## Q: What is calorific value ? And what are the factors affecting it ? (3 marks)

A: Calorific value is the amount of heat released when a substance undergoes complete combustion. It's typically expressed as energy per unit mass or volume. Factors affecting it include the chemical composition of the substance, its moisture content, and the completeness of combustion.

## Q: difference between coking coal and caking coal (3 marks)

A: Caking coal and coking coal are essentially the same thing. Both refer to bituminous coal that softens and fuses when heated, forming a coke mass. The term "coking coal" specifically highlights its suitability for producing metallurgical coke used in ironmaking. "Caking coal" is a more general term encompassing the property of fusing upon heating.

## Q: what is cracking of crude oil ? List its types (4 marks)

A: Cracking is a refining process that breaks down large, complex hydrocarbon molecules in crude oil into smaller, more useful molecules like gasoline and other fuels. This process involves high temperatures and pressures, sometimes with catalysts. There are two main types: thermal cracking, which uses heat alone, and catalytic cracking, which employs catalysts to facilitate the process at lower temperatures. Fluid catalytic cracking (FCC) is a common and highly efficient variation of catalytic cracking. Hydrocracking combines cracking with hydrogenation to produce higher-quality products and reduce unwanted byproducts.