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**MANIPAL INSTITUTE OF TECHNOLOGY**  
**MANIPAL**  
*(A constituent unit of MAHE, Manipal)*

**IV SEMESTER B.TECH. (OPEN ELECTIVE)**  
**END SEMESTER EXAMINATIONS, APRIL 2018**

**SUBJECT: INTRODUCTION TO AUTOMOBILE ENGINEERING**

**[AAE 3283]**

**REVISED CREDIT SYSTEM**  
**(30/04/2018)**

Time: 3 Hours

MAX. MARKS: 50

**Instructions to Candidates:**

- ❖ Answer **ALL** the questions.
- ❖ Missing data may be suitable assumed.

- 1A.** Compare external combustion engine to internal combustion engine. **(03)**
- 1B.** Sketch and explain the construction and working of 2 stroke petrol engines. **(05)**
- 1C.** Sketch and label the engine connecting rod. **(02)**
- 2A.** Contrast the differences between Carburetion and fuel injection. **(03)**
- 2B.** Draw a neat sketch of electronic fuel injector and label the parts. **(02)**
- 2C.** Sketch and explain the layout of common rail injection. **(05)**
- 3A.** List the components of e-CVT transmission system. **(02)**
- 3B.** Sketch and explain the layout of thermosyphon type cooling system. **(03)**
- 3C.** Sketch and explain the construction of synchronizer used in synchro mesh gear box. **(05)**
- 4A.** With a neat sketch explain splash lubrication system. **(03)**
- 4B.** List the components of power steering system. **(02)**
- 4C.** Why is coefficient of friction important in brakes? Sketch and discuss the working of drum brake. **(05)**
- 5A.** Sketch and discuss the construction of Mc pherson strut suspension assembly. **(03)**
- 5B.** Compare radial ply tire to cross ply tire. **(03)**
- 5C.** Sketch and explain the layout of battery ignition system. **(04)**