

17617

16117

3 Hours / 100 Marks

Seat No.

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

Marks

1. a) **Attempt any THREE of the following:** **12**
- (i) Enlist any two purposes of relay and draw neat sketch of NC relay.
- (ii) List any four components used in lead acid battery and enlist its function.
- (iii) Explain working of engine oil pressure gauge with neat sketch.
- (iv) Describe initial charging procedure of battery.
- b) **Attempt any ONE of the following:** **6**
- (i) Enlist any three types of circuit defect and describe open circuit with neat sketch.
- (ii) Enlist any four battery tests and explain specific gravity test.

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- 2. Attempt any FOUR of the following: 16**
- a) Enlist any two purposes of fuses and describe cartridge fuse and maxi fuse with neat sketch.
 - b) Explain working of power window.
 - c) Describe with neat sketch working of charge indicator light circuit.
 - d) Explain the concept of jump starting with sketch.
 - e) Draw neat labeled wiring diagram and describe working of temperature gauge.
 - f) Enlist type of switches and explain any SPDT switch.
- 3. Attempt any FOUR of the following: 16**
- a) Enlist any two functions of starter drive and draw neat labelled sketch of Bendix drive.
 - b) List the four components of conventional ignition system and state their functions.
 - c) State the function of:
 - (i) crank shaft position sensor
 - (ii) detonation sensor
 - d) Describe the procedure of testing the following alternator component:
 - (i) Rotor
 - (ii) Stator
 - e) Enlist any four components of starting system and explain working of starting system circuit with neat sketch.

- 4. a) Attempt any THREE of the following:** **12**
- (i) Differentiate between conventional and electronic ignition system.
 - (ii) Describe operation of distributor less ignition system with block diagram.
 - (iii) Draw a neat labelled diagram of ignition coil.
 - (iv) Enlist the methods of triggering of primary circuit. Explain any one.
- b) Attempt any ONE of the following:** **6**
- (i) Describe the construction and working of lead acid battery.
 - (ii) Describe the construction and working of alternator.
- 5. Attempt any FOUR of the following:** **16**
- a) Describe the operation of automatic head light dimming.
 - b) Describe the testing procedure of oxygen sensor.
 - c) Explain fibre optics in automotive electronics.
 - d) State the purpose of OBD-II.
 - e) Write the procedure for sound test for testing electronic fuel injector.
 - f) Describe the operation of common anti-theft system.
- 6. Attempt any FOUR of the following:** **16**
- a) Describe the automatic door lock system.
 - b) Explain the working of MAP sensor.
 - c) Define the following terms:
 - (i) Drive cycle
 - (ii) Trip
 - d) Describe the operation of keyless entry system.
 - e) Explain the free speed testing procedure in starting system.
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