

Code No: 07A7EC45

R07

Set No. 2

IV B.Tech I Semester Examinations, MAY 2011
AUTOMOBILE ENGINEERING
Mechatronics

Time: 3 hours

Max Marks: 80

Answer any FIVE Questions
All Questions carry equal marks

1. Explain the common troubles encountered in gear boxes and suggest suitable remedies. [16]
2. What are the advantages and disadvantages of disc brakes compared with drum brakes? [16]
3. Describe in detail the method of battery charging. [16]
4. Explain briefly the following:
 - (a) Integral power steering.
 - (b) linkage power steering. [16]
5. Discuss the functioning of transmission system in the automobiles. [16]
6. Explain the merits and demerits of a down-draught types Carburettor over the other types. [16]
7. Explain in detail the procedure adopted to test the working of a generator - regulator system. [16]
8. Explain the necessity of emission control in a diesel engine especially during acceleration. Describe the principle of working of an aneroid valve. [16]

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Set No. 4

IV B.Tech I Semester Examinations, MAY 2011

AUTOMOBILE ENGINEERING

Mechatronics

Time: 3 hours

Max Marks: 80

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

1. Describe in detail various considerations which have to be kept in view while designing an automobile for safety. [16]
2. What is "wheel alignment"? Name the factors which pertain to steering geometry. [16]
3. Using single line diagram describe the construction and the working of the following accessories in an automobile.
 - (a) Wind screen wiper.
 - (b) Horn and
 - (c) Speedometer. [16]
4. What is the ignition advance ? On what factors does it depend? Explain clearly different methods for providing ignition advance. [16]
5. What do you understand from the term Compensation as applied to carburettor? Discuss various methods of compensation. [8+8]
6. Explain clearly how it is made sure that at no time gears are engaged simultaneously. Illustrate your answer by means of a interlocking device. [16]
7. Explain clearly the requirements of automobile brakes. Explain transfer of weight during application .Discuss how it affects wheel skidding. [16]
8. Give the comparison between electronic Catalytic converter and conventional exhaust Catalytic converter. With respect to construction, performance and applications. [16]

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Set No. 1

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AUTOMOBILE ENGINEERING
Mechatronics

Time: 3 hours

Max Marks: 80

Answer any FIVE Questions
All Questions carry equal marks

1. What type of fuel feed pumps are used in automotive diesel engines? Describe the construction and working of any such pump. [16]
2. Explain the effect of engine load on diesel engine smoke. [16]
3. Describe a hydraulically operated clutch in detail with the help of a simple diagram. [16]
4. Why is it necessary to aim the head lights correctly? Explain the complete procedure for the same. [16]
5. With the help of suitable sketches, explain the constructions and working of lead acid battery. [16]
6. Name the factors which govern the choice of springs. List the advantages of coil springs over leaf springs. [16]
7. Describe in detail constructional features of the tubed and the tubeless tyres for automotive use. Discuss also their relative merits and demerits. [16]
8. State the functions which a piston in an automobile engine cylinder is required to perform. Discuss various methods used to avoid piston slap. [16]

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Set No. 3

IV B.Tech I Semester Examinations, MAY 2011
AUTOMOBILE ENGINEERING
Mechatronics

Time: 3 hours

Max Marks: 80

Answer any FIVE Questions
All Questions carry equal marks

1. What are the different types of rubber springs? Briefly explain each. [16]
2. (a) What are the main pollutants remitted by petrol engine?
(b) State the mechanism of formation of CO. [8+8]
3. How do you check the specific gravity of an electrolyte? Describe how a battery should be maintained? [16]
4. Explain in detail different tests to which lubricants are subjected. How do you determine viscosity of lubricant oil? [16]
5. What is the pressure cooling systems? Illustrate your answer with a clear sketch of pressure sealed cap. Explain the advantages of such a system. [16]
6. Draw a sketch showing the details of the distributor type fuel injection pump and explain its working. Describe clearly the function of the internal-cam ring. [16]
7. Describe the requirements of an automobile wheel. Explain with the help of suitable sketches the construction of the disc type wheel. Compare the same with the wire type wheel. [16]
8. Explain in detail various causes of clutch troubles. How can these be remedied? [16]
