17619

21718

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** :
- a) State the need of electronics in Automobile Engineering. **4**
- b) Draw a neat block diagram of basic computer and describe it. **4**
- c) Explain the working of crank shaft position sensor with a neat sketch. **4**
- d) Explain electronic control system used in CRDI system. **4**

b) Attempt **any one** of the following :
- a) Draw a neat block diagram and explain open loop control system. **6**
- b) Describe construction and working of fuel pump. **6**

2. Attempt **any four** of the following :
- a) Explain with sketch the use of photodiode and LED in ignition system. **4**
- b) Differentiate between ROM and EPROM. **4**
- c) Describe the use of temperature sensors in Automobiles. **4**
- d) Explain the concept of electronic power steering. **4**
- e) Explain control of ABS system in vehicle. **4**
- f) Describe use of battery testers while checking signals for system diagnosis. **4**

3. Attempt **any four** of the following :
- a) Explain binary number system with the help of suitable example. **4**
- b) Draw and explain CAN bus system used in automobiles and explain in brief. **4**
- c) Describe construction and working of Idle speed actuator. **4**
- d) State types of error and error compensation. **4**
- e) Describe use of oscilloscope while checking signals. **4**

P.T.O.

Marks

4. a) Attempt **any three** of the following :

a) Explain the need of conversion of analog to digital and digital to analog in automobiles. **4**

b) Describe working of oxygen sensor with a neat sketch. **4**

c) Explain how control is operated in GDI system. **4**

d) Describe the procedure of diagnosing MPFI system. **4**

b) Attempt **any one** of the following :

a) Explain the use of power diode in alternator charging system. **6**

b) Explain six step approach for component testing. **6**

5. Attempt **any four** of the following :

a) Explain the working of semiconductor diode as voltage regulator in charging system. **4**

b) Give examples of volatile memory and explain any one. **4**

c) Describe construction and working of EGR valve. **4**

d) State the need and working of air bags as safety system. **4**

e) Explain GPS with the help of a block diagram. **4**

f) State the uses of Lux meter and frequency meter. **4**

6. Attempt **any four** of the following :

a) Distinguish between digital visual display and analog visual display. **4**

b) Describe the use of Bluetooth and GSM communication in Automobiles. **4**

c) Describe the working of an air flow sensor. **4**

d) Explain working of electronic suspension system in vehicle. **4**

e) Explain on board diagnosis of CRDI system. **4**
