES
Hissing sound in inlet manifold	Worn out inlet valve	Replace or lap the inlet valve
Hissing sound in exhaust manifold	Worn out exhaust valve	Replace or lap the exhaust valve
Hissing sound at dip stick or oil filler cap	Piston rings are worn out	Overhaul the engine and fit in new bigger piston and rings
Bubble in radiator water	Blown gasket or cracked cylinder head	Skim the cylinder head and replace gasket

2.4 Reason for conducting radiator cap pressure testing:

- In order to determine the relief pressure of the radiator cap and compare with specifications