

[Total No. of Questions - 9] [Total No. of Printed Pages - 2]
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16108(D) - 0 DEC 2011

B. Tech 3rd Semester Examination
Elements of Automobile Engineering (CBS)

AU-301

Time : 3 Hours

Max. Marks : 60

The candidates shall limit their answers precisely within the answer-book (40 pages) issued to them and no supplementary/continuation sheet will be issued.

Note : Attempt five questions in all, select one question from each section A, B, C and D. Section E (question 9) is compulsory.

SECTION - A

1. (a) What are the basic requirements of an Automobile Body? (4)
(b) Draw the neat sketch of a Four Wheel Drive vehicle and indicate the various components. (6)
2. (a) Discuss the requirements of a good clutch. (3)
(b) Explain the construction and working of a centrifugal clutch. (7)

SECTION - B

3. Discuss the construction and working of synchromesh gear box with neat diagram. (10)
4. (a) What are advantages and disadvantages of Front wheel drive over and Rear wheel drive? (5)
(b) Explain the construction and working of a Universal Joint. (5)

SECTION - C

5. Explain construction and working of a typical front independent suspension system with neat diagram. (10)

2

16108

6. (a) Discuss the condition for true rolling motion of wheels during the steering. (5)
(b) What do you understand by Power Steering? Explain. (5)

SECTION - D

7. (a) What are advantages and disadvantages of Disk brakes over Drum Brakes? (4)
(b) Discuss the construction and working of a conventional tyre. (6)
8. What is the purpose of a battery in an automobile? Explain the operation of lead acid battery with a neat diagram. (10)

SECTION - E

9. (i) Give any disadvantages of front wheel drive over rear wheel drive vehicle.
(ii) Differentiate Dry and Wet Clutch.
(iii) Why Synchromesh is preferred over Sliding Mesh Gear Box?
(iv) What are the purpose of a Gear Box in an Automobile?
(v) What is the need of a suspension system in a vehicle?
(vi) Name the different type of gear boxes used in Steering System.
(vii) What is the Working Principle of Breaking System?
(viii) What are the causes of excessive Tyre Wear?
(8×2½=20)