Roll No.								

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B.E. (FULL TIME) DEGREE END SEMESTER EXAMINATIONS - MAY / JUNE 2012

MATERIALS SCIENCE AND ENGINEERING BRANCH

VII SEMESTER - REGULATION 2008

ML 9029 – FUELS, FURNACES AND REFRACTORIES

Time : 3 Hours Max. Marks : 100

ANSWER ALL QUESTIONS

PART – A (10 X 2 = 20 Marks)

1. What are the different modes of heat transfer?
2. State Peltier effect.
3. What are different types of coal?
4. What are the advantages of solar energy as compared to other types of energy?
5. What are the advantages of P.I.D. temperature controller?
6. What is the principle of induction heating?
7. What are the different types of refractories?
8. List the steps involved in refractory making.
9. What is "green house effect"?
10. Define "thermal discharge index".

PART – B (5 X 16 = 80 Marks)

11. Explain in detail about conduction heat transfer and convection heat transfer.

12. a) Explain in detail the different theories of petroleum crude formation.

(OR)

b) Write short notes on nuclear fuels and geothermal heating.

13. a) Explain in detail about electric resistance heating and induction heating.

(OR)

b) Write short notes on multizone furnaces, batch furnaces and tunnel furnaces.

14. a) Discuss the refractories used in steel making and aluminium industry.

(OR)

b) Discuss the refractories used in petroleum refineries, cement kiln and steam boiler.

15. a) Write an essay on energy and environment.

(OR)

b) Discuss in detail about emissions control.