

MANIPAL INSTITUTE OF TECHNOLOGY

V CEMECTER D TECH (AUTOMO

ent Institution of Manipal University

V SEMESTER B.TECH. (AUTOMOBILE ENGINEERING)

END SEMESTER EXAMINATIONS, NOV/DEC 2016

SUBJECT: AUTOTRONICS [AAE 3151]

REVISED CREDIT SYSTEM (27/12/2016)

Time: 3 Hours

MAX. MARKS: 50

Instructions to Candidates:

- ✤ Answer ALL the questions.
- Missing data may be suitable assumed.

1A.	Categorize Sensors based on measurement phenomenon	(02)
1B.	How is inertia starter motor different from pre-engaged starter motors? What are the main advantages of pre-engaged starters over inertia motors?	(03)
1C.	Explain the construction & functioning of Titania Type Lambda Sensor with a neat sketch. State the advantages of this sensor over zirconia type sensor.	(05)
2A.	What are NTC Thermistors? What are the main functions of it?	(02)
2B.	What will the immediate course of action once a knock sensor determines a knock inside combustion chamber? state few disadvantages of conventional knock sensors	(03)
2C.	What is a Potentiometer. Explain the construction and working of it with the aid of neat sketch.	(05)
3A.	What is wiring harshness? Classify them	(02)
3B.	What is FRP Sensor? With the aid of neat sketch explain its working.	(03)
3C.	With the help of neat sketch explain the various types of wiring harshness layouts	(05)
4A.	What are the advantages of MOST Protocol in vehicles? Give an example.	(02)
4B.	What is the importance of Throttle Screw in TPS? Depict the characteristic curves of TPS	(03)

4C.	What is most commonly used communication protocol in automobiles? Classify them and write their applications.	(05)
5A.	What is bus topology? What are the advantages of it?	(02)
5B.	What is snubber circuit, what does it consists of and mention it's function.	(03)
5C.	Explain Advanced Front Lightening System and give its advantages in 4 different driving conditions.	(05)