



MANIPAL INSTITUTE OF TECHNOLOGY

MANIPAL

A Constituent Institution of Manipal University

Reg. No.

V SEMESTER B.TECH. (CHEMICAL ENGINEERING)

END SEMESTER EXAMINATIONS, NOVEMBER 2017

SUBJECT: PROGRAM ELECTIVE-I

ENERGY ENGINEERING [CHE 4016]

REVISED CREDIT SYSTEM

DATE: 22/11/2017, TIME: 2-5 PM

Time: 3 Hours

MAX. MARKS: 50

Instructions to Candidates:

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

1A.	Explain the significances and estimation of the following properties of liquid fuels. i) Aniline point ii) Viscosity and viscosity index	05
1B.	Explain the theories on origin of petroleum. Explain the points in favor of these theories.	05
2A.	Differentiate between HCV and LCV.	02
2B.	Describe the properties, uses and production of producer gas. What are the factors that influence the composition of producer gas?	05
2C.	Differentiate between cloud point, pour point and freezing point.	03
3A.	Describe any two commercial coal washing techniques.	04
3B.	Explain the physiochemical changes during the carbonization of coal	04
3C.	Explain the essential requirements for combustion process.	02
4A.	With a neat sketch, explain the construction, principle and working of any one atomizing oil burner,	04
4B.	Explain any three classification of furnaces	03
4C.	Differentiate between renewable and nonrenewable sources of energy.	03
5A.	Explain the availability, exploration and generation of energy from any two major renewable sources in India.	06
5B.	Write a brief note on energy audit	04
