

SET - 1

Code No: 2420301

IV B. Tech II Semester Regular Examinations, April/May 2009
AUTOMOBILE ENGINEERING
(Mechanical Engineering)

Time: 3 hours

Max Marks: 80

Answer Any FIVE Questions
All Questions carry equal marks

1. (a) What are the advantages of four-wheel drive? Explain. [5]
(b) Distinguish between pressure lubrication and splash lubrication systems. [6]
(c) What is meant by crank case ventilation? Explain. [5]
2. (a) Describe the working of a mechanical fuel pump. [8]
(b) What are the main types of fuel nozzles used in the diesel injection system? Explain. [8]
3. (a) What is the function of thermostat in a cooling system ? Describe any one type of thermostat. [8]
(b) Explain the principle of operation of Electronic ignition system. [8]
4. (a) Describe the operation of multi-point injection system [8]
(b) Describe the operation of exhaust gas recirculation system. [8]
5. (a) Explain how an electric horn works? [8]
(b) Explain the principle of working of Folo- thru bendix drive. [8]
6. (a) Describe the construction and working of a centrifugal clutch with a Suitable sketch. [10]
(b) Enumerate the advantages and disadvantages of constant mesh type gearbox. [6]
7. (a) What are the functions of a steering shaft assembly? [4]
(b) Describe briefly the different types of steering gears. [12]
8. (a) Describe the independent suspension systems for the rear axle. [8]
(b) Describe with a neat sketch, the working of floating piston type disc brake. [8]

SET - 2

Code No: 2420301

IV B. Tech II Semester Regular Examinations, April/May 2009
AUTOMOBILE ENGINEERING
(Mechanical Engineering)

Time: 3 hours

Max Marks: 80

Answer Any FIVE Questions
All Questions carry equal marks

1. (a) Describe the pressure lubrication system of an automobile? [8]
(b) What are the merits and demerits of supercharging? [8]
2. (a) What are advantages of petrol injection system over carburetion? [4]
(b) What is the function of the venturi tube in a carburetor? [4]
(c) Explain the operation of distributor fuel injection system. [8]
3. (a) Describe forced circulation cooling system. [8]
(b) Explain the operation of a battery ignition system [8]
4. (a) Explain the construction and working of a catalytic converter. [10]
(b) What are the advantages of multi point fuel injection system? [6]
5. (a) Discuss the common troubles occurring in the starting system of an automobile engine. [8]
(b) Write short notes on (i) oil pressure gauge (ii) temperature indicator [8]
6. (a) What is the advantage of the fully floating type over the half-floating and three-quarter floating type of rear axles. [8]
(b) What are the different types of wheels? Discuss their relative merits. [8]
7. (a) Name the three most common types of the steering gear. What are the differences between them? [6]
(b) Explain the principle of operation of Ackermann steering gear mechanism. [6]
(c) What is a steering lock? [4]
8. (a) Discuss the causes for the common troubles in the suspension system and suggest appropriate remedies in each case. [8]
(b) Describe with a neat sketch, the working of floating caliper type disc brake. [8]

Code No: 2420301

IV B. Tech II Semester Regular Examinations, April/May 2009

AUTOMOBILE ENGINEERING

(Mechanical Engineering)

Time: 3 hours

Max Marks: 80

**Answer Any FIVE Questions
All Questions carry equal marks**

1. (a) Describe the classification of automobile engines based on the valve arrangement in cylinder head assembly. [8]
(b) Make a note on Nitriding of crankshaft. [4]
(c) What is meant by turbocharging? [4]
2. (a) Enumerate the defects in a simple single jet carburetor. [6]
(b) Explain the different types of diesel injection systems. [10]
3. (a) What is the necessity of cooling of various engine components? [4]
(b) What are the merits of a pressure sealed cooling system. [4]
(c) What is ignition advance? How is it affected? [8]
4. (a) Explain the different pollution control techniques used in automobiles. [10]
(b) Compare timed and continuous injection system. [6]
5. (a) What is the function of the cut-out relay in charging system? Explain. [8]
(b) What is the importance of cable colours used in wiring circuit of an automobile? Explain. [8]
6. (a) Describe the two functions of a clutch. What is the purpose of the pressure plate in a clutch? [6]
(b) Describe the semi-floating, three-quarter floating types of rear axles. [6]
(c) What are the functions of a differential in an automobile [4]
7. (a) Explain whether the Ackermann steering gear mechanism satisfies the condition or correct steering. [6]
(b) Explain the over steer and under steer conditions for an automobile [6]
(c) What is wheel alignment? [4]
8. (a) Describe the construction and function of a Mac Pherson strut suspension, with a neat diagram. [10]
(b) Explain the principle of operation of vacuum brakes. [6]

Code No: 2420301

SET - 4

IV B. Tech II Semester Regular Examinations, April/May 2009
AUTOMOBILE ENGINEERING
(Mechanical Engineering)

Time: 3 hours

Max Marks: 80

Answer Any FIVE Questions
All Questions carry equal marks

1. (a) Explain the functions of various components of chassis. [12]
(b) What are the advantages of supercharging an automobile engine? [4]
2. (a) Sketch and explain the construction and operation of a simple carburetor? [10]
(b) What is an air injection system? What are its merits and demerits? [6]
3. (a) What is the function of a radiator? Describe the construction of a radiator? [8]
(b) Explain the operation of magneto ignition system. [8]
4. (a) Describe the operation of mechanical type petrol fuel injection system. [8]
(b) Describe fuel vapour emission control system. What are its advantages? [8]
5. (a) Discuss the common troubles occurring in the starting system of an automobile engine indicating the suitable remedies. [10]
(b) Write a note on manual switch used for starting motor. [6]
6. (a) What are the functions of tyres? Sketch the sectional view the tyre and indicate its various parts [8]
(b) Name two types of a propeller shaft and describe one type in detail [8]
7. (a) Discuss the possible causes and remedies for the following steering troubles:
(i) Erratic steering when brakes are applied and
(ii) Vehicle pulls continuously to one side [8]
(b) Explain why reversed Elliot type of steering head is most popular. [4]
(c) Explain the term steering lock. [4]
8. (a) What is the advantage of using a flexible rubber seal to cover the hydraulic fluid in the master cylinder reservoir? [4]
(b) Why does the master cylinder have two pistons? [4]
(c) What is the function of an unloader valve in Air brake system? [4]
(d) How do shock absorbers effects spring sag? [4]
