

TED (15) 4022  
(Revision-2015)

**A20-03457**

Reg.No.....  
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DIPLOMA EXAMINATION IN ENGINEERING/TECHNOLOGY/  
MANAGEMENT/COMMERCIAL PRACTICE, APRIL-2020

**AUTOMOBILE ENGINEERING**

[Maximum marks: 75]

(Time: 2.15 Hours)

**PART – A**

(Answer any *three* questions in one or two sentences. Each question carries 2 marks)

- I. (1). State any four functions of cooling system in automobile.  
(2). List any 4 functions of gear box.  
(3). Differentiate toe in and toe out.  
(4). Name the protection systems used in automobile.  
(5). Name the types of wheels used in automobile. (3 x 2 = 6)

**PART – B**

(Answer any *four* of the following questions. Each question carries 6 marks)

- II. (1). Explain with sketch the working of simple carburetor.  
(2). Draw the transmission system of an automobile and name the components.  
(3). Explain with the diagram the working of hydraulic brake system.  
(4). Explain the turbo charger and inter cooler.  
(5). Describe the splash lubricating system.  
(6). Explain semi floating rear axle.  
(7). Briefly explain the following automobile emission.  
(i). Nitrogen Oxide. (ii). Soot. (iii). Carbon monoxide. (4 x 6= 24)

**PART – C**

(Answer *any of the three units* from the following. Each question carries 15 marks)

**UNIT –I**

- III. (a). Illustrate the fuel system of diesel engine and functions of each part. (7)  
(b). Compare air cooling and water cooling system. (8)

**OR**

- IV. (a). Explain any four governing system used in automobile. (7)  
(b). Explain with sketch the working of battery ignition system. (8)

### **UNIT-II**

- V. (a). Explain with neat sketch the working of constant mesh gear box. (7)  
(b). Illustrate the functions and working principle of differential. (8)

### **OR**

- VI. (a). Explain with sketch working of a single plate clutch. (8)  
(b). Explain with sketch the construction and working of propeller shaft. (7)

### **UNIT-III**

- VII. (a). Explain with line diagram of pneumatic brake system. (7)  
(b). Explain with sketch worm and worm sector steering gear mechanism. (8)

### **OR**

- VIII. (a). Illustrate the functions and working of master cylinder in automobile. (7)  
(b). Explain the following steering geometry. (8)  
(i). camber. (ii). Caster. (iii). King pin inclination.

### **UNIT-IV**

- IX. (a). Describe the working of Electronic ignition system. (7)  
(b). Explain with sketch the air suspension system of automobiles. (8)

### **OR**

- X. (a). Illustrate the working of multipoint fuel injection system (MPFI) (7)  
(b). Explain the working of common rail diesel injection (CRDI) system. (8)