Third Semester B.E. Degree Examination, June/July 2013
Manufacturing Processes

Time: 3 hrs.   Max. Marks:100

Note: *Answer FIVE full questions, selecting*
at least TWO questions from each part.

PART – A

1	a.	What is manufacturing process?	(04 Marks)
	b.	Explain different pattern.	(06 Marks)
	c.	What are pattern allowances? Explain.	(05 Marks)
	d.	With example differentiate, between additives and binders.	(05 Marks)

2	a.	Write a note on ingredients of sand mold.	(04 Marks)
	b.	Differentiate between pressurized and non pressurized gating system.	(08 Marks)
	c.	What are the requirements of a core sand?	(04 Marks)
	d.	Briefly explain the causes and remedies for casting defect.	(04 Marks)

3	a.	Differentiate between 'Talt type' and 'Squeeze type' molding machine.	(06 Marks)
	b.	Briefly explain : i) CO_2 molding ii) Shell molding.	(08 Marks)
	c.	What is 'Continous casting'?	(06 Marks)

4	a.	What is welding? List out different welding processes.	(04 Marks)
	b.	Enumerate 'Oxy-Acetylene' welding.	(04 Marks)
	c.	Write a note on flame characteristics.	(06 Marks)
	d.	Differentiate between TIG and MIG welding process.	(06 Marks)

PART – B

5	a.	What are 'Soldering and Brazing'? How do they differ from welding?	(06 Marks)
	b.	Briefly explain : i) Magnetic particles inspection ii) Flourscent particle inspection.	(08 Marks)
	c.	Write a short note on: i) Ultrasonic inspection ii) X-ray radiography test.	(06 Marks)

6	a.	What is the influence of geometry of a cutting tool on machining?	(06 Marks)
	b.	During maching of C-25 steel with 0-10-6-6-8-90-1 mm (ORS) shaped frigid carbide cutting tool following observation were made. Depth of cut = 2 mm; Speed = 200 m/min Feed = 0.2 mm/revln ; Thrust force = 850 N, Tangential cutting forces = 1600 N; Chip thickness = 0.39 mm Calculate i) Shear force ii) Frictional forces.	(04 Marks)
	c.	Enumerate the cutting parameter on tool life.	(06 Marks)

d. An aluminium component 90 mm long and 60 mm dia a machined with a depth of cut of 1.25 mm. Using following data determine speed that minimizes the cost and calculate corresponding tool life:
- Labour + over head cost = Rs. 20/Hr
- Regrinding cost of tool = Rs.1 / edge
- Tool changing time = 6 min
- Load and unloading time of job = 20 sec.
- Feed = 0.2 mm/revolution
- C = 300
- η = 0.25   (04 Marks)

7 a. What are the basic requirements of a cutting tool material?   (04 Marks)
   b. Write a note on derived properties and selection of a cutting fluid.   (06 Marks)
   c. Briefly explain any two methods to measure tool tip temperature.   (10 Marks)

8 a. Explain the need for non-traditional machining process.   (04 Marks)
   b. Explain 'Electro chemical machining'.   (08 Marks)
   c. Write a note on parameter affecting Abrasive jet machining.   (08 Marks)

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