Reg. No.										

MANIPAL INSTITUTE OF TECHNOLOGY

MANIPAL

(A constituent unit of MAHE, Manipal)

III SEMESTER B. TECH (INDUSTRIAL AND PRODUCTION ENGG.)

END SEMESTER EXAMINATIONS, NOVEMBER 2018

SUBJECT: MANUFACTURING PROCESS ENGINEERING [MME 2111]

REVISED CREDIT SYSTEM

Time: 3 Hours MAX. MARKS: 50

Instructions to Candidates:

- Answer **ALL** the questions
- Draw neat sketches using pencil only.
- Missing data may be suitably assumed.

1A.	With a neat sketch, explain grain fineness tester.	**03**
1B.	In machining a mild steel workpiece with carbide tool, the life of the tool was found to be 2 hrs and 20 minutes at a spindle speed of 30 m/min. Determine the tool life, if it has to operate at a speed of 20% higher than the initial cutting speed. Also calculate the cutting speed if the tool is required to have a life of 3 hrs. Assume Taylor's exponent, n=0.28.	**03**
1C.	With a neat sketch, explain continuous casting process.	**04**
2A.	List three advantages and disadvantages of explosive welding process.	**03**
2B.	A mild steel workpiece is turned on a lathe with a cutting tool having rake angle of 9^0 and with a cutting speed of 150 m/min. The width of cut and uncut chip thickness are 4 mm and 0.3 mm respectively. Determine shear force and resultant force if the max. shear stress is 375 N/mm^2 and coefficient of friction is 0.4.	**03**
2C.	List and explain any four properties of molding sand.	**02**
2D.	With neat sketches, explain lancing and embossing operation.	**02**
3A.	With a neat sketch, explain the welding process which makes use of refractory sand mold.	**05**
3B.	List out two advantages and disadvantages of rapid prototyping process and with a neat sketch, explain the fused deposition modeling method.	**05**
4A.	With a neat sketch, explain the back gear mechanism in lathe.	**03**
4B.	Enumerate six differences between up milling and down milling	**03**
4C.	List the types of indexing and by compound indexing method divide the periphery of the job into 273 divisions using plate 3 of Brown and Sharp having 37,39,41,43,47,49 holes.	**04**
5A.	With a neat sketch, explain the open and cross belt drive mechanism of a double housing planer.	**04**

5B.	Explain the glazing and loading of grinding wheels.	**02**
5C.	With a neat sketch, explain the constructional features of a centerless grinding machine.	**04**