



JK LAKSHMIPAT UNIVERSITY, JAIPUR

INSTITUTE OF ENGINEERING AND TECHNOLOGY

End Term Examination (Regular), April 2015
B. Tech in Mechanical Engineering, Semester IV

Roll No.....

COURSE CODE: ME-405(Casting, welding & forming)

Time: 3 hours

Max. Marks: 100

Instructions to students:

1. Do not write anything other than your roll number on question paper.
2. Assume suitable data wherever required and mention it clearly.
3. Writing appropriate units, nomenclature, and drawing neat sketches/schematics/ flow chart wherever, required are an integral part of the answer.

Q.1	Multiple choice questions (10 questions @ 1 mark)	10
	Q1. Which of the following has the highest sintering temperature? (a) Copper (b) Iron (c) tungsten (d) stainless steel	
	Q2. Which of the following joining methods does not use filler metal? (a) gas welding (b) Arc welding (c) resistance (d) soldering	
	Q3 Redrawing is used to : (a) Obtain more reduction in diameters of rods and tubes (b) increase length of rods and tubes (c) increase in depth of drawn cup (d) Increase in diameter of drawn cup.	
	Q5. A Wax pattern is used in (a) investment casting (b) shell mould casting (c) centrifugal casting (d) Die casting	
	Q6. The typical values of coefficient of friction for cold and hot operations are respectively (a) 0.2 and 0.3 (b) 0.1 and 0.3 (c) 0.1 and 0.4 (d) 0.2 and 0.4	
	Q7. Chaplet is used to	
	Q8. Soldering and brazing are examples of (a) autogeneous joining (b) homogeneous joining (c) heterogeneous joining (d) plastic joining	
	Q9. MIG uses consumable electrode(true or false)	
	Q10. Infiltration is used to	
Q.2	Explain the following and their relation if any (4 questions @ 2.5 marks)	10
	(a) Explain the compacting process.	



- (b) Why is more force required in direct than indirect extrusion
(c) What is difference between banking and punching?
(d) Define Green and dry sand with composition.

Q.3A	Explain MIG welding its diagram with advantages and disadvantages.	05
Q.3B	Explain friction welding with diagram. And its applications.	05
Q.4A	Differentiate between hot and cold working process.	05
Q.4B	Differentiate between open die forging and closed die forging.	05
Q.5A	Explain spot welding process with diagram and applications	05
Q.5B	Explain different types of pattern allowances with diagram.	05
Q.6A	Differentiate between Direct and Indirect extrusion.	05
Q.6B	Explain shell mould casting with advantages and disadvantages.	05
Q.7A	Explain brazing process its advantages and disadvantages.	05
Q.7B	Explain centrifugal casting with diagram	05
OR		
Q.7B	What is sintering in powder metallurgy and advantages and disadvantages of powder metallurgy?	05
Q.8A	Explain properties of moulding sand. With diagram	10
Q.9A	Explain the deep drawing process with diagram. A cup of 40mm diameter and 10mm height is to be produced by drawing from a 1.5mm thick sheet metal. Find the blank diameter and the maximum drawing force. Assume ultimate strength of the sheet metal to be 500MN.	10
Q.9B	Elaborate the rolling operation its mathematical relations	10
OR		
Q.9B	Elaborate slush casting its type's advantages and disadvantages. With diagram.	10