17619

21819

3 Hours / 100 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. (A) Attempt any THREE of the following : **12**

(a) Enlist the four uses of diode in Automobile.

(b) State the importance of display devices used in automobile applications. List any two types of digital display devices.

(c) Draw a neat block diagram of a basic computer used in automobile. Describe the function of any two components.

(d) Explain with neat sketch the working of idle speed actuator.

(B) Attempt any ONE of the following : **6**

(a) Explain the use of semiconductor diodes in voltage regulation of charging system with the help of a schematic diagram.

(b) With a neat sketch explain the construction and working of oxygen sensor.

2. Attempt any FOUR of the following : **16**

(a) State the different types of computer memories. Describe the function of ROM.

(b) Explain open-loop control system with a neat block diagram.

(c) Draw a neat block diagram to indicate canister purge control circuit.

(d) Enlist any four automotive sensors alongwith their location. State its functions.

(e) Explain the low pressure warning system.

(f) Explain electronic control of suspension.

3. Attempt any FOUR of the following : **16**

(a) Convert $(624)_{10}$ into equivalent binary number and write the steps involved.

(b) Explain the concept of signal conditioning.

(c) Explain CAN bus system with neat block diagram.

(d) Explain with neat sketch working of EGR valve.

(e) Describe the procedure used to indicate the TDC reference mark of cylinder No. 1 to the ECM.

4. (A) Attempt any THREE of the following : **12**

(a) Draw a neat block diagram indicating electronic control system used in CRDI.

(b) Explain the working of electronic power steering system.

(c) List the six steps followed during component testing. Explain any one step in detail.

(d) Explain the use of battery tester in testing of an automotive battery.

(B) Attempt any ONE of the following : **06**

(a) Explain with neat sketch, construction and working of an oil flow measurement sensor.

(b) Explain the working of ABS system with neat sketch. State the four advantages of ABS system.

5. Attempt any FOUR of the following : **16**

(a) State the types of errors and explain error compensation.

(b) Describe the applications of Global positioning system used as a navigation system in car.

(c) Write the procedure for checking an oxygen sensor with a digital multimeter.

(d) Describe the procedure of diagnosing MPFI system.

(e) Describe application of oscilloscope while checking alternator output signal.

(f) Draw a sketch of LED and photodiode arrangement used in ignition system. Describe its operation.

6. Attempt any FOUR of the following : **16**

(a) State the instruments used for measuring following parameters :

(i) Speed

(ii) Level

(iii) Distance

(iv) Temperature

(b) Describe the testing procedure to conduct a test on any one automotive actuator.

(c) State the different types of communication system used in automobile. State function of Bluetooth technology.

(d) Describe the working of crankshaft position sensor.

(e) Explain the conversion of analog to digital signal with suitable sketch.
