

# CENTRTE FOR ENERGY STUDIES

ESL 711 (Fuel Technology)

Minor Test-II

Time: 1hr.

Marks: 20

## Part A (7 Marks)

- 1.
- Explain the term 'Level IV coal preparation plant'. (1)
  - Discuss the problems associated with cleaning of Indian coal. (1)
  - Discuss working principle of Baum jig washer for cleaning of coal. (2)
  - Explain the term 'Coal band' in seyley's coal classification chart with the help of a neat levelled diagram. (2)
  - Write down the significance of 'four digit code no 3304' assigned to a sample of coal. (1)

## Part B

1

- Describe the process of fluidised bed catalytic cracking (FCC) of petroleum vacuum gas oil with the help of flow scheme. (7)
- What is the one main advantage of the FCC process over other catalytic cracking processes? (1)

[Please give just one line answer]

2 Answer Yes or No

- Norway is no. 3 in the natural gas reserves.
- LNG stands for Liquid Nitrogen Gas.
- As per BS-IV norms petrol should have less than or equal to 10 ppm sulphur contents. <sup>no</sup>
- Petroleum reforming involves alkylation of gasoline.  $\curvearrowright$  (2)

3 When the Saudi Arabia crude oil price exported to India is US \$46.90/barrel (and 1US \$=Rs.63.83) and the refining cost of the oil to petrol (gasoline) is Rs. 13.56/litre, calculate how much one litre of the gasoline would cost to the refinery and the cost to the consumer, when the refinery has to get 50 % profit. Also calculate the price of 1 litre of the oil to the gasoline refinery after refining the crude oil imported at US\$ 144.89/ bbl.

## Pl. note

- You are not allowed to stand up or leave the seat at the end of exam till all answer scripts are collected and counted.
- You are not allowed to leave the exam hall during the exam period unless on medical emergency.