

Code No: **R41037****R10****Set No. 1****IV B.Tech I Semester Supplementary Examinations, March/April - 2016****AUTOMOBILE ENGINEERING**  
**(Mechanical Engineering)****Time: 3 hours****Max. Marks: 75****Answer any FIVE Questions**  
**All Questions carry equal marks**

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- 1 Describe briefly the mechanism of front wheel, rear wheel and four wheel drive. Enlist the advantages and disadvantages of each. [15]
- 2 a) Explain the working of a Hotch kiss drive. [8]  
b) Explain the working differential in an automobile. [7]
- 3 Describe the Ackermann and Davis Steering Mechanisms. What are their relative merits? [15]
- 4 a) Sketch a typical front suspension of a car and name its components. [5]  
b) Why is a parking brake provided on four wheelers? [5]  
c) How is Vacuum brake different from an air brake? [5]
- 5 a) What is the importance of temperature indicator? [7]  
b) Explain the Bendix drive starting mechanism with neat sketch. [8]
- 6 What are various safety systems adopted for automobiles? Explain wind shield, traction control and speed control in detail [15]
- 7 With reference to S.I. engine emission control discuss the following methods in detail:  
a) Modification of engine design  
b) Treatment of exhaust products  
c) Modification of the fuels [15]
- 8 Discuss in detail regarding service of cylinder head, piston and main bearings. [15]