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MANIPAL INSTITUTE OF TECHNOLOGY
MANIPAL

A Constituent Institution of Manipal University

VII SEMESTER B.TECH. (MECHATRONICS ENGINEERING)

END SEMESTER EXAMINATIONS, DEC 2016

SUBJECT: Autotronics [MME421]

Time: 3 Hours

MAX. MARKS: 50

Instructions to Candidates:

❖ Answer **ANY FIVE FULL** questions.

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| 1A. | Describe with sketch the working of inductive ignition system. | 4 |
| 1B. | Explain with sketch different types of cylinder liners. | 2 |
| 1C. | With a sketch explain the working of cone clutch. | 4 |
| 2A. | Discuss on common rail system. | 2 |
| 2B. | Sketch and explain the working of "Element" used in single cylinder diesel injection pump. | 4 |
| 2C. | Describe with sketch the working of synchromesh gear box. | 4 |
| 3A. | With a sketch describe the electromagnetic voltage regulator. | 4 |
| 3B. | With P-V diagram explain diesel cycle. | 2 |
| 3C. | With suitable sketch, suggest and explain the working of a sensor used to measure the air mass. | 4 |
| 4A. | Explain with sketch the working of standard bendix drive system used in starting of the engine. | 4 |
| 4B. | Write a note on air bag deployment system (with sketch). | 3 |
| 4C. | Discuss on battery voltage variation and electrolyte density. | 3 |
| 5A. | Explain with sketch the function of electronic diesel control system. | 6 |
| 5B. | Write a note on air system and fuel system used in motronic management control system | 4 |
| 6A. | Write a note on gas-discharge lamp. | 3 |
| 6B. | With sketch explain the construction and working of boost pressure actuator control system. | 4 |
| 6C. | With sketch explain the working of electronic carburetor- tapered needle type fuel supply control system. | 3 |