Seat No.: _____ Enrolment No._____

GUJARAT TECHNOLOGICAL UNIVERSITY

BE – SEMESTER – VI (NEW).EXAMINATION – WINTER 2016

Subject Code: 2162103 **Date: 22/10/2016**

Subject Name: Powder Metallurgy

Time: 10:30 AM to 01:00 PM **Total Marks: 70**

Instructions:

1. **Attempt all questions.**
2. **Make suitable assumptions wherever necessary.**
3. **Figures to the right indicate full marks.**

			MARKS
Q.1		**Short Questions**	**14**
	1	A part produced by Powder metallurgy is termed as _____	
	2	_____method is used to make powder for brittle metals?	
	3	Which method is used to make powder of metals having low melting point?	
	4	Which of tool is manufactured by powder metallurgy?	
	5	Sintering increases _____	
	6	Density in sintering product is improved by _____	
	7	The process of infiltration in sintered products is to improve _____	
	8	The process producing a relatively coarse powder with a high percentage of oxide is _____	
	9	In atomization _____	
	10	Gives Sequence process carried out in powder metallurgy.	
	11	The sintering temperature is _____	
	12	What is true density?	
	13	What is Bulk density?	
	14	What is angle of repose?	
Q.2	**(a)**	What is Powder Metallurgy?	**03**
	(b)	With a flow sheet explain briefly basic Powder metallurgy process steps.	**04**
	(c)	Write the advantages, limitations and applications of powder metallurgy.	**07**

OR

	(c)	Discuss various steps of powder rolling. Give the advantages and disadvantages of Powder rolling.	**07**
Q.3	**(a)**	Define and explain Apparent density	**03**
	(b)	What is atomization?	**04**
	(c)	List atomization techniques. With neat sketch Explain water atomization technique.	**07**

OR

Q.3	**(a)**	What is sintering?	**03**
	(b)	Discuss the mechanism of sintering.	**04**
	(c)	Write short note on powder extrusion technique.	**07**
Q.4	**(a)**	What do you mean by metallic filters?	**03**
	(b)	How metallic filters are produced by powder metallurgy. Mention their applications.	**04**
	(c)	Explain production of carbide tools by powder metallurgy.	**07**

OR

Q.4	**(a)**	Discuss about powder forging method.	**03**
	(b)	Give the advantages and limitations of Powder Forgoing.	**04**
	(c)	Write a note on alloy powder production methods.	**07**
Q.5	**(a)**	Define and explain Flow rate	**03**
	(b)	What do you mean by electrical contact materials?	**04**
	(c)	How self-lubricated bearings are produced by powder metallurgy Technique?	**07**

OR

Q.5	**(a)**	Define and explain Tap density	**03**
	(b)	Describe the role of lubricants in compaction processes?	**04**
	(c)	Discuss critically the factors to be considered for die design.	**07**

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