Code No: 07A50301 **R07** **Set No. 2**

III B.Tech I Semester Examinations,November 2010
AUTOMOBILE ENGINEERING
Mechanical Engineering

Time: 3 hours **Max Marks: 80**

Answer any FIVE Questions
All Questions carry equal marks

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1. (a) What do you mean by "slow steering" and "fast steering"?
   (b) What is "reversibility" in a "steering system". [8+8]
2. Explain clearly the necessity of a transmission in a vehicle. [16]
3. What are the different types of rubber springs? Briefly explain each. [16]
4. What is the necessity of using thermostat in the engine cooling? Discuss the construction and working of that any thermostat. [16]
5. Compare the merits and demerits of the frameless constructions with those of the conventional framed construction. [16]
6. (a) How are hydro carbons formed in an automobile engine?
   (b) Explain briefly the mechanism of formation of nitric oxide. [8+8]
7. Discuss the construction and working of a combined vibrating voltage and current regulator .How is the temperature compensation achieved in such a regulator? [16]
8. Discuss in detail following special features of modern carburettor.
   (a) Throttle return check .
   (b) Anti dieseling solenoids.
   (c) Automatic mixture control. [16]

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Code No: 07A50301 **R07** **Set No. 4**

III B.Tech I Semester Examinations,November 2010
AUTOMOBILE ENGINEERING
Mechanical Engineering

Time: 3 hours **Max Marks: 80**

Answer any FIVE Questions
All Questions carry equal marks

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1. Make a sectioned sketch of a petrol engine piston and name its various parts.Explain the function of individual parts. [16]
2. Explain the working of the following accessories.
   (a) Trafficators.
   (b) Flashing indicators. [16]
3. Write a comprehensive note on the maintenance of batteries. [16]
4. Discuss briefly the following with regard to S.I engines.
   (a) Crank case emission.
   (b) Evaporative emission.
   (c) Exhaust emission. [16]
5. Describe the construction of a sliding mesh gear box. Show how the power flows in various speeds. [16]
6. 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]
7. Explain how the wheel skidding is caused and describe the principle of various techniques employed to prevent skidding .Discuss various factors influencing braking effect. [16]
8. Draw a simplified sketch of solex carbu rettor and explain its working. Discuss clearly starting idling, low speed operations, normal running and acceleration. [16]

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Code No: 07A50301 **R07** **Set No. 1**

III B.Tech I Semester Examinations,November 2010
AUTOMOBILE ENGINEERING
Mechanical Engineering

Time: 3 hours **Max Marks: 80**

Answer any FIVE Questions
All Questions carry equal marks

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1. Explain the terms; camber, castor, steering axis inclination and toe-in .What are the effects of each on the steering characteristics of a vehicle? [16]
2. Discuss different types of cylinder liners. What are their comparative advantages? Discuss various liner troubles? [16]
3. Discuss the construction and working of the rotating armature type of magneto. [16]
4. 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]
5. Describe clearly how pre-ignition differs from detonation. Use simple sketches to explain this. [16]
6. Discuss the emissions from diesel engines. On what factors this emission depend. [16]
7. Explain clearly the requirements of automobile brakes. Explain transfer of weight during application .Discuss how it affects wheel skidding. [16]
8. Describe the working of a synchro mesh gear box with the help of sketch. Why is a synchro mesh ring is used in this gear boxes? What are its merits and demerits compared to sliding mesh or constant mesh types? [16]

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Code No: 07A50301 **R07** **Set No. 3**

III B.Tech I Semester Examinations,November 2010
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 type of fuel feed pumps are used in automotive diesel engines? Describe the construction and working of any such pump. [16]
2. Name different methods of engine cooling. Explain in detail the air cooling method. [16]
3. Draw a simplified wiring circuit for the lighting system of a car and discuss the same. [16]
4. How are the constant mesh transmissions arranged for obtaining torque changes? Discuss the advantages of a constant mesh box over the sliding mesh type. [16]
5. Discuss how various defects are caused in the braking system of the automobiles. Suggest also suitable remedies. [16]
6. Discuss in detail various failures of piston rings and their causes.Suggest remedies also. [16]
7. Discuss the effects of emissions from automibile engines on human being. [16]
8. Discuss in detail various adjustments in the steering geometry and the steering gear. [16]

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