Reg No.:_____ Name:_____

APJ ABDUL KALAM TECHNOLOGICAL UNIVERSITY

FOURTH/FIFTH SEMESTER B.TECH DEGREE EXAMINATION, APRIL 2018

Course Code: ME220

Course Name: MANUFACTURING TECHNOLOGY

Max. Marks: 100 Duration: 3 Hours

PART A

Answer any three full questions, each carries 10 marks.

Marks

1	a)	Write two advantages and disadvantages of sand casting.	(2)
	b)	List the types of patterns and pattern materials.	(4)
	c)	What is a core? Write any two functions and requirements of a core.	(4)
2	a)	List the sand testing methods.	(2)
	b)	With the aid of sketches write short note on the following i)Two High Mill ii) Three High Mill iii) Four High Mill	(4)
	c)	What is the function of gates in casting? Write short notes on the types of Gates?	(4)
3	a)	What do you mean by recrystallization temperature?	(2)
	b)	Define the terms i) Draft ii) Neutral point iii) Angle of Bite	(4)
	c)	Write notes on the Hot chamber pressure die-casting process	(4)
4	a)	What are the methods used to reduce the roll force requirement in rolling process?	(3)
	b)	$\mu \geq \text{Tan}(\alpha)$. Where μ= coefficient of friction, α= angle of bite or angle of contact. From the above statement write down the roll bite conditions in rolling.	(4)
	c)	Write short notes on Hot and Cold Rolling process.	(4)

PART B

Answer any three full questions, each carries 10 marks.

5	a)	With the aid of a simple sketch explain about open die forging.	(3)
	b)	Write short notes son the following forging methods. i)Upsetting ii) Fullering iii) Edging	(3)
	c)	With the aid of a sketch list the terminology for a forging die.	(4)
6	a)	List the Extrusion Defects.	(2)
	b)	List the forging defects? Write short note on any two forging defects.	(4)
	c)	Write short note on Degree of Freedom. Draw a sketch showing the 12 degrees of freedom.	(4)
7	a)	What is a clamp?	(2)
	b)	Differentiate between Hot and Cold Extrusion.	(4)
	c)	Write short notes on the following locating methods i) Locating from circular surfaces. ii) Concentric locating	(4)
8	a)	Vacuum Clamping	(3)
	b)	Write notes on Hinge Clamping.	(3)
	c)	Write down the principles of clamping.	(4)

PART C

Answer any four full questions, each carries 10 marks.

9	a)	What is Bending? Write short notes on Bend allowance and Bend Deduction	(3)
	b)	Write short notes on the following terms: i) Bend axis ii) Flat length iii) Bend length	(3)
	c)	Explain about Press-brake forming	(4)
10	a)	What do you mean by the term Bendability?	(2)
	b)	Write notes on Shear spinning process.	(4)
	c)	Write notes on rubber forming process.	(4)
11	a)	Define the term Weldability.	(2)
	b)	Write short notes on the following weld defects i) Cracks ii) Distortion iii) Lack of penetration.	(4)
	c)	What do you mean by HAZ? Write short notes on the regions of HAZ.	(4)
12	a)	Write short notes on Gas welding. Write any three advantages, dis advantages and application of gas welding.	(5)
	b)	Write notes on the following i) Consumable Electrodes ii) Non-consumable Electrodes	(5)
13	a)	Explain how Plasma arc Welding is carried out.	(5)
	b)	Explain how Gas Tungsten Arc welding is carried out. Write any two advantages of Gas Tungsten Arc welding.	(5)
14	a)	Explain the following types of welding process: i) Stud Welding ii) Percussion welding	(5)
	b)	Write notes on the following i) Torch Brazing ii) Vacuum Brazing	(5)

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