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Total No. of Pages : 02

Total No. of Questions : 09

B.Tech. (AE) (Sem.-4th) (2011 Batch)
INTERNAL COMBUSTION ENGINES

Subject Code : BTAE-401

Paper ID : [A1161]

Time : 3 Hrs.

Max. Marks : 60

INSTRUCTION TO CANDIDATES :

1. SECTION-A is COMPULSORY consisting of TEN questions carrying TWO marks each.
2. SECTION-B contains FIVE questions carrying FIVE marks each and students has to attempt any FOUR questions.
3. SECTION-C contains THREE questions carrying TEN marks each and students has to attempt any TWO questions.

SECTION-A**I. Answer briefly :**

- a) What is a thermodynamic cycle?
- b) Define mean effective pressure.
- c) What is meant by delay period?
- d) What is direct injection?
- e) What is the effect of engine speed on friction?
- f) How engines are air cooled?
- g) What is the function of a supercharger?
- h) What is the use of air cleaner in an automotive engine?
- i) What is the function of vibration damper?
- j) What is a heat balance sheet for an engine?

SECTION-B

2. Differentiate between a two stroke and a four stroke engine.
3. Discuss various theories of detonation.
4. Discuss the advantages of the design of 'M' combustion chamber.
5. Sketch any fuel injector for a diesel engine and explain its working.
6. Explain turbo-charging and discuss its limitations.

SECTION-C

7. Describe different types of valve actuating mechanism for automotive engines with the help of a sketch.
8. With the help of a neat sketch explain the construction and working of A.C. mechanical fuel pump.
9. Discuss the pump circulation cooling system with a sketch.