



MANIPAL INSTITUTE OF TECHNOLOGY

MANIPAL

A Constituent Institution of Manipal University

Reg. No.

V SEMESTER B.TECH. (CHEMICAL ENGINEERING)

MAKE UP EXAMINATIONS, DECEMBER 2017

SUBJECT: PROGRAM ELECTIVE-I

ENERGY ENGINEERING [CHE 4016]

REVISED CREDIT SYSTEM

DATE: 27/12/2017, TIME: 2-5 PM

Time: 3 Hours

MAX. MARKS: 50

Instructions to Candidates:

- ❖ Answer ALL the questions.
- ❖ Missing data may be suitably assumed.

1A.	Explain the significances and estimation of the following properties of liquid fuels. i) Flash and fire point ii) Carbon residue	05
1B.	Explain the theories on origin of coal. Explain the points in favor of these theories.	05
2A.	Differentiate between Proximate and Ultimate analysis of coal.	02
2B.	Describe the properties, uses and production of water gas and carbureted water gas.	05
2C.	Differentiate HTC and LTC (any four)	03
3A.	Explain the petrography of coal.	04
3B.	Explain briefly the estimation of weathering and grindability index of coal.	04
3C.	What the different types of combustion techniques.	02
4A.	With a neat sketch, explain the construction, principle and working of any one vaporizing oil burner,	04
4B.	Explain the pretreatment techniques for crude oil before distillation.	03
4C.	Explain the importance of renewable sources of energy.	03
5A.	Explain the availability, exploration and generation of solar and wind energy.	06
5B.	Write a brief note on energy conservation techniques.	04
