

MOTOR VEHICLE MECHANICS 2003 - NECTA FORM FOUR

Solutions from: [Maktaba by TETEA](https://maktaba.tetea.org)

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1.

i	ii	iii	iv	v	vi	vii	viii	ix	x
C	B	B	C	D	B	B	A	A	B

2.compression ratio is the ratio between the total volume of the cylinder to the volume of combustion chamber.

3.-surrounding air

-density of water

-gravity.

4.Fins increases the surface area where by the heat from engine is removed by the surrounding air as it passes through the fins.

5.-to indicate the level of oil

-to indicate the temperature of oil

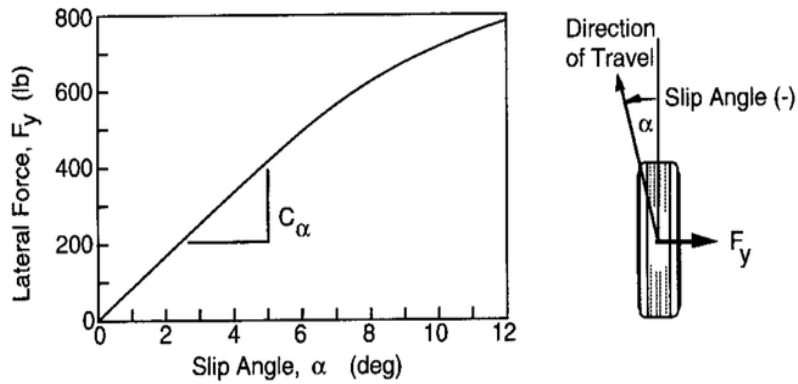
-to show the leakage or any other fault.

6.Purpose of Universal joints

-helps to transfer the torque equally in all angles or in any plane

- allows flexibility of the driveshaft due to suspension movement.

7.Slip angle is the angle between the direction of wheel pointing during moving, and the actual direction in which it travels.



8.(a) Mixture strength is the ratio between the fuel and air, in the petrol engine.

(b) 15:1 is the correct ratio for petrol engine, indicating that 15 is fuel and 1 is air.

9.(a) Bigger aspect ratio, higher is the tyre's sidewall.

(b) -165 Indicates the Normal section width of tyre in mm

- R indicates radial ply construction

-14 indicates the Nominal diameter of the wheel rim in inches.

10. the coil spring is placed between shackles and rubber bushes.

11. The aim of steering system linkage is to transfer the motion of the steering gear output shaft to steering arms that turn the wheels to maneuver and control the vehicle direction.

12.(a) Backfire is the combustion of fuel outside the combustion chamber, in the engine.

(b) purpose of air cleaners

-to remove dust particles from air

-reduce the noise of rushing air into the engine

13.(a) Compression ratio = $\frac{\text{clearance volume} + \text{swept volume}}{\text{swept volume}}$

$$= \frac{37.5 + 300}{37.5}$$

$$= 9/1$$

Hence, compression ratio is 9:1

(b) the compression ratio will remain the same.

14. Hand brake engages the REAR wheels in the event of the need for immediately stopping or additional support.

Foot brake controls the stopping of the car through friction placed on all four wheels, while a car in motion.

15. Causes of car pulling to one side

- air pressure is uneven

- wheel alignment is off

- bad wheel bearings

- suspension or steering parts are worn out.

- brake system issues.

16. Causes of gear to jump out of mesh are

- low or contaminated fluid

- worn synchronizer inside transmission system

- Improperly adjusted shift linkage.