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**MANIPAL INSTITUTE OF TECHNOLOGY**  
Manipal University, Manipal – 576 104



**DEPARTMENT OF AERONAUTICAL & AUTOMOBILE ENGINEERING**  
**IV SEM. B.TECH DEGREE END SEMESTER EXAMINATIONS MAY 2016**

**SUBJECT: OPEN ELECTIVE: AUTOMOBILE ENGINEERING (AAE-3283)**  
**REVISED CREDIT SYSTEM**

Time: 3 Hours.

MAX.MARKS: 50

**Instructions to Candidates:**

❖ Answer **ALL** the questions.

- 1 A) List the functions of a carburetor. (02)
- 1 B) With the help of a neat sketch, explain idling system in carburetor. (03)
- 1 C) Explain the working of side valve operating mechanism, with the help of a neat diagram and also mention the advantages and disadvantages of the same. (05)
- 2 A) Explain briefly the different types of radiator used in automotive vehicles. (02)
- 2 B) Explain the purposes of lubrication system in an automotive vehicle. (03)
- 2 C) Draw four forward speed Constant Mesh gear box and explain briefly the working principle of the same and also show the power flow path for 1<sup>st</sup> gear and the 3<sup>rd</sup> gear. (05)
- 3 A) List any four necessity of electronic Steering Control System. (02)
- 3 B) Explain the working of worm and worm wheel steering gear box with the help of a neat sketch. (03)
- 3 C) Explain Macpherson strut type front suspension system with the help of a neat diagram and list any four advantages of it. (05)
- 4 A) List any four requirements of a braking system. (02)
- 4 B) Sketch and explain sliding caliper disc braking system. (03)
- 4 C) With a neat sketch, explain the operation of an Anti-lock Braking System and list the advantages and disadvantages of this braking (05)

system.

- 5 A) List any four functions of a tyre. (02)
- 5 B) Explain the desirable properties of the tyre. (03)
- 5 C) Draw the wiring diagram of electronic ignition system and explain, list any four advantages of the same. (05)