

16/7/2016

4E2050

Roll No. _____

Total No of Pages: **3**

4E2050

B.Tech. IV-Sem (Back) Exam; June-July 2016

Mechanical Engineering

4ME2(O) Automobile Engineering

Time: 3 Hours

Maximum Marks: 80

Min. Passing Marks (Main & Back): 26

Min. Passing Marks (Old Back): 24

Instructions to Candidates:-

Attempt any five questions, selecting one question from each unit. All Questions carry equal marks. Schematic diagrams must be shown wherever necessary. Any data you feel missing suitably be assumed and stated clearly.

Units of quantities used/ calculated must be stated clearly.

Use of following supporting material is permitted during examination.

(Mentioned in form No.205)

1. _____

2. _____

UNIT-I

- Q.1 (a) Describe briefly basic layout of chassis with neat and clear diagram. [6]
- (b) Write various functions of frame. [4]
- (c) Define clutch. Write functions and requirements of clutch. [6]

OR

- (a) Explain various types of chassis Frames. [6]
- (b) Describe working of cone clutch with neat and clean sketch. [6]
- (c) Compare fluid coupling and hydraulic torque converter. [4]

UNIT-II

Q.2 (a) Explain constructing and working of overdrive with neat and clear sketch. Also write advantages of overdrive. [8]

(b) Write short notes on: [4×2=8]

(i) Propeller shaft

(ii) Rear Axle

OR

Q.2 (a) Define universal joint. Explain constructing and working of universal joint with neat and clean sketch. [8]

(b) What is differential? Explain constructing and operating of differential with neat and clean sketch. [8]

UNIT-III

Q.3 (a) Write short notes on: [4×4=16]

(i) Tyre inflation pressure

(ii) Caster

(iii) Under and over steering

(iv) Toe – in and Toe – out

OR

Q.3 (a) Describe Ackermann steering gear and Davis steering gear with neat and clean sketch. [8]

(b) Explain hydraulic brakes in detail. Also write advantages and disadvantages of hydraulic brakes. [8]

UNIT-IV

- Q.4 (a) Explain briefly working of various components of lead Acid battery. [4]
- (b) Explain various methods of battery charging. [8]
- (c) Explain over charging and under charging. [4]

OR

- Q.4 (a) Write requirements of ignition system in vehicle. [4]
- (b) Explain working and constructing of coil ignition system with neat and clean diagram. [8]
- (c) Explain briefly working of electric horn. [4]

UNIT-V

- Q.5 (a) Explain working of various components of air conditioning system. [10]
- (b) What is Air bags? Explain briefly working of air bags. [6]

OR

- Q.5 Write notes on: - [8×2=16]
- (i) Night vision system (NVS)
- (ii) Global positioning system (GPS)
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