

T.Y. Diploma : Sem. V
[ME/MH/MT]
Automobile Engineering



Time: 3 Hrs.]

Prelim Question Paper

[Marks : 100

- Instructions :**
- (1) All questions are compulsory.
 - (2) Answer each next main Question on a new page.
 - (3) Illustrate your answers with neat sketches wherever necessary.
 - (4) Figures to the right indicate full marks.
 - (5) Assume suitable data, if necessary.

1. (a) Attempt any **THREE** of the following: [12]
 - (i) Write functions of universal joint and slip joint.
 - (ii) State purpose and function of clutch in automobile.
 - (iii) Draw neat labelled sketch of rack and pinion steering gear.
 - (iv) State necessity of braking system. What is function of parking brakes?
(b) Attempt any **ONE** of the following: [6]
 - (i) Draw car air conditioning system layout and explain in brief.
 - (ii) Describe the working of overdrive with neat sketch.
2. Attempt any **FOUR** of the following : [16]
 - (a) State the advantages of LPG and CNG operated engines.
 - (b) Define TOE-IN and TOE-OUT, state its effects and its normal range.
 - (c) Explain working of Bendix drive used in starting system, with neat sketch.
 - (d) Describe with neat sketch working of Rear Axle used in Truck.
 - (e) State the various types of automobile bodies.
3. Attempt any **TWO** of the following : [16]
 - (a) Describe pneumatic braking system with neat sketch and state its advantages.
 - (b) Differentiate between Drum and Disc brake (any eight point).
 - (c) Explain construction and working of Wishbone type suspension system with neat sketch.
4. (a) Attempt any **THREE** of the following: [12]
 - (i) Differentiate between radial and cross ply tyres.
 - (ii) What is the requirement of suspension system in Automobile?
 - (iii) Draw neat labelled sketch of single plate coil spring clutch of automobile.
 - (iv) Draw a layout of lighting system of four wheeler.
(b) Attempt any **ONE** of the following: [6]
 - (i) State the important precautions to be taken while using air-conditioning system of a vehicle. (any four)
 - (ii) Modern car uses R134a refrigerant instead of R-12. State reasons thereof.
5. Attempt any **FOUR** of the following: [16]
 - (a) Compare two-wheel and four-wheel drive of vehicle.
 - (b) State the necessity of wheel alignment and wheel balancing.
 - (c) Describe telescopic shock absorber with sketch.
 - (d) Explain battery capacity and rating.
 - (e) How Automobiles are classified?
6. Attempt any **TWO** of the following: [16]
 - (a) Describe construction of MacPherson suspension system. State its advantages.
 - (b) Explain with neat sketch electronic ignition system.
 - (c) Explain construction and working of alternator, state its advantages.

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T Y Diploma Sem-V: Paper Discussion Schedule

Branches	Date	Day	Timing	Centres
Mechanical Group	8 Nov. 2018	Thursday	9 a.m. to 11 a.m.	Dadar, Kalyan
	8 Nov. 2018	Thursday	12 noon to 2 p.m.	Thane