

Question Paper Code : 41051

B.E./B.Tech. DEGREE EXAMINATION, NOVEMBER/DECEMBER 2013.

Seventh Semester

Mechanical Engineering

080120052 — INTERNAL COMBUSTION ENGINES

(Regulation 2008)

Time : Three hours

Maximum : 100 marks

Answer ALL questions.

PART A — (10 × 2 = 20 marks)

1. Why compression ratio of petrol engines is low while diesel engines have high compression ratio?
2. Which is better efficient two stroke or four stroke engines? Why?
3. State any four functions of carburetor.
4. What is the function of combustion chamber?
5. List the various alternate fuels for IC engines
6. What are the different methods by which LPG can be used in CI engines?
7. What do you mean by HCCI engine?
8. What are the advantages of lean burn engines?
9. How does control the pollution occur in SI engine?
10. What is the reason for smoke formation in CI engine?

PART B — (5 × 16 = 80 marks)

11. (a) What are anti-knock agents? What is their effect on the knocking tendency of petrol engines?

Or

- (b) Sketch a simple tube carburetor, name its different parts and explain their functions.

12. (a) Describe with the help of a neat sketch a precombustion chamber in CI engine.

Or

- (b) Discuss the effects of spray structure and spray penetration in Compression Ignition engine combustion.

13. (a) What are the factors to be considered for the engine modification using 100% alcohol as alternate fuel?

Or

- (b) How the hydrogen energy is useful to run the engine? What are the merits and demerits of using hydrogen as a fuel?

14. (a) What do you mean by stratified charge combustion system? What are the advantages of stratified charge combustion?

Or

- (b) Briefly explain the homogenous charge combustion ignition. Give a brief account for the technology behind the Gasoline Direct Injection (GDI) engine.

15. (a) What are the factors which control the formation of oxides of nitrogen and how it is control?

Or

- (b) Discuss in detail any two types of driving cycles used in emission measurement.