Set No. 1

IV B.Tech I Semester Supplementary Examinations, February 2007
AUTOMOBILE ENGINEERING
(Common to Mechanical Engineering and Production Engineering)
Time: 3 hours   Max Marks: 80
Answer any FIVE Questions
All Questions carry equal marks
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1. (a) Give details about classification of engines based on valve arrangements. [6]

   (b) With a neat sketch explain the operation of a two-stroke petrol engine. [5+5]

2. (a) What are the limitations of simple carburetor.   [8]

   (b) How the starting difficulty with simple carburetor can be over come?   [8]

3. (a) Explain the reason for cooling an IC engine.   [4]

   (b) What are the various characteristics of an efficient cooling system.   [4]

   (c) Draw a sketch of cooling water system and name the various parts.   [4]

4. (a) Explain the working of Centrifugal advance mechanism with the help of neat
      sketch.   [5+5]

   (b) Explain the function of lead-acid storage Battery.   [6]

5. (a) Explain briefly the lighting system provided in a car and functions of each
      unit   [4+4]

   (b) Explain clearly the operation of the turn signal light unit   [4+4]

6. (a) Explain the construction and use of Overdrive? List out its advantages and
      imitations.   [4+4+4]

   (b) Explain the working of a dog clutch.   [4]

7. (a) What are the types of suspension system.   [4]

   (b) Sketch and explain the construction and working of wishbone type independent
      front suspension used on any Indian vehicle   [6+6]

8. (a) Indicate the different types of steering linkages.   [6]

   (b) Describe with the help of a neat sketch, the working of Cam and Double roller
      Steering gear.   [5+5]

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Code No: RR410303

Set No. 2

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AUTOMOBILE ENGINEERING
(Common to Mechanical Engineering and Production Engineering)
Time: 3 hours   Max Marks: 80

Answer any FIVE Questions
All Questions carry equal marks
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1. (a) Explain the two types of cylinder-liners used in engines.   [4+4]

   (b) Describe the different types of engine valves.   [4+4]

2. (a) Give the basic components of fuel system in a petrol engine and describe the functions of each.   [4+4]

   (b) Explain the working of a A. C. mechanical fuel pump.   [4+4]

3. (a) Explain the purpose of a radiator.   [4]

   (b) Describe the types of radiator cores.   [8]

   (c) Explain the details of servicing of radiator.   [4]

4. (a) Briefly discuss the various factors which will affect the ignition timing.   [8]

   (b) Briefly discuss the main factors before deciding the optimum firing order of an engine.   [8]

5. (a) Explain the construction and working of a wind screen wiper with a simple sketch.   [4+4+2]

   (b) Write short notes about panel board instruments used in an automobile.   [6]

6. (a) Describe the constructional features of a clutch disc.   [4+4]

   (b) Explain the working of a centrifugal clutch.   [4+4]

7. (a) Explain the constant velocity universal joint with a sketch.   [4+4]

   (b) What is the purpose of a slip joint in a propeller shaft.   [4]

   (c) What are the types of rear axels?   [4]

8. (a) Explain clearly what are the different brake troubles, their causes and remedies.   [4+4+4]

   (b) What are the advantages and disadvantages of disc brakes.   [4]

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Set No. 3

IV B.Tech I Semester Supplementary Examinations, February 2007
AUTOMOBILE ENGINEERING
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Time: 3 hours   Max Marks: 80
Answer any FIVE Questions
All Questions carry equal marks
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1. (a) What is blow by? What are the results of blow by?   [3+3]

   (b) What is crankcase ventilation? Explain positive crankcase ventilation system
   with a neat sketch.   [3+3+4]

2. (a) What are the types of fuel pumps used to pump petrol from the tank to
   carburetor? Sketch them.   [4+4]

   (b) Explain the constructional details of a heavy-duty type (oil bath type) air
   filter.   [4+4]

3. (a) What are the requirements of a cooling system.   [5]

   (b) Explain the working of Forced circulation cooling system.   [5+6]

4. (a) Explain the working of Centrifugal advance mechanism with the help of neat
   sketch.   [5+5]

   (b) Explain the function of lead-acid storage Battery.   [6]

5. (a) With a neat sketch explain the construction and working of the headlamp of
   an automobile.   [4+4]

   (b) With neat sketch explain the construction and working of an electric horn
   used in automobile.   [4+4]

6. (a) What are the requirements of a clutch?   [6]

   (b) With the help of a neat sketch, explain the construction and operation of a
   sliding mesh gearbox.   [5+5]

7. (a) Describe the working of a propeller shaft based in rear wheel driven passenger
   cars.   [8]

   (b) Explain the working of a planetary and sun wheel assembly in a differential.
                                                                            [4+4]

8. (a) With the help of neat sketches explain the construction of steering linkages?
                                                                            [4+4]

   (b) Describe the worm and worm wheel steering.   [4+4]

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Set No. 4

IV B.Tech I Semester Supplementary Examinations, February 2007
AUTOMOBILE ENGINEERING
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Time: 3 hours   Max Marks: 80
Answer any FIVE Questions
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1. (a) Define compression ratio. How does it affect the horsepower of an engine?
                                                                    [2+4]
   (b) With neat sketches describe the operations of a four-stroke diesel engine.[5+5]

2. (a) Describe the constructional features of a jerk type diesel pump.   [4+4]
   (b) Describe the constructional features of a fuel injector.   [4+4]

3. (a) What are the advantages of air cooling system over water cooling system.[4+4]
   (b) Describe the working of can type thermostat.   [4+4]

4. Write notes on the :

   (a) Troubles of ignition system   [8]
   (b) Explain the working vacuum advanced mechanism.   [8]

5. (a) Explain how the head light beam adjustment is done.   [8]
   (b) Describe the working of a solenoid switch used for starter motor.   [4+4]

6. (a) Explain the construction and working of a torque converter with a neat diagram.   [4+4]
   (b) What is freewheeling device? How it works and what are its advantages.[4+4]

7. (a) What is a differential lock? Describe its operation with the neat sketch.[4+4]
   (b) Describe the working of a three Quarter floating type rear axle.   [8]

8. (a) What is the effect of slip angle, inflation pressure on the cornering force.[4+4]
   (b) Sketch the construction and explain the working of a Davis steering mechanism.   [4+4]

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