G 461 (Pages : 2) Reg. No.....

Name.....

B.TECH. DEGREE EXAMINATION, MAY 2014

Sixth Semester

Branch : Mechanical Engineering

THERMAL ENGINEERING—II (M)

(Old Scheme—Prior to 2010 admissions)

[Supplementary/Mercy Chance]

Time : Three Hours Maximum : 100 Marks

Part A

Answer **all** *questions.*
Each question carries 4 *marks.*

1. Write the importance of valve timing diagram.
2. Differentiate between air standard cycle and fuel-air cycle for a diesel engine.
3. Define Carburation.
4. What are M.P.F.I. systems ?
5. List the techniques to evaluate combustion quality.
6. Briefly explain the terms : flash point and fire point.
7. How will you control diesel knock ?
8. Briefly discuss the mechanism of spray generation in diesel engine.
9. Prepare a small chart indicating the pollutants formed from CI engines.
10. Distinguish between Indicated power and Brake power.

(10 × 4 = 40 marks)

Part B

Answer **all** *questions.*
Each question carries 12 *marks.*

11. (a) Explain the construction, working and application of a stratified charge engine.

Or

(b) Discuss the chemical configurations, qualities and ratings of fuels used in (i) petrol engine ; and (ii) diesel engine.

Turn over

12. (a) Explain the importance, types and applications of lubrication systems used in SI engines.

Or

(b) What is heat balance test ? Briefly discuss the theory of engine heat transfer.

13. (a) Discuss the various methods and considerations for combustion chamber design.

Or

(b) With different types of plots, explain the stages of combustion in a petrol engine.

14. (a) Discuss how the motion of air and swirl influence the combustion action in a CI engine.

Or

(b) How will you select chemically correct air-fuel ratio for a diesel engine ? How does this change for different modes of engine operation ?

15. (a) With diagrams, discuss the methods of exhaust gas treatment in a typical spark ignition engine.

Or

(b) Discuss the significance, methodology and expected results for a morse test.

(5 × 12 = 60 marks)