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Sixth Semester B.E. Degree Examination, Dec.2016/Jan.2017
Automotive Electrical and Electronic Systems

Time: 3 hrs.

Max. Marks:100

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

PART – A

1. a. Explain the construction and working of a Lead – acid battery. (08 Marks)
b. Describe various tests that can be conducted on a Battery. (08 Marks)
c. Write a note on Nickle – Cadmium cell. (04 Marks)
2. a. Describe with a neat sketch, the principle of a DC generator. (08 Marks)
b. What is Armature reaction? Explain in brief. (06 Marks)
c. Explain voltage regulator, with a neat diagram. (06 Marks)
3. a. Describe various torque terms related to cranking motor. (06 Marks)
b. Explain with a neat sketch, a standard Bendix drive. (08 Marks)
c. List the causes and remedies for the following :
i) Armature fails to rotate.
ii) The engine cranks slowly but does not start.
iii) Solenoid plunger chatters. (06 Marks)
4. a. With a neat sketch, explain Battery – coil Ignition system of a 4 – cylinder SI engine. (08 Marks)
b. What are the requirements of a good spark plug? Sketch and explain the construction details of a spark plug. (08 Marks)
c. Write a note on : Electronic spark timing and control. (04 Marks)

PART – B

5. a. Differentiate between earth return and insulated return systems. (04 Marks)
b. What is Head light dazzle? List the reasons and remedies. (06 Marks)
c. Explain the working of : i) Wind screen wiper ii) Temperature gauge. (10 Marks)
6. a. With a neat diagram, explain and typical air conditioning circuit in detail. (08 Marks)
b. What are the functional requirements of a heating and ventilating system? Explain plenum chamber effect of ventilation. (08 Marks)
c. Write a note on seat heaters. (04 Marks)
7. a. Explain Combined Ignition and fuel management system, with a block diagram. (10 Marks)
b. With a block diagram, describe the complete vehicle management system. (10 Marks)
8. a. What is ABS? Mention its requirements. (06 Marks)
b. With a neat diagram, explain the sensors used in an Active Suspension System. (08 Marks)
c. Write short notes on : i) Central locking ii) Seat belt tensioner. (06 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.