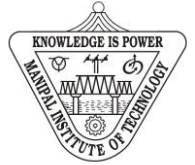


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Manipal Institute of Technology, Manipal

(A Constituent Institute of Manipal University)



VII SEMESTER B.TECH (AUTOMOBILE ENGINEERING)

END SEMESTER EXAMINATIONS, DEC 2015/JAN 2016

SUBJECT: ENGINE MANAGEMENT & NAVIGATION SYSTEM [AAE-455]

REVISED CREDIT SYSTEM

Time: 3 Hours

MAX. MARKS: 50

Instructions to Candidates:

- ❖ Answer **ANY FIVE FULL** the questions.
- ❖ Missing data may be suitable assumed.

- 1A. Define Engine management system. What are its advantages? (02)
- 1B. Discuss the control strategy adapted by Engine management system when (04)
 - (i) The vehicle is accelerating
 - (ii) The Engine knocking
- 1C. Write the assembly programming of addition of 16-bit two numbers. (04)
- 2A. Explain the microcontroller unit with neat diagram. (03)
- 2B. What are fuel maps? How are they built? (03)
- 2C. Explain the working principle of exhaust gas oxygen sensor. (04)
- 3A. Illustrate the salient features of distributor triggered ignition management system. (04)
- 3B. Explain the working of misfire monitor system in OBDII. (03)
- 3C. Explain with neat sketch of network types used in vehicle for data transmission. (03)
- 4A. Explain the ACC with neat diagram. (03)
- 4B. Explain the uninterrupted portable car navigation system. (04)
- 4C. How the automotive sensors are classified? What are their requirements? (03)
- 5A. Explain the working of closed loop control system for the vehicle speed control with a block diagram. (03)
- 5B. Explain the supervised learning processes using neural network. Derive the equation of weight update. (04)

- 5C.** Explain the GIS application in automobile. **(03)**
- 6A.** What are look up tables? List the steps involved in forming the look up tables. **(04)**
- 6B.** Explain the following with neat diagram **(04)**
(i) Loosely coupled scheme and
(ii) Tightly coupled scheme.
- 6C.** Explain the satellite radio reception factors. **(02)**