

Roll No.

23017

**M.Tech. 2nd Semester (M.E.)
(Manufacturing & Automation)**

(Elective-II)

Examination-May, 2014

AUTOMOBILE ENGG.

Paper 970

Time : 3 hours

Max. 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 the examination.

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

1. (a) What is the purpose of independent suspension ? Explain telescopic type of shock absorber with the neat diagram.

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(b) Explain the necessity of power steering in an automobile. Sketch any power steering system and explain its working.

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(1)

[Turn Over

2. (a) Explain the overrunning clutch with neat sketch. 10
- (b) Explain the Ignition system used in 4 stroke petrol engines. 10
3. (a) Explain ABS, ASR and ESP. 10
- (b) What are power brakes ? Explain vacuum servo brake with neat sketch. 10
4. What is the significance in automobiles ? Explain its location, working in automobiles. 20
5. Explain the different types of sensors used in vehicles. Explain any four types with working principles and fault diagnostics. 20
6. (a) Explain the significances of Castor, Camber, Toe-in, Toe-out, Wheel alignment and Wheel bobbling. 10

(b) Explain the probable various steering troubles and suggest suitable remedies.

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7. (a) Explain, how the fault in an automobile is diagnosed and how to rectify them ?

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(b) Explain the significance of OBD system used in automobiles and explain its working.

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8. Explain the lighting circuit with neat diagram used in an automobile.

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