Reg. No.										

MANIPAL INSTITUTE OF TECHNOLOGY

MANIPAL

(A constituent unit of MAHE, Manipal)

I SEMESTER M. TECH (MANUFACTURING ENGG.) END SEMESTER EXAMINATIONS, NOVEMBER 2018

SUBJECT: ADVANCED MANUFACTURING TECHNOLOGY [MME 5125]

REVISED CREDIT SYSTEM

Time: 3 Hours MAX. MARKS: 50

Instructions to Candidates:

- Answer **ALL** the questions.
- Draw neat sketches (strictly no free hand diagrams)

1**A.**	Deduce the standard equation for Horn design in Ultrasonic Machining.	**4**
1B.	Explain vacuum mould casting and list its advantages.	**3**
1C.	Explain the principle of water jet machining and state its applications	**3**
2A.	Prove that for maximum power generation in relaxation type generator is Vc=0.716Vo, where Vc is charging voltage and Vo is supply voltage.	**4**
2B.	Briefly explain Magnetic Pulse forming and state its applications	**3**
2C.	How does operating parameters affect the machining process in AJM process?	**3**
3A.	What are the industrial needs for unconventional machining processes?	**2**
3B.	What is magnetostrictive effect? Name few magnetostrictive materials	**3**
3C.	Explain the following terminologies related to laser beam machining 1) Peak power 2) pulse width 3) pulse energy 4) pulse repetition rate	**2**
3D	Sketch and explain working principle of electron beam welding	**3**
4A.	Explain the principle of electrochemical machining? Discuss any four tool designs in ECM for effective circulation of fluid.	**5**
4B.	Compare transferred and non-transferred mode of plasma arc machining	**3**
4C.	List any four desired properties and masking materials used in chemical machining	**2**
5A.	What is customization of product? Write a note on issues involved in customization? Also list the suggestion of Leonard and Rayport on product design.	**5**
5B.	Write a note on any four binding mechanisms of powder based 3-D printing process.	**5**