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MANIPAL INSTITUTE OF TECHNOLOGY
MANIPAL

A Constituent Institution of Manipal University

**I SEMESTER M.TECH. MANUFACTURING ENGINEERING AND
 TECHNOLOGY (MET)**

END SEMESTER EXAMINATIONS, NOV/DEC 2016

SUBJECT: Advanced manufacturing Technology (MME 5125)

**REVISED CREDIT SYSTEM
 (01/12/2016)**

Time: 3 Hours

MAX. MARKS: 50

Instructions to Candidates:

- ❖ Answer **ALL** the questions.
- ❖ Missing data may be suitable assumed.

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| 1A. | Derive an expression for metal removal in Ultra-sonic Machining for brittle material. | 5 |
| 1B. | Briefly explain water jet machining. | 3 |
| 1C. | List the applications of Abrasive Jet Machining. | 2 |
| 2A. | Derive an equation for charging current, charging voltage, charging duration, discharge current, discharge voltage, discharge duration and energy dissipated across the gap in RC-type power generator in EDM. | 5 |
| 2B. | Bring out the differences between EBM and LBM. | 2 |
| 2C. | Derive an expression for Dynamics of Electro chemical Machining | 3 |
| 3A. | Sketch and explain plasma arc machining. | 4 |
| 3B. | Compare ECG with conventional grinding. | 3 |
| 3C. | Explain photo chemical machining in detail. | 3 |
| 4A. | Explain vacuum mould casting with a neat sketch. | 4 |
| 4B. | Explain Explosive Forming with neat sketches. | 4 |
| 4C. | Briefly explain Stretch forming and Contour roll forming. | 2 |
| 5A. | What is meant by RP technology? Explain any one type in detail. | 4 |
| 5B. | Explain Classification of Rapid Manufacturing Processes. | 3 |
| 5C. | Explain a Data format for an additive manufacturing process. | 3 |