Total No. of Questions : 10]

SEAT No. :

P3390

[Total No. of Pages : 2

[5253]-516

T.E. (Automobile Engineering) (Semester - I)

AUTOMOTIVE ELECTRICAL AND ELECTRONICS

(2015 Pattern)

Time : 2½ Hours] *[Max. Marks : 70*

Instructions to the candidates:

1) ***Neat diagrams, must be drawn wherever necessary.***
2) ***Figures to the right side indicate full Marks.***
3) ***Assume, suitable data, if necessary.***

Q1) a) Explain Multiplex Wiring System **[5]**

b) Write a short note on CAN bus. **[5]**

OR

Q2) a) Compare Lead Acid battery with alkaline battery. **[5]**

b) Explain working of electrical speedometer with neat diagram. **[5]**

Q3) a) Enlist the troubles of the ignition system which are likely to be encountered while running the vehicle and their remedies. **[6]**

b) Write a short note on battery performance. **[4]**

OR

Q4) a) Enlist different drive mechanisms of Starting motor. Explain any one of them. **[5]**

b) Explain any one method of spark advance. **[5]**

Q5) a) Classify the MAP sensors based on their working principles. Explain working of any one of them. **[10]**

b) List out the various sensors used for electronically controlling of the engine. Explain Knock Sensor with neat figure. **[8]**

OR

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Q6) a) Enlist the types of exhaust gas oxygen sensors. Explain any one of them. **[8]**

b) Enlist the types of actuators used in engine. Explain working of any one solenoid based engine actuator. **[10]**

Q7) a) Why the air-fuel ratio is controlled closed to stoichiometric ratio in electronically controlled engine'? Why there is need to control the engine operation electronically? Justify your answer with neat figures and graphs. **[12]**

b) Enlist the components of fuel system. **[4]**

OR

Q8) a) Explain all Injection Strategies or Techniques used in SI Engine with neat figures. **[8]**

b) What is meant by closed loop control of engine'? When the engine control switches from open loop to closed loop? **[8]**

Q9) a) Explain Anti-lock Braking System in details with layout. **[8]**

b) Explain Tire pressure monitoring system in brief. **[8]**

OR

Q10)a) What is meant by adaptive cruise control? Explain in detail. **[8]**

b) Explain Supplementary Restrain System of Airbag with neat figures **[8]**