Seat No.	

Total No. of Questions : 8] **[Total No. of Printed Pages : 2**

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F. E. Examination - 2012

ENGINEERING CHEMISTRY

(2012 Course)

Time : 2 Hours] **[Max. Marks : 50**

Instructions :

(1) Black figures to the right indicate full marks.

(2) Assume suitable data, if necessary.

(3) Neat diagrams must be drawn wherever necessary.

Q.1) (A) Explain the Methods of Internal Treatment of Boiler Feed Water. **[06]**

(B) Explain different types of Electronic Transitions that occur in an organic molecule after absorbing UV Radiations. **[06]**

OR

Q.2) (A) Explain any six principles of Green Chemistry. **[06]**

(B) Explain the pH metric titration of mixture of weak acid - strong acid against standard alkali, giving chemical reactions, procedure, titration curve and calculations. **[06]**

Q.3) (A) Explain Bulk and Emulsion Polymerization Techniques. **[06]**

(B) What is Biodiesel ? Explain the reaction with conditions involved. Give advantages and disadvantages. **[06]**

OR

Q.4) (A) Explain Kevlar and FRP with respect to their properties and applications. **[06]**

(B) Explain Proximate Analysis of Coal. **[06]**

Q.5) (A) Explain the structure of Fullerene. How does it influence it properties and applications ? **[05]**

(B) Describe the use of sodium alanate for Hydrogen Storage. **[04]**

(C) Explain the Storage of Hydrogen in compressed and liquified form. Explain difficulties in the said Storage Systems. **[04]**

OR

Q.6) (A) Explain the Isotopes of Carbon and Hydrogen. **[05]**

(B) Explain the steam reforming of Methane to obtain Hydrogen Gas. **[04]**

(C) Discuss the types of CNT with respect to their structure. Give their applications. **[04]**

Q.7) (A) Explain the Cathodic Protection of a Underground Structure. Give the principle involved. **[05]**

(B) How does the nature of environment influence the rate of Corrosion ? Explain any four factors with examples. **[04]**

(C) Discuss various steps involved in Powder Coating. **[04]**

OR

Q.8) (A) Explain the Mechanism of Dry Corrosion. Discuss the Oxidation Corrosion in case of Mg, Cr, Mo. **[05]**

(B) How is Steel Galvanized ? Explain the process with the help of a flow diagram. **[04]**

(C) Give conditions under which the Wet Corrosion Occurs. Explain the Mechanism of Wet Corrosion by Hydrogen Evolution with suitable example. **[04]**