

IV B.Tech. I Semester Regular Examinations, November -2005
AUTOMOBILE ENGINEERING
(Common to Mechanical Engineering and Production Engineering)
Time: 3 hours **Max Marks: 80**

Answer any FIVE Questions
All Questions carry equal marks

1. What are the important basic components of an IC engine? Explain them briefly.
- [6+10]
2. (a) Explain the working of S.U. Electrical Fuel pump. [4+4]
(b) Describe the three tests to be performed to assess the performance of petrol engine fuel pumps. [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) Explain the use of magnetic clutches in automobiles. [6]
(b) Explain the construction working and performance of a fluid flywheel. Enumerate the advantages of fluid flywheel over the other types of clutches. [5+5]
7. (a) Explain how the wheels and tyres are designated? [4]
(b) What are the different types of wheels? Discuss their relative merits.
(c) Name the different types of tyre treads. [4+4]
8. (a) Explain clearly the working of the giriling mechanical brakes. [4+4]
(b) Explain the working of wheel cylinder. [4+4]

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1. (a) What are the pollutants emitted by CI engine exhaust? Indicate their sources. [4+4]
(b) What is smoke in exhaust gas? What are the types of diesel smoke? [4+4]
2. (a) Explain the working of S.U. Electrical Fuel pump. [4+4]
(b) Describe the three tests to be performed to assess the performance of petrol engine fuel pumps. [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. (a) What are the advantages of Battery ignition system one magneto coil ignition system. [8]
(b) Explain the difference between hot plug & cold plug. [8]
5. Draw and explain the wiring circuit for a passenger car and give the function of each component circuit. [4+4+8]
6. (a) What is the purpose of a gearbox? [4]
(b) Discuss the common troubles in the functioning of clutches and suggest suitable remedies. [4+4]
(c) What are materials used for clutch facings. [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) Compare disc brakes with drum-type brakes in regard to construction and operation. [8]
(b) Describe the working of master cylinder. [4+4]

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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) Compare the fuel systems used in diesel and petrol engines. [5+3]
(b) Describe the individual pump fuel injection system used in diesel engines. [4+4]
3. (a) Explain the working of pressure search radiation cap. [4+4]
(b) What are the general troubles with water cooling system. [4+4]
4. (a) What are the limitations of Battery ignition system? [8]
(b) Explain the term Dwell Angle and discuss with a neat sketch. [4+4]
5. (a) Name the various electrical components used in an automobile & give their functions. [4+4]
(b) Explain the working of a starter switch. [4+4]
6. (a) Differentiate between cone clutch and single plate clutch. [8]
(b) What are the general troubles with clutches and give their remedies. [8]
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. Describe the Ackermann and Davis Steering Mechanisms. What are their relative merits? [8+8]

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1. (a) What are bore and stroke of an engine? [2+2]
(b) With neat sketches explain a cycle of operation of a four-stroke SI engine. [4+8]
2. (a) Draw the layout of fuel feed system in a petrol engine and name and give the functions of each component. [4+4]
(b) Explain the mechanism provided in a A C mechanical pump to stop the fuel supply when the carburetor float chamber is full. [4+4]
3. (a) What are the types of temperature indicators and explain them. [4+4]
(b) Discuss the clogged cooling system. [8]
4. (a) What are the advantages of Battery ignition system one magneto coil ignition system. [8]
(b) Explain the difference between hot plug & cold plug. [8]
5. (a) Describe the working of a fuel gauge. [4+4]
(b) Explain the working of a Horn cutout relay. [4+4]
6. (a) What is the purpose of a gearbox? [4]
(b) Discuss the common troubles in the functioning of clutches and suggest suitable remedies. [4+4]
(c) What are materials used for clutch facings. [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) Sketch and explain the construction and working principle of the Recirculating Ball type steering gear. [5+5]
(b) What requirements are expected in a good steering system. [6]
