Sem VIII /CBSGS/Auto/Autotronics/M-J-17 12/05/17

Q.P. Code: 13514

(3 Hours) **(Total Marks: 80)**

N.B: 1. Question No. **1** is **compulsory**.
2. Attempt any **Three** from remaining questions.
3. Draw neat sketches wherever necessary.

Q.1 Write comparison (differentiate) between the following: 20
a) Lead acid battery and Alkaline battery
b) Dynamo and Alternator
c) Reserve capacity and Cold Cranking Ampere capacity with its graph
d) Coil ignition system and magneto Ignition system

Q.2 a) Define Torque terms used in relation with Engine and Starting system. Also classify Starter motor drives and with neat sketch explain the working of any one type of Starter motor drive. 10
b) Describe in detail CDI and DIS with proper diagrams and differentiate between the two. 10

Q.3 a) Describe the working of PEM and Alkaline fuel cells in brief with suitable sketches and reactions. 10
b) Discuss with suitable sketches the functioning of any three types of Automotive Sensors. 10

Q.4 a) Discuss with suitable sketches the functioning of any three types of Automotive Actuators. 10
b) Explain the various Cables, their sizes, color codes and wiring harness systems used in Automotive Vehicles. 10

Q.5 a) Describe the working of any two Intelligent Vehicle systems with suitable schematic diagrams and also mention their applications. 10
b) What is the need of 42 volt automotive electrical system? Explain transition from 12 volt to 42 volt system with its advantages and disadvantages. 10

Q.6 Write short-notes on any **four** of the following: 20
a) Automotive embedded system
b) Sealed beam head lamp construction
c) Power operated windows
d) Air management system
e) Rectification from AC to DC