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Manipal Institute of Technology, Manipal

(A Constituent Institute of Manipal University)



III SEMESTER B.TECH (INDUSTRIAL & PRODUCTION ENGINEERING) END SEMESTER EXAMINATIONS, NOV/DEC 2015

SUBJECT: MANUFACTURING PROCESS ENGINEERING [MME 2111]

REVISED CREDIT SYSTEM
(01/12/2015)

Time: 3 Hours

MAX. MARKS: 50

Instructions to Candidates:

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

- 1A. With the neat sketch explain the back gear mechanism in lathe. (04)
- 1B. Explain tool life and list the parameters affecting the life of a tool. (03)
- 1C. Calculate the time required for drilling 25mm hole on a 65mm thick component with a cutting speed of 8m/min and feed of 0.2mm/rev. Estimate the time saved if the cutting speed is increased by 60%. Neglect the length of approach for the entire drilling process. (03)
- 2A. Index periphery of the work piece into 273 divisions. Use standard index plate 3 having 37, 39, 41, 43, 47 & 49 holes. (04)
- 2B. Explain the working principle of a shaper with relevant sketches. (03)
- 2C. With a neat sketch explain working of a double housing planer. (03)
- 3A. List the types of surface grinders. With sketch explain the vertical spindle grinding machine with reciprocating table. (05)
- 3B. With the neat sketch explain the working principle of Fused deposition modeling rapid prototyping method. (03)
- 3C. Briefly explain the different methods to overcome the spring back effect in sheet metal operation. (02)

- 4A.** With the neat sketch explain the goose neck type pressure die casting process. **(04)**
- 4B.** With the neat sketch explain the welding method where exothermic chemical reaction is used to bring the edges to be joined to the required temperature. **(04)**
- 4C.** What are the specific advantages of match plate patterns? Explain how they are used for making moulds. **(02)**
- 5A.** With the neat sketch briefly explain the following sheet metal operations **(04)**
- Perforating
 - Roll bending
 - Notching
 - Shaving
- 5B.** With the neat sketch explain the lost wax casting process and mention the dis-advantages of the process. **(04)**
- 5C.** Give the comparison between dry sand moulds and skin dried moulds. **(02)**