Reg. No. | | | | | | | | | |

M.E./M.TECH. DEGREE EXAMINATIONS, MAY/JUNE 2017

SECOND SEMESTER

INTERNAL COMBUSTION ENGINEERING

IC16201-ELECTRONIC ENGINE MANAGEMENT SYSTEMS

(Regulation 2016)

Q. Code: 325210

Time: Three Hours **Maximum : 100 Marks**

Answer **ALL** questions

PART A - (10 X 2 = 20 Marks)

1. What are N-type and P-Type semiconductors?
2. How microcontrollers differ from a microprocessor?
3. Write short note on crankshaft position sensor.
4. Mention the significance of measuring air flow in engine management system.
5. State the advantages of solid state ignition system.
6. What is ignition mapping?
7. Differentiate open loop and closed loop control injection systems.
8. Distinguish L-Jetronic system and D-Jetronic system.
9. What is air injection system in diesel engines?
10. Give the range of injection pressure in CRD1 engines.

PART B - (5 X16 = 80 Marks)

11. (a) Explain the construction and working principle of PNP and NPN transistors. State it drawbacks compared to MOSFET. (16)

(OR)

(b) Explain in detail the construction of Integrated circuits - Analog and Digital with a neat sketch and discuss about its merits and demerits. (16)

12. (a) With suitable sketch explain the construction and working of exhaust oxygen sensor. (16)

(OR)

(b) Explain the types of actuators with suitable sketch and the importance of actuators in engine management system. (16)

13. (a) With the help of neat sketch explain the working principle of solid state ignition system. (16)

(OR)

(b) Write short on the following

(i) Dwell angle & Laser Ignition. (4+4)

(ii) Ignition timing adjustments. (8)

14. (a) Explain the functioning of gasoline direction injection system with neat sketch. (16)

(OR)

(b) (i) Discuss in detail about Idle speed control and knock control in S.I engines. (8)

(ii) State the merits of electronic fuel injection system compared to carburettor systems. (8)

15. (a) Explain operations of different types of diesel injectors with suitable sketches. (16)

(OR)

(b) Explain with a neat diagram the working of electronic unit injector system. (16)