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P.E.S. College of Engineering, Mandya - 571 401

(An Autonomous Institution affiliated to VTU, Belgaum)

Fifth Semester, B.E. - Mechanical Engineering

Semester End Examination; Dec. - 2015

Manufacturing Process - III

Time: 3 hrs *Max. Marks: 100*

***Note**: Answer **FIVE** full questions, selecting **ONE** full question from each **unit**.*

UNIT - I

1 a. With a neat sketch explain the classification of metal working process on the basis of force applied. 10

b. Explain the effect of the following on metal working process:

i) Temperature 10

ii) Hydrostatic pressure

2 a. Compare Tresca and Von miscs yield criteria. 10

b. Distinguish between wrought products and cast products. 10

UNIT - II

3 a. Discuss with relevant sketches the various forging design parameters. 10

b. With neat sketches explain the defects in rolled products. 10

4 a. Describe the effect of front and back tension on rolling load. 7

b. Explain planetary rolling mill with a neat sketch. 7

c. Write a note on flow lines in forging. 6

UNIT - III

5 a. Explain with neat sketch impact extrusion process. 8

b. What are the variables associated with extrusion process? Explain any three of them. 12

6 a. Write a note on estimation of redundant work in drawing. 8

b. Explain optimal cone angle and dead zone formation in drawing. 8

c. List any four defects in extrusion process. 4

UNIT - IV

7 a. Sketch and explain:

i) Progressive die ii) Rubber forming 10

b. What is limiting drawing ratio? Explain any four defects in deep drawing process. 10

8 a. Explain any two punch and die design parameters in deep drawing. 4

b. Sketch and explain:

i) Compound die ii) Stretch forming 10

c. Write a note on forming limit criterion. 6

Contd... 2

UNIT - V

9	a.	Explain briefly, the basic steps of powder metallurgy with a flow chart.	10
	b.	Mention by five applications of powder metallurgy.	5
	c.	Explain types of plastics.	5
10	a.	Sketch and explain any two methods of powder production.	10
	b.	List the advantages and disadvantages of powder metallurgy.	5
	c.	Explain health and safety issues for plastics and ceramics manufacturing environment.	5

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