

Roll No.

23017

**M. Tech. 2nd Sem. (M.E.)
(Manufacturing & Automation)
(Elective-II)**

Examination – December, 2014

AUTOMOBILE ENGG.

Paper : 970

Time : Three Hours]

[Maximum Marks : 100

Before answering the questions, candidates should ensure that they have been supplied the correct and complete question paper. No complaint in this regard, will be entertained after examination.

Note : Attempt any *five* questions. All questions carry equal marks.

1. Describe the role of chassis in a vehicle design. Discuss basic design considerations of a chassis design. Discuss the principle of operation of a spring and a shock absorber. 20
2. What is the function of transmission system in a vehicle ? Explain it with neat sketch. What is need of a differential in vehicle ? 20

3. What are active and passive brake safety systems ? State their need for a vehicle. Explain brake booster and safety belt system with neat sketch. 20
4. What do you understand by a hatchback configuration of vehicle ? How it is different from a sedan configuration ? State functions of a SUV panel and their need. 20
5. Describe the need of a HVAC system in a vehicle. State the benefits of automatic HVAC system. How a HVAC system affects the performance of a vehicle. 20
6. State need of sensors and actuators in a vehicle ? Explain power supply system for a truck with neat sketch. Compare power supply system of a common motorcycle with a common car. 20
7. Describe following :
- (a) What do you understand by 4+4 vehicle 6
 - (b) Glazing system of a car 7
 - (c) Master brake cylinder 7
8. Describe following :
- (a) Need of cooling system in a vehicle 6
 - (b) Two circuit brake system 7
 - (c) Functions of a wishbone 7