Reg.No.					



MANIPAL INSTITUTE OF TECHNOLOGY Manipal University, Manipal – 576 104



V SEM. B.TECH. (MECHANICAL ENGG.) DEGREE END SEM (MAKE UP) EXAMINATIONS DEC 2015/JAN 2016 SUBJECT: ADVANCED MANUFACTURING TECHNIQUES (MME 307) REVISED CREDIT SYSTEM

Time: 3 Hours.

MAX.MARKS: 50

Instructions to Candidates:

✤ Answer ANY FIVE FULL questions.

- **1A)** Distinguish between:
 - I. Thermosets and Thermoplasts
 - II. Extrusion and Injection Moulding. (02)
- **1B)** With suitable figures explain 3-2-1 principle of location (03)
- 1C) How do you build the prototype in Fused Deposition Modelling (FDM)? Explain with a neat sketch. (05)
- 2A) Which plastic forming process is used to manufacture hollow pipes? Explain the process used with a neat schematic (04) representation.
- 2B) Distinguish between Electron Beam Machining (EBM) and Laser (02) Beam Machining (LBM).
- 2C) With a neat circuit diagram explain the compression of pipes using electro-magnetic forming technique. (04)
- 3A) With neat sketch explain the working of the following jigs:- (04)i) Channel jig
 - ii) Angle plate jig
- 3B) List any two types and any two functions of dielectric fluid used in (02)Electro-discharge Machining (EDM).
- **3C)** With a neat diagram explain cold isostatic compaction process. **(04)**
- 4A) With the help of sketches, explain the principle of working of Photo-chemical Machining (PCM). Write a note on the maskants and etchants used in Chemical Machining. (04)

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- 4B) With a neat diagram explain cold isostatic compaction process. (04)
 4C) Compare Electron Beam Machining (EBM) with Laser Beam Machining (LBM) process. List down various process parameters (02) in EBM.
 5A) Distinguish between superfinishing and honing process. (02)
- **5B)** With the help of neat diagrams, explain the Rotational Moulding **(04)**
- **5C)** List the varieties of clamping devices and with suitable figures **(04)** explain the following:
 - i) Screw clamp
 - ii) Strap clamp
- 6) Write short note on:
 - 6A. Laminated Object Manufacturing (LOM).
 - **6B.** Spark Sintering Technique.
 - **6C.** Plasma Arc Machining (PAM).

process used in plastic processing.

(2.5×4=10)

6D. Principles of Jigs and Fixtures.