Code No: RT22033 **R13** SET - 1

II B. Tech II Semester Regular Examinations, May/June - 2015
PRODUCTION TECHNOLOGY
(Comm. to ME,AME)

Time: 3 hours Max. Marks: 70

Note: 1. Question Paper consists of two parts (**Part-A** and **Part-B)**
2. Answer **ALL** the question in **Part-A**
3. Answer any **THREE** Questions from **Part-B**

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PART –A

1	a)	List of different types of pattern used for casting?	(3M)
	b)	What is the function of risers in casting?	(4M)
	c)	Classify the welding processes?	(4M)
	d)	Define the term weldability with example?	(4M)
	e)	Explain hot working process?	(4M)
	f)	Define the process of blanking with a neat sketch?	(3M)

PART -B

2	a)	Give in detail the flow chart followed in preparation of sand casting?	(8M)
	b)	Define gating ratio? Illustrate the steps involved in designing a gating system?	(8M)
3	a)	Define freezing ratio. Calculate the pouring time required for complete filling of mould?	(8M)
	b)	Calculate the size of a cylindrical riser(height and diameter equal) necessary to feed a steel slab casting 25 x 25 x 5cm with a side riser, casting poured horizontally in the mould. Use caine's equation and take constants a=0.1, b=0.03, c=1.0	(8M)
4	a)	Define welding. What are different welding joints and their characteristics?	(8M)
	b)	List out the advantages, limitations and applications of welding?	(8M)
5	a)	With neat sketch explain explosive welding and electron beam welding.	(8M)
	b)	What are the destructive and nondestructive methods of testing the welded joints with examples?	(8M)
6	a)	Explain briefly the mechanism of plastic deformation in metals and alloys?	(8M)
	b)	Derive the expression for power required in rolling process.	(8M)
7	a)	What are the various ways in which presses can be classified? Explain one press work in detail.	(8M)
	b)	What are thermoplastics? Explain with neat sketch injection molding process.	(8M)
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2. Answer **ALL** the question in **Part-A**
3. Answer any **THREE** Questions from **Part-B**

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PART –A

1	a)	List out advantages of casting and its applications.	(3M)
	b)	Illustrate with example the functioning of chaplets in casting process.	(4M)
	c)	What are the different types of welding joints?	(4M)
	d)	Define HAZ in welding.	(4M)
	e)	Explain cold working process.	(4M)
	f)	Explain the process of bending.	(3M)

PART -B

2	a)	What are the steps involved in sand casting? What are different types of pattern allowances?	(8M)
	b)	Explain the principle of gating. Design a best gating ratio required for better casting.	(8M)
3	a)	Illustrate different methods of melting the materials.	(8M)
	b)	Calculate the sizes of riser for casting steel bar of 75 x 12.5 x 12.5cm with top riser placed at the center of the bar. Use modulus method	(8M)
4	a)	Distinguish gas welding and gas cutting. Illustrate with few examples.	(8M)
	b)	List out the advantages, limitations and applications of welding.	(8M)
5	a)	With neat sketch explain thermit welding and plasma welding.	(8M)
	b)	Explain the causes of welding defects and their remedies with neat sketch.	(8M)
6	a)	Define the term recrystallization. State its significance in metal forming.	(8M)
	b)	Define the process of extrusion and its characteristics with sketch and explain impact extrusion.	(8M)
7	a)	Explain briefly various press working operations.	(8M)
	b)	What are thermosetting plastics? What are different types of compression processes, explain any one with neat sketch?	(8M)
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Code No: RT22033 **R13** SET - 3

II B. Tech II Semester Regular Examinations, May/June - 2015
PRODUCTION TECHNOLOGY
(Comm. to ME,AME)

Time: 3 hours Max. Marks: 70

Note: 1. Question Paper consists of two parts (**Part-A** and **Part-B)**
2. Answer **ALL** the question in **Part-A**
3. Answer any **THREE** Questions from **Part-B**

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PART –A

1	a)	List out materials used for pattern making.	(3M)
	b)	Illustrate with example the functioning of core prints in casting process.	(4M)
	c)	What are different types of flames?	(4M)
	d)	What are the defects in welding?	(4M)
	e)	Explain extrusion process?	(4M)
	f)	Define the process of coining?	(3M)

PART -B

2	a)	How many types of patterns are there? Explain them with neat sketches.	(8M)
	b)	Define gating ratio? Illustrate the steps involved in designing a gating system.	(8M)
3	a)	With neat sketch explain the principle and working of cupola furnace.	(8M)
	b)	Illustrate with example the solidification process of pure metals and alloys.	(8M)
4	a)	Describe in detail all the types of arc welding with figures.	(8M)
	b)	List out the advantages, limitations and applications of welding.	(8M)
5	a)	Explain different types of resistant welding. Explain with neat sketch any one type.	(8M)
	b)	What are the destructive and nondestructive methods of testing the welded joints with examples?	(8M)
6	a)	Distinguish between hot working and cold working processes with suitable examples and figures.	(8M)
	b)	What is meant by bulk deformation? Explain different types of forgings with neat sketches.	(8M)
7	a)	Derive an expression for forces and power required for piercing process.	(8M)
	b)	List different types of Plastics, and processing methods of plastics.	(8M)
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Code No: RT22033 **R13** SET - 4

II B. Tech II Semester Regular Examinations, May/June - 2015
PRODUCTION TECHNOLOGY
(Comm. to ME,AME)

Time: 3 hours Max. Marks: 70

Note: 1. Question Paper consists of two parts (**Part-A** and **Part-B)**
2. Answer **ALL** the question in **Part-A**
3. Answer any **THREE** Questions from **Part-B**

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PART –A

1	a)	What is sand casting? List out its applications.	(3M)
	b)	Illustrate the colour codes for patterns in casting process.	(4M)
	c)	Which of the flame is efficient while cutting of hard metals and why?	(4M)
	d)	Define soldering and brazing.	(4M)
	e)	Explain the process of deep drawing.	(4M)
	f)	Define the process of spinning with neat sketch.	(3M)

PART -B

2	a)	Explain the pattern allowance and their construction.	(8M)
	b)	Explain in detail the defects of casting?	(8M)
3	a)	With neat sketch explain the principle and working of crucible furnace and pit furnace.	(8M)
	b)	Discuss the casting defects which are attributed to the quality of sand. Explain the remedial measures.	(8M)
4	a)	Describe various welding positions with neat sketch and explain a practical phenomenon using those positions.	(8M)
	b)	List out the advantages, limitations and applications of welding.	(8M)
5	a)	What is solid state welding? What are different types of solid state welding explain one with neat sketch?	(8M)
	b)	Explain the causes of welding defects and their remedies with neat sketch.	(8M)
6	a)	State the advantages and limitations of Hot working and cold working processes and explain the HAZ in both the processes?	(8M)
	b)	What is compaction and sintering? Give advantages and its applications.	(8M)
7	a)	Derive an expression for forces and power required for blanking process.	(8M)
	b)	List different types of Plastics. Explain their properties and applications.	(8M)
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