

Quiz 1

Max Marks : 10

Duration : 45 minutes

Time: 11:00-11:45 am

1. Answer the following questions :

- a. Which method of hydrogen production is used for heavy residual oils as feedstock? Why? [1]
- b. In steam reforming process if higher hydrocarbons are present along with methane, draw the process flow diagram. [1]
- c. What causes deactivation of catalyst in a catalytic process used for hydrogen production and how that can be prevented? [1]
- d. What is the role of steam in non-catalytic POX process used for hydrogen production [1]
- e. ~~What is the difference between biomass gasification and pyrolysis, which method is effective for hydrogen production?~~
Name the advanced methods of reforming. [1]
- f. What are the parameters on the basis of which the technology for hydrogen production can be decided? [1]
- g. Compare the three methods of hydrogen production SMR, POx and ATR [2]
- h. What is the role of burner and why the design of suitable burner important in ATR? [1]
- i. If one kg of methane reacts with steam in an SMR reaction. Considering complete conversion of methane, how much will be the hydrogen produced in the process (in kg)? [1]