Reg. No.										

MANIPAL INSTITUTE OF TECHNOLOGY

A Constituent Institute of Manipal University, Manipal

III SEMESTER B.TECH (IP ENGG.) END SEMESTER MAKE-UP EXAMINATIONS, DECEMBER 2017

SUBJECT: MANUFACTURING PROCESS ENGINEERING [MME 2111]

REVISED CREDIT SYSTEM

Time: 3 Hours MAX. MARKS: 50

Instructions to Candidates:

- Answer **ALL** the questions AND Draw neat sketches using pencil only

1A.	With a neat sketch explain air injection type casting process. List its advantages and disadvantages.	**04**
1B.	List and explain four types of sand molding methods.	**03**
1C.	A mild steel bar stock was turned at 30m/min. for which the tool life was 2.1hrs. For the same material, at 25m/min., the tool life was 5.2hrs. Find the values of constants C and n in the Taylor's tool life equation.	**03**
2A.	With a neat sketch explain atomic hydrogen welding process. List its advantages and disadvantages.	**04**
2B.	List nine differences between hot working and cold working.	**03**
2C.	Show that for orthogonal cutting shear plane angle $2\emptyset = \frac{\pi}{2} - (\beta - \gamma)$.	**03**
3A.	With neat sketch explain the welding process which is used only for flat welding applications. List advantages and disadvantages.	**05**
3B.	With neat sketches explain the working principle and facing operation in lathe.	**05**
4A.	With sketch briefly explain the horizontal spindle column and knee type milling machine.	**04**
4B.	Explain indexing and list the different types of indexing.	**03**
4C.	Divide the periphery of the job into 52 divisions using 37, 39, 41,43,47,49 holes from plate 3 of B & S type plate by simple indexing.	**03**
5A.	With neat sketch briefly explain the horizontal shaper.	**03**
5B.	Explain shellac bond and vitrified bond in grinding wheels.	**03**
5C.	With neat sketch explain the selective laser sintering type of rapid prototyping technique.	**04**