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**MANIPAL INSTITUTE OF TECHNOLOGY**

**MANIPAL**

*(A constituent unit of MAHE, Manipal)*

**V SEMESTER B.TECH. (AUTOMOBILE ENGINEERING)**

**END SEMESTER EXAMINATIONS, NOV/DEC 2019**

**SUBJECT: TWO AND THREE WHEELED VEHICLE [AAE 4022]**

**REVISED CREDIT SYSTEM**

**(22/11/2019)**

Time: 3 Hours

MAX. MARKS: 50

**Instructions to Candidates:**

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

- 1A.** Explain the construction of a two wheeler frame with neat sketch. **(05)**
- 1B.** Discuss the constructional features of any two types of wheel used for two-wheelers. **(03)**
- 1C.** What are the factors that affect the life of automotive tires? **(02)**
- 2A.** Provide brief classification of motorcycles and state the features of each type. **(05)**
- 2B.** Illustrate the working principle of a master cylinder with neat sketch. **(03)**
- 2C.** State reason for piston scuffing. **(02)**
- 3A.** Explain the working of a sequential gear box with a neat sketch .Discuss the gear engagement mechanism for the sequential gear box. **(05)**
- 3B.** Why ignition system is important? What are the requirements of an ideal ignition system? **(03)**
- 3C.** How rear wheel plays a vital role in maintaining the directional stability during braking? **(02)**
- 4A.** Sketch and label the layout of Moped. **(03)**
- 4B.** Why radial tyre is more suitable than the cross-ply tyre for two wheelers? **(02)**
- 4C.** Explain the foot operated mechanical brakes. **(05)**
- 5A.** Describe the construction and working of double link type front suspension **(04)**
- 5B.** What is triple-tree arrangement in two-wheeler steering system? **(03)**
- 5C.** Why differential gear box is necessary in three wheeler? **(03)**

