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B. E. (Seventh Semester) Examination,

Nov.-Dec. 2017

csvtuonline.com

(New Scheme)

(Mechatronics Engg. Branch)

AUTOTRONICS

Time Allowed : Three hours

Maximum Marks : 80

Minimum Pass Marks : 28

Note : Attempt all questions. Part (a) of each question is compulsory and carry 2 marks and attempt two parts from (b), (c) and (d) and carry 7 marks each.

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1. (a) Name the suspensions used in automobiles. 2
(b) Explain the layout of chassis and its main components. 7

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- (c) Explain the working of telescopic type shock absorber. 7
(d) Describe rigid axle suspension system. 7
2. (a) Classify clutches. csvtuonline.com 2
(b) Explain the working of a fluid flywheel with neat sketch. 7
(c) With the help of neat sketch explain the working of a multiplate clutch. 7
(d) Describe the construction of a clutch plate. What materials are used for its lining? 7
3. (a) Explain the need of gear box. 2
(b) Describe a synchromesh gear box with the help of a neat sketch. 7
(c) What are the advantages of constant mesh gear box over sliding mesh gear box? Describe a simple constant mesh gear box with a neat sketch. 7
(d) Explain the working of a differential. 7
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4. (a) Name the types of tyres used in Automobiles. 2
(b) Explain any two : 7
(i) Castor and camber

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- (ii) Toe in and Toe out
 - (iii) Over steer and under steer
 - (c) With the help of neat sketch explain a mechanical braking system. 7
 - (d) "Hydraulic brakes are better than mechanical brakes". Justify the statement. 7
5. (a) Name any four sensors with their use. 2
- (b) Explain electronic ignition system. 7
 - (c) Explain the air conditioning system of an automobile. 7
 - (d) Explain CRDI technology. 7