

MANIPAL INSTITUTE OF TECHNOLOGY MANIPAL

III SEMESTER B.TECH. (MECHANICAL ENGINEERING) END SEMESTER EXAMINATIONS, NOV/DEC 2016

SUBJECT: MANUFACTURING TECHNOLOGY [MME 2105]

REVISED CREDIT SYSTEM (02/12/2016)

Time: 3 Hours

MAX. MARKS: 50

Instructions to Candidates:

- ✤ Answer ALL the questions.
- ✤ Missing data may be suitably assumed.
- **1A.** With a sketch, explain the plastic forming process used to manufacture 3 floatable objects and jars.
- **1B.** With neat sketches, explain the Lost wax casting process suitable for thin 3 castings
- **1C.** With a neat sketch, explain the methodology used to determine the 4 permeability of moulding sand. Also, explain with sketch, how the specimen is prepared.
- **2A.** Which welding process requires a vacuum for getting sound welds? Explain 3 this welding process accompanied by a neat sketch.
- **2B.** With a neat sketch, explain the Corthias process of metal casting. 3
- **2C.** With a neat sketch, explain the following shearing operations: 4
 - a. Blanking
 - b. Lancing
 - c. Perforating
 - d. Shaving
- **3A.** How do you improve or enhance the properties of moulding sand? Explain. 2
- **3B.** Name the welding technique that is most suitable for joining tool steel. 3 Explain the same with a neat sketch.
- **3C.** Write a short note on types of abrasive particles used in grinding wheels.
- **3D.** What are the advantages, limitations, and applications of ultrasonic 2 machining?
- **4A.** Explain with a neat sketch the working of Electrochemical Machining.
- **4B.** Classify different types of drill bits based on material of drill bit, number of 3 flutes and helix angle of the flutes.

3

3

4C.	With the use of suitable indexing methods find the indexing movement for 111, 72 and 8 divisions for three cylindrical workpieces.	4
5A.	With a neat sketch explain the working of shaper.	3
5B.	Explain with neat sketches the significance of lathe rests.	3
5C.	Explain with a neat sketch the working of Abrasive Jet Machining.	4