

R07

Code: R7310302

III B. Tech I Semester (R07) Supplementary Examinations, May 2012

**AUTOMOBILE ENGINEERING**

(Mechanical Engineering)

Time: 3 hours

Max Marks: 80

Answer any FIVE questions  
All questions carry equal marks

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- 1 What are the essential requirements to be satisfied by material for the following automobile engine components? Piston, piston rings, cylinder block, inlet valve and exhaust valve, crank shaft.
- 2
  - (a) Why is a carburetor needed in a petrol engine? Why not in diesel engine?
  - (b) What is meant by a lean mixture, a rich mixture and a correct mixture? How do they differ in the air-fuel ratio?
- 3
  - (a) Describe the trouble of cooling systems and their remedies.
  - (b) Briefly discuss the various factors which will affect the ignition timing.
- 4 Explain in detail any two of the following methods of SI engine emission control:
  - (i) Modification in the engine design and operating parameters.
  - (ii) Treatment of exhaust products of combustion.
  - (iii) Modification of fuels.
- 5 Explain the clearly the type of regulation required in case of alternators and describe various type of regulation for the same.
- 6 Describe briefly an electromagnetic clutch. Discuss the merits and demerits of this type of clutch.
- 7 Discuss various factors of wheel alignment.
- 8 Explain in detail the function and construction of a leaf spring and show how it is mounted on rear and front. Illustrate your answer with simple sketches.

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