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Sixth Semester B.E. Degree Examination, June/July 2024

Automotive Chassis & Suspensions

Time: 3 hrs.

Max. Marks: 100

Note: Answer any FIVE full questions, choosing ONE full question from each module.

Module-1

- 1 a. Briefly explain with a neat sketch, the layout of a 4 wheel drive automobile. (10 Marks)
- b. Discuss in detail classification of Automobile. (10 Marks)

OR

- 2 a. With a neat sketch, discuss various load acting on chassis frame. (10 Marks)
- b. Draw a layout of a typical chassis frame, show all the components mounted on it. (10 Marks)

Module-2

- 3 a. Explain the following term :
 - (i) Camber
 - (ii) Castor
 - (iii) King pin inclination
 - (iv) Toe-in. (10 Marks)
- b. With a neat sketch, explain worm and wheel steering gear. (10 Marks)

OR

- 4 a. Sketch and explain the construction and working of a power steering system. (10 Marks)
- b. Briefly explain with sketch, the factors of wheel alignment. (10 Marks)

Module-3

- 5 a. What is the need of differential in Automobile? Explain. (10 Marks)
- b. Explain Semifloating and full floating arrangement of rear axle. (10 Marks)

OR

- 6 a. Briefly explain the Hotchkiss drive with a neat sketch. (10 Marks)
- b. List out the types of final drive and explain. (10 Marks)

Module-4

- 7 a. Sketch and explain the working of disc brake. (10 Marks)
- b. Discuss the working of Air brake. Also mention its advantages. (10 Marks)

OR

- 8 a. Write the requirement of brake fluid. Also mention advantages of disc brakes over drum brakes. (10 Marks)
- b. With a neat sketch, explain the working of hydraulic brake system. Also mention its advantages. (10 Marks)

Important Note : 1. On completing your answers, compulsorily draw diagonal cross lines on the remaining blank pages.
2. Any revealing of identification, appeal to evaluator and /or equations written eg. 42+8 = 50, will be treated as malpractice.

Module-5

- 9 a. Explain with neat sketches:
 (i) Hydraulic suspension
 (ii) Rubber suspension. (10 Marks)
- b. Explain with neat sketch, construction of leaf spring. Also mention the four advantages of independent suspension. (10 Marks)

OR

- 10 a. Write the desirable properties of tyres and explain. (10 Marks)
- b. Compare the merits and demerits of tubeless tyres. (10 Marks)

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