

Total No. of Questions : 12]

SEAT No. :

P2218

[Total No. of Pages : 3

[5254]-551

B.E. (Mechanical Sandwich)
AUTOMOBILE ENGINEERING (Self Study -III)
(2012 Pattern)

Time : 3 Hours]

[Max. Marks : 100

Instructions to the candidates:

- 1) *Answer any three questions from each section.*
- 2) *Answer to the two sections should be written in separate books.*
- 3) *Neat diagrams must be drawn wherever necessary.*
- 4) *Figures to the right indicate full marks.*
- 5) *Use of logarithmic tables slide rule, Mollier charts, electronic pocket calculator and steam tables is allowed.*
- 6) *Assume suitable data, if necessary.*

SECTION - I

- Q1) a)** Explain the following terms: **[4]**
- i) Air resistance
 - ii) Rolling resistance
- b) Explain the construction of a truck chassis frame with a neat sketch. **[12]**

OR

- Q2) a)** Write advantages and disadvantages of frameless body construction. **[8]**
- b) Explain the characteristics of Front engine front drive, Rear engine rear drive. **[8]**
- Q3) a)** Write the desirable characteristics of a good clutch lining material. **[8]**
- b) Explain the working of a differential in rear axle with a neat sketch. **[8]**

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OR

Q4) a) Explain merits and demerits of diaphragm type spring over coil type spring used in clutch. [8]

b) Explain the working of a constant mesh gear box with a neat sketch. [8]

Q5) a) Explain centre point steering and cornering force. [6]

b) Explain the working of a shock absorber with a neat sketch. [6]

c) Explain the working of a power steering with a neat sketch. [6]

OR

Q6) a) Explain the working of a disc brake with a neat sketch. [6]

b) Explain merits and demerits of independent suspension. [6]

c) Write short on "ABS". [6]

SECTION - II

Q7) a) Describe various safety provisions adopted in modern automobile. [8]

b) Explain with example basic sensors used in automobile. Describe the purpose and advantages of it. [8]

OR

Q8) a) What do you understand by active safety and passive safety of automobile? Explain. [8]

b) Describe procedure to register to RTO, new vehicle passenger car, as per CMVR rules. [8]

Q9) a) Explain various performance parameters to check, when vehicle is manufactured. [8]

b) Draw a neat sketch of chassis Dynamometer and describe the function of each component on it. [8]

OR

Q10)a) Explain the various types of a crash tests performed in Laboratory. Justify answer with neat sketch. [8]

b) Describe what do you mean by stability of vehicle? What are factors responsible for it? Explain. [8]

Q11)a) Describe with neat sketch Multi-axle vehicle. [10]

b) With neat sketch explain the following: [8]

i) Hydraulic dozers

ii) Tankers

OR

Q12) Write short note on the following: [18]

i) Dumpers

ii) Windscreen wiper

iii) Automobile bumpers

