

22651

12425

03 Hours / 70 Marks

Seat No.

--	--	--	--	--	--	--	--

-
- Instructions* – (1) All Questions are *Compulsory*.
(2) Answer each next main Question on a new page.
(3) Illustrate your answers with neat sketches wherever necessary.
(4) Figures to the right indicate full marks.
(5) Assume suitable data, if necessary.
(6) Mobile Phone, Pager and any other Electronic Communication devices are not permissible in Examination Hall.

Marks

- 1. Attempt any FIVE of the following :** **10**
- a) State the types of Resistors and write their applications.
 - b) Describe the functions of circuit breakers.
 - c) State the functions of following battery component.
 - i) Post strap
 - ii) Vent plugs
 - d) Describe the functions of charging systems.
 - e) State the functions of starter drives.
 - f) Describe the need of automatic head light dimming.
 - g) Describe ohm meter test of Electronic fuel injector.

P.T.O.

2. Attempt any THREE of the following :**12**

- a) State the applications of following switches in Automobiles.
 - i) SPST
 - ii) SPDT
 - iii) Ganged switch
 - iv) Mercury switch
- b) Compare Relays and solenoids on the basis of :
 - i) Construction
 - ii) Principle of operation
 - iii) Applications
 - iv) Functions
- c) Illustrate with simple circuit diagram the testing of short to ground circuit defect using voltmeter and interpret the results.
- d) State types of battery charging and write the precautions need to be taken while charging the battery.
- e) Justify the statement with suitable reasons “Field excitation in alternator is necessary”. State how it is controlled ?

3. Attempt any THREE of the following :**12**

- a) State methods of triggering of primary circuit. Describe any one with suitable sketch.
- b) Describe construction and working of overrunning clutch with neat sketch.
- c) Describe the electronic spark timing with suitable block diagram.
- d) Justify the statement with suitable reasons “waste spark ignition system improves mileage and reduced tail pipe emissions.”

- 4. Attempt any THREE of the following :** **12**
- a) Draw the layout of electric two wheeler and state the functions of any four components.
 - b) Describe park assist system with suitable block diagram.
 - c) Describe the operation of on/off head light with time delay and state its importance.
 - d) Describe SAE J 2012 diagnostic trouble codes with suitable examples.
- 5. Attempt any TWO of the following :** **12**
- a) Describe the construction and working of engine oil pressure gauge with neat labelled sketch.
 - b) Describe construction and principle of operation of Alternator. Describe the importance of voltage regulation in Alternator.
 - c) Illustrate specific gravity test and battery terminal test. Predict the possible test results and their inference.
- 6. Attempt any TWO of the following :** **12**
- a) Illustrate with sketch Insulated circuit resistance test of starter. Predict possible test results and their inference.
 - b) Illustrate the engine coolant temperature sensor testing procedure. Predict the possible test results and their inference.
 - c) Justify the statement with suitable reasons “on board diagnostic is important tool as per as BSVI emission norms concern.
-