



Mahatma Education Society's  
Pillai Institute of Information Technology, Engineering,  
Media Studies and Research

10, Dr. K.M Vasudevan Pillai's Campus, Sector 16, New Panvel- 410206.

Subject – Applied Chemistry II

Class Test: I  
Date: 24/02/2015

Max Marks: 15  
Time: 1 hr

Q.1) Attempt any three from the following:

3 X 2=6

- Distinguish between GCV and NCV.
- Define octane number. Can octane number of a fuel be more than 100?
- Explain the role of TEL in gasoline .
- State any four important characteristics of good quality fuel.
- Outline the method for the determination of volatile matter in a coal sample.

Q.2) Attempt any one from the following:

5 X 1=5

- Calculate the volume and weight of air required for the complete combustion of 1 m<sup>3</sup> of a gaseous fuel sample having the following composition: C<sub>3</sub>H<sub>8</sub>=60%, C<sub>4</sub>H<sub>8</sub>=20%, CO=10%, H<sub>2</sub>=5% .(Molecular weight of air = 28.949)
- Calculate gross and net calorific value of a coal by using Dulong's formula containing C = 70%, H = 5%, S = 1.5%, N = 0.4% and Ash = 0.1%. Also find the weight of air required for the complete combustion of 1 kg of coal.

Q.3) Attempt any one from the following:

4 X 1=4

- Define propellants. Write any four characteristics of a good propellant. Give a brief classification of propellants.
- Explain refining of crude oil by fractional distillation method with a neat diagram.

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