MANIPAL INSTITUTE OF TECHNOLOGY



Time: 3 Hours

(A constituent unit of MAHE, Manipal)

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✤ Answer ALL the questions.

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)

Instructions to Candidates:

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

MAX. MARKS: 50