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**Sixth Semester B.E. Degree Examination, June/July 2018**  
**Auto Electrical and Electronic Systems**

Time: 3 hrs.

Max. Marks: 100

**Note: Answer FIVE full questions, selecting  
atleast TWO questions from each part.**

**PART – A**

- 1 a. Explain with a neat sketch construction and working of lead-acid battery. (08 Marks)  
 b. What is Battery testing? Explain with a neat sketch hydrometer test. (06 Marks)  
 c. Write a short note on :  
 i) Battery rating  
 ii) Factors affecting battery life  
 iii) Factors affecting charging. (06 Marks)
- 2 a. Explain with a neat sketch, the construction and working principle of alternator. (10 Marks)  
 b. Explain with neat sketch, third brush generator. (06 Marks)  
 c. List out the requirements of charging system. (04 Marks)
- 3 a. Explain with sketch, working principle of Bendix drive starting system used in car. (10 Marks)  
 b. Explain the difference between the operation of the Bendix drive and over running clutch drive. (10 Marks)
- 4 a. With a neat sketch explain Battery ignition system used in SI engine and list out the advantages of it. (08 Marks)  
 b. Describe the construction and working of spark plug. (06 Marks)  
 c. Discuss in detail any one type of spark advance mechanism. (06 Marks)

**PART – B**

- 5 a. Explain the following with circuit :  
 i) Electric horn  
 ii) Fuel gauge  
 iii) Dim – Dip light. (12 Marks)  
 b. Explain the head light Aiming and leveling with necessary sketches. (08 Marks)
- 6 a. With a neat sketch. Explain automobile air conditioning system. (10 Marks)  
 b. List out any five requirements of HVAC. (05 Marks)  
 c. Describe the circuit diagram of screen heater with time relay. (05 Marks)
- 7 a. Explain with block diagram complete control system of vehicle. (08 Marks)  
 b. Write a short notes on :  
 i) Hybrid vehicle  
 ii) Fuel cells  
 iii) Dwell angle. (12 Marks)
- 8 Write a short note on :  
 a. Air bags  
 b. Antilock braking system  
 c. Seat belt pretensioner  
 d. Traction control. (20 Marks)

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Important Note : 1. On completing your answers, compulsorily draw diagonal cross lines on the remaining blank pages.  
 2. Questions drawn from equations written e.g. 4+2=8 - 50, will be treated as malpractice.