Batch: **Roll No.:**

Date

Experiment No.

Title: VOLETILE MATTER CONTENT

Aim : To determine the VM content in the given coal sample

Requirement : Silica crucible, finely ground charcoal powder, MUFFLE FURNACE, Desiccator, Balance, fractional weight box.

Theory : Moisture and volatile matter is an undesirable component of mined coal. It is bought and transported at the cost of fuel. It does not contribute to calorific value but actually reduces it. Moisture can be surface moisture which is lost on just drying. However inherent moisture is not lost by air drying.

Procedure : To determine the volatile matter, air dried coal is crushed (which can pass through mesh No.60 (ASTM). Initially weigh empty crucible along with lid. Note down the weight. Then weigh about 1gm of sample in a crucible. Note down the weight of coal taken. Keep this crucible in an oven maintained at a temperature between 920 ± 20^0C with half lid open. After seven minute the crucible with closed lid is transferred to a desiccator for cooling. After cooling the crucible is weighed again. Note down the weight.

Observation

Weight of empty crucible = W_1 g = g

Weight of Crucible + Coal = W_2 g = g

Weight of sample before drying = $W_2 - W_1$ g

= g

Weight of crucible + sample after heating at 920^0 for 7 min = W_3 g = g

Weight of sample after heating = $W_3 - W_1$ g

= g

Loss in weight = $W_2 - W_1 - (W_3 - W_1)$

= $W_2 - W_3$ g

= _____ g

$$\% \text{ Volatile matter} = \frac{\text{Loss in weight}}{\text{Wt of sample taken}} \times 100$$

$$= \frac{W_2 - W_3}{W_2 - W_1} \times 100 - \%\text{Moisture gm}$$

= _____ %

Result:

Percentage of VM in the given coal sample = _____%