

PARUL UNIVERSITY
FACULTY OF ENGINEERING & TECHNOLOGY
M.Tech. Summer 2017-18 Examination

Semester: 2**Subject Code: 03206152****Subject Name: Simulation of IC Engine Processes****Date: 21/05/2018****Time: 02:00pm to 4:30pm****Total Marks: 60****Instructions:**

1. All questions are compulsory.
2. Figures to the right indicate full marks.
3. Make suitable assumptions wherever necessary.
4. Start new question on new page.

Q.1 A) Explain drop drag and deformation (05)

B) Explain Sauter mean diameter. (05)

C) Explain LES and DNS method. (05)

Q.2 Answer the following questions. (Attempt any three) (Each five mark) (15)

A) Explain drop break up regimes

B) Explain Scavenging in two stroke engine.

C) Explain droplet collision and coalescence.

D) Explain packet models.

Q.3 A) Explain the difference between Thermodynamic, phenomenological,CFD model (07)

B) Explain different zones in combustion with neat figure. (08)

OR

B) Derive mechanical work performed by the piston (08)

Q.4 A) Explain Fuel atomization and Droplet evaporation (07)

OR

A) Derive mass flux through the adiabatic nozzle. (07)

B) Derive general conservation equation (08)