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Seventh Semester B.E./B.Tech. Degree Examination, June/July 2025  
**Automotive Electrical and Electronic Systems**

Time: 3-hrs.

Max. Marks: 100

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

**Module-1**

- 1 a. Discuss with a neat sketch a typical wiring system. (10 Marks)  
b. Write a brief note on earth return and insulated system. (10 Marks)

**OR**

- 2 a. With a neat sketch, explain the principle of lead acid cells. (10 Marks)  
b. Write a brief note the defects and remedies of batteries. (10 Marks)

**Module-2**

- 3 a. Explain the construction and working of cutout relay with suitable figure. (10 Marks)  
b. Discuss the principles of generation of direct current with relevant sketch. (10 Marks)

**OR**

- 4 a. Discuss the working and construction of an alternator with a suitable figure. (10 Marks)  
b. Describe the characteristics of a series motor. (10 Marks)

**Module-3**

- 5 a. Explain the working of a battery ignition system with suitable figure. (10 Marks)  
b. Write a note on advantages and disadvantages of conventional ignition system. (10 Marks)

**OR**

- 6 a. Explain the construction of head lamp mounting of with a suitable figure. (10 Marks)  
b. Write a brief note on various dash board instruments. (10 Marks)

**Module-4**

- 7 a. Describe the concept of combined ignition and fuel management systems. (10 Marks)  
b. Explain the concept complete vehicle control systems. (10 Marks)

**OR**

- 8 a. With a suitable figure, explain the concept Antilock Braking System. (10 Marks)  
b. Write a note short note on Active Suspension. (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. Discuss the various components of an electric vehicle with a layout. (10 Marks)
- b. Discuss the advantages and disadvantages of an electric vehicle. (10 Marks)

**OR**

- 10 a. Describe the layout and components of an hybrid electric vehicles. (10 Marks)
- b. List the advantages and disadvantages of hybrid electric vehicles. (10 Marks)

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