USN [ ][ ][ ][ ][ ][ ][ ][ ][ ][ ]

Sixth Semester B.E. Degree Examination, June/July 2017
Automotive Electrical and Electronics Systems

Time: 3 hrs.

Max. Marks:100

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

PART – A

1   a. Describe the construction and working of battery hydrometer. **(08 Marks)**
    b. Compare lead Acid Batteries with alkaline Batteries. **(06 Marks)**
    c. Discuss the following by giving neat sketches : i) the plate group ii) the separator. **(06 Marks)**

2   a. What is an alternator? Compare it with generator. **(06 Marks)**
    b. With a neat sketch, explain the working principle of a third brush generator. **(08 Marks)**
    c. Explain the construction and working of cutout relay. **(06 Marks)**

3   a. List out different types of starting motor drives. Explain anyone them with a neat sketch. **(12 Marks)**
    b. Explain the operation of cranking motor with a neat sketch. **(08 Marks)**

4   a. With a neat sketch, explain the battery ignition system for a 4 cylinder spark ignition engine. **(10 Marks)**
    b. Sketch and explain the centrifugal spark advance mechanism in full and no advance positions. **(10 Marks)**

PART – B

5   a. Describe with the help of a neat diagram, the working of thermostatic type of temperature gauge. **(08 Marks)**
    b. What are the advantages of electric fuel pump over mechanical pump? With a neat sketch explain its working and constructional details. **(12 Marks)**

6   a. With neat sketch explain the basic principle of an air – conditioning system. **(10 Marks)**
    b. Summarize the requirements of ventilation and air conditioning system in automobiles. **(05 Marks)**
    c. Write a short note on seat heaters. **(05 Marks)**

7   a. Explain the process to be carried out to calculate injection duration. **(10 Marks)**
    b. Explain the effect of various engine design parameters on engine emissions. **(10 Marks)**

8   Write a note on :
    a. ABS
    b. Seat belt tensioners
    c. Central locking system
    d. Active suspension. **(20 Marks)**

* * * * *