

Code No: 07A7EC45

**R07**

**Set No. 2**

**IV B.Tech I Semester Examinations, December 2010**

**AUTOMOBILE ENGINEERING**

**Mechatronics**

**Time: 3 hours**

**Max Marks: 80**

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

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1. What are the advantages and disadvantages of disc brakes compared with drum brakes? [16]
2. Describe in detail how would test.  
(a) Radiator leakage.  
(b) Thermostat. [8+8]
3. Compare dry and wet type of friction clutches. Discuss any type of wet clutch. [16]
4. What do you mean by total emission control packages? Describe with neat sketch two types of total emission control packages. [16]
5. Give briefly the description of the following .  
(a) Steering wheel.  
(b) Steering outer tube or steering column.  
(c) Steering shaft.  
(d) Steering gear box.  
(e) Drop arm. [16]
6. How many types of heaters are available for the cars ? Explain the principle of each type and discuss the hot water type of heaters in detail . [16]
7. Explain the functions of primary and secondary diesel fuel filter. Describe any filter of each type. [16]
8. Make a neat sketch showing the components of a dry sump method of engine lubrication. Explain its working. [16]

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**Set No. 4**

**IV B.Tech I Semester Examinations, December 2010**  
**AUTOMOBILE ENGINEERING**  
**Mechatronics**

**Time: 3 hours**

**Max Marks: 80**

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

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1. Explain the working of the following accessories.
  - (a) Trafficators.
  - (b) Flashing indicators. [8+8]
2. Explain briefly various methods by which SI engine emission can be controlled. [16]
3. Discuss briefly various methods of measuring fuel consumption and air consumption of automotive engines. How do you measure the consumption of lubricating oil? [16]
4. Explain with the help of suitable sketches the linkage used to operate a clutch. How do you adjust the same? [16]
5. Explain briefly the following:
  - (a) Integral power steering.
  - (b) linkage power steering. [8+8]
6. What is the function of an anti roll device in vehicles? Explain clearly how it performs the same in actual practice. [16]
7. Explain why it is necessary to have filter in the engine lubrication system. Describe the dye-pass and the full flow oil filtration systems. [16]
8. What are the different troubles experienced in an automobile battery? Discuss their causes, effect on the battery and suggest suitable methods to remedy these.e. [16]

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**Set No. 1**

**IV B.Tech I Semester Examinations, December 2010**

**AUTOMOBILE ENGINEERING**

**Mechatronics**

**Time: 3 hours**

**Max Marks: 80**

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

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1. Explain the following terms:

- (a) Battery voltage.
- (b) Battery capacity.
- (c) Battery efficiency.
- (d) Battery rating.

[4+4+4+4]

2. Discuss various factors of wheel alignment.

[16]

3. How do you classify automobiles? Discuss salient features of them.

[16]

4. How odor can be controlled? Discuss various methods of odor control.

[16]

5. Discuss extensively the construction and working of a Carter carburettor.

[16]

6. What are the main components of water cooling systems for an automotive engines? Describe them in detail.

[16]

7. Explain in detail various causes of clutch troubles. How can these be remedied?

[16]

8. Discuss in detail:

- (a) Plastic suspension.
- (b) Hydraulic suspension.
- (c) Daimler Benz suspension.
- (d) Hydra gas inters connected suspension system.

[4+4+4+4]

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**R07**

**Set No. 3**

**IV B.Tech I Semester Examinations, December 2010**  
**AUTOMOBILE ENGINEERING**  
**Mechatronics**

**Time: 3 hours**

**Max Marks: 80**

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

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1. Describe briefly the following:

(a) Head lights.

(b) Interior lights.

[8+8]

2. How does a compensation jet in a carburettor work? Explain clearly. [16]

3. Discuss the construction and working of the rotating armature type of magneto. [16]

4. Explain in detail the procedure for the inspection of automotive brakes. Mention the precautions to be observed. [16]

5. Explain briefly the following:

(a) Davis steering gear.

(b) Ackermann steering Gear.

[8+8]

6. What is a free wheel? Discuss its importance in the transmission of a automobile. [16]

7. (a) What is the effect of weight of vehicle and passengers on the frame side members?

(b) What type of stresses are produced in the side members of vehicle body while cornering? [8+8]

8. Discuss the effects of emissions from automobile engines on human being. [16]

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