Batch: **Roll No.:**

Date

Experiment No.

Title: MOISTURE CONTENT

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

Requirement : Porcelain crucible, silica crucible, finely ground charcoal powder, oven, 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 inherent moisture, 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 1 gm of sample in a crucible. Put the lid on the crucible and weigh it again. Note down the weight again. Keep this crucible in an oven maintained at a temperature between 105- 110^0C. The lid is removed to allow for the evaporation of moisture. Keep it for 1hour in an oven. After 1hour, the crucible is covered with the lid and 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 100^0 for 60 min = W_3 g = g

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

= g

Calculations:

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

= $W_2 - W_3$ g

= _____g

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

$$= \frac{W_2 - W_3}{W_2 - W_1} \times 100$$

= _____ %

Result :

Percentage of moisture in the given charcoal powder= _____%