Class : Second Year - Bachelor of Technology (Mechanical Engineering)

Experiment on Carbon Residue Apparatus

AIM: To determine the percentages of carbon residue after evaporation of oil.

THEORY: Carbon residue term is used to clesignate the carbonaceous residue formed during evaporation & pyrolysis of petroleum product.
This residue is not entirely of carbon is but a coke which can further changed by residue is called carbon residue.

DESCRIPTION OF EQUIPMENTES:

a) Metal furnace: It is a metal cylindrical block having six projection of diameter that as of coking bulb & one at center for thermocouple.
b) Temp. Measuring instrument it is an electronic device, which measure temp. with help of thermocouple connected with a block.
c) Coking bulb: coking bulb is somewhat cylindrical in shape at upper side a narrow hole say capillary is provided.

PROCEDUER:

1) Firstly metal furnace is heated at temp.550 °c or above.

2) During heating prepare bulb with a sample.

3) Take 5 ml of sample injected is in bulb with help of injection.

4) Before filling with sample take empty weight & note as w1.

5**)** After filling with sample take weight of bulb & note as w2.

6) At 550 °c put it in projection in metal block.

7) Kept it inside for 20 minutes fuel will bulb out & carbon residue remains inside.

8) Cool it up to room temp. & Weight it & note as A1

9) By using formula % carbon residue = $\frac{A}{W}$ X100 calculated %carbon residues.

, Where,

A = W1 – A1 (carbon residue in gms)
W = W1 – W2 (wt.of sample in gms)

OBSERVATION & CALCULATIONS :-

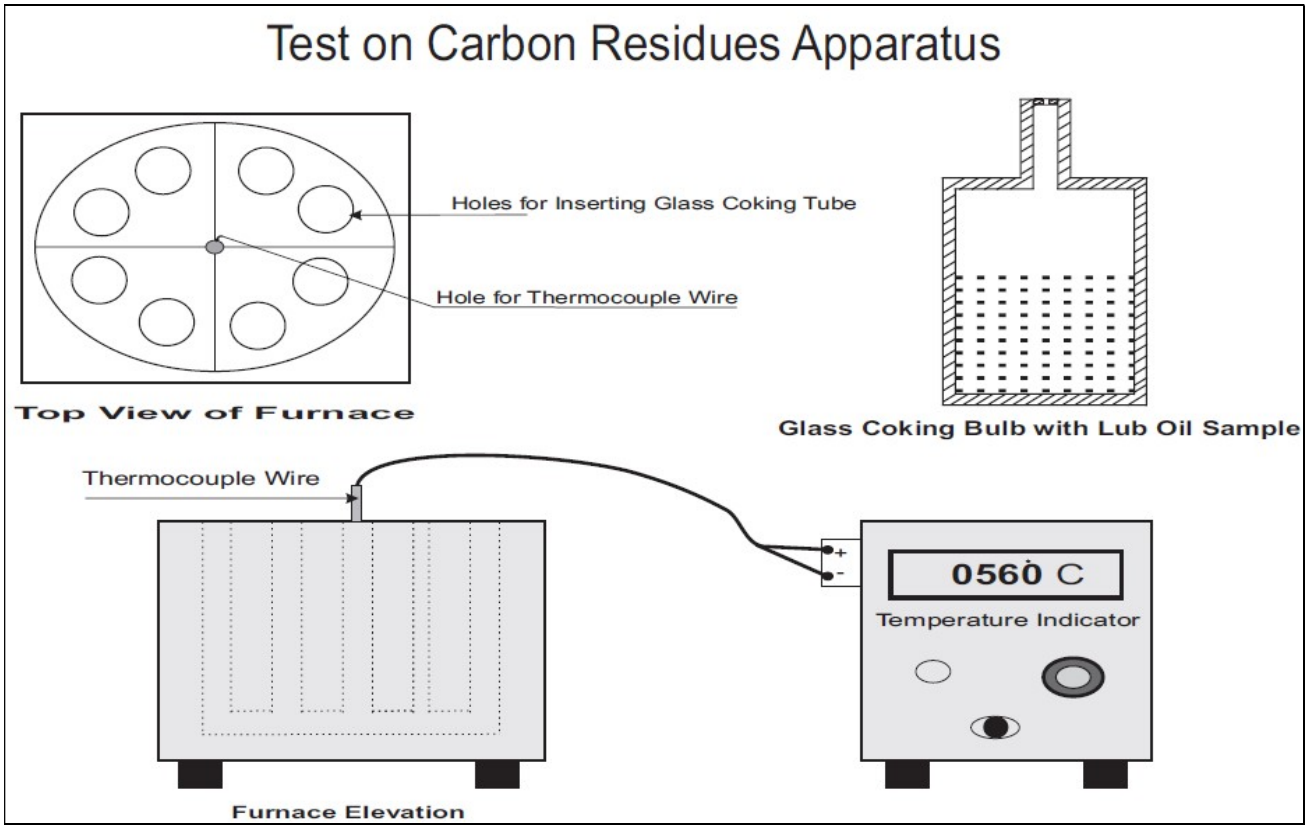
Weight of empty bulb (w1) :- 10.910 gm

Weight of bulb with oil (w2): 14.73 gm

1) Weight of sample oil = w2 – w1
2) Weight of bulb with carbon residue (A1) = 10.940 gm.

$$\% \text{ Carbon residue: } \frac{A1 - W1}{W2 - W1} \times 100$$

Figure :



CONCLUSION:

Ramsbotlom carbon residue for given sample is ---------- %

1. What is significance of carbon percentage in oil?
2. Which oil is used in this experiment?

3. What is effect of carbon on Automobile engine?
4.