AJAY BINAY INSTITUTE OF TECHNOLOGY

ASSIGNMENT

SUBJECT – CHEMISTRY **MODULE -3 (FUEL)**

QUESTIONS OF TWO MARKS

1. What do you mean by calorific value of fuel?
2. Why should an ideal fuel have moderate ignition temperature?
3. What is meant by knocking? Arrange n-octance, naphthalene, iso-octance in increasing order of their knocking tendency.
4. What is octane number of gasoline?
5. Gasoline containing tetra ethyl lead is used in internal combustion engines. Give reason.
6. Give the condition when GCV = NCV.
7. Write the difference between LPG and CNG
8. Why water gas is better than producer gas.

QUESTIONS OF SIX MARKS

9. A coal sample has the following composition by weight. C=90%, O=3.0%, S=0.5%, N=0.5% and Ash=2.5% Net calorific value was found to be 8490.51(kal/kg) . Calculate the percentage of Hydrogen and HCV and GCV of the coal sample.
10. Write short notes on proximate analysis of coal.
11. Describe the fractional distillation of petroleum.
12. Describe in detail on synthesis of power alcohol. Write its advantages and disadvantage.
13. Discuss the preparation and use of producer gas.
14. Write short notes on unleaded petrol with its advantages

QUESTIONS OF SIXTEEN MARKS

15. Discuss the knocking process in petrol engine. Define octane number and how it is related to the chemical structure of the fuel. A gas has the following composition by volume H=25%, CH_4=5%, CO=25%,CO_2=5%, O_2=5% , N_2=35%. If 40% excess air is used for its complete combustion find out weight and volume of air actually supplied per m^3 of the gas.

16. What are the various fraction obtained during distillation of petroleum? Mention the use of each fraction.

17. What do you mean by cracking? Discuss the mechanism of thermal cracking and catalytic cracking.

A B I T CHEMISTRY