

Total No. of Questions : 10] [Total No. of Printed Pages : 3

Roll No.

302(GS)/303(NGS)

B. E. (Third Semester) EXAMINATION, Dec., 2011

(Grading/Non-Grading System)

(Common for AU, IP/IEM & ME Engg.)

PRODUCTION PROCESS

Time : Three Hours

Maximum Marks : $\begin{cases} 100 \text{ (Non-Grading)} \\ 70 \text{ (Grading)} \end{cases}$

Note : Attempt *one* question from each Unit. All questions carry equal marks.

Unit – I

1. (a) Explain what is meant by the grade of slip gauges. What grade of slip gauge will you employ for checking the accuracy of a plug gauge ?
- (b) Discuss the merits and demerits of the following types of comparators :
 - (i) Mechanical
 - (ii) Optical.

Or

2. Steel strip 200 mm wide is to be cold rolled from initial thickness of 3 mm to 2.5 mm in single pass. The roll speed is 30 m/min. and roll radius is 250 mm, there is no front and back tensions. Calculate the roll separating force and power required. Assume $\mu = 0.1$ and yield stress of steel = 40 kgf/mm².

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Unit – II

3. (a) Enlist the salient features of various types of single point tools used in the machining of metals.
- (b) Differentiate between orthogonal and oblique cutting methods.

Or

4. (a) Define the terms machinability and tool life.
- (b) A carbide cutting tool lasted for 2 hours while machining mild steel work material at 45 m/min. Compute the tool life if a similar tool is used for machining mild steel at 20% higher speed. Also, what will be the value of cutting speed if the tool is required to machine for 3 hours without failing. Assume that $n = 0.27$.

Unit – III

5. (a) Explain the function of a pattern. What are the common allowances provided on patterns ?
- (b) Sketch a common gating system Label it and explain the function of its various elements.

Or

6. (a) Explain with the help of neat sketches, the construction and working of cupola furnace.
- (b) What is continuous casting process ? What are its uses, merits and demerits ?

Unit – IV

7. (a) Define forging. What are the advantages of the forging of metals ?
- (b) Give the classification of forging operations.

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Or

8. (a) What do you understand by the term 'Press tool' ?
- (b) Differentiate between bending, forming and drawing. Classify the dies used in each.

Unit – V

9. (a) Define weldability of metals. Explain briefly the procedure of a manual arc welding process.
- (b) What are the typical electrode materials used in tungsten inert gas welding ?

Or

10. (a) Explain the process of MIG and TIG welding. Give their advantages and limitations.
- (b) Compare A. C. and D. C. arc welding machines giving the advantages of each.