GUJARAT TECHNOLOGICAL UNIVERSITY
BE - SEMESTER–III(New) EXAMINATION – SUMMER 2016

Subject Code:2131903   **Date:31/05/2016**
Subject Name:Manufacturing Process-1
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	Define lip angle.	
	2	Identify the following tool signature 8-12-6-6-6-10-1 in ASA system.	
	3	Define Tool life.	
	4	Explain Steady rest and Follower rest.	
	5	What is the function of Face Plate?	
	6	Define the following terms: (i)Reaming (ii) Counter-boring	
	7	List out various operations which can be performed on Shaper machine.	
	8	With the help of sketch only indicate drive motion and feed motion for shaper and planer m/c.	
	9	Write different applications of broaching.	
	10	Explain primary cutting motion for lathe machine with neat sketch.	
	11	Explain the meaning of grinding wheel signature: 26-C-60-M-7-V-28.	
	12	State the limitations of the taper turning attachment in lathe.	
	13	Define the function of Feed rod and lead screw.	
	14	Explain the requirement of Angle plate in lathe machine.	

Q.2	**(a)**	List the alignment tests to be carried out on the milling machine.	**03**
	(b)	Explain the classification of machine tools.	**04**
	(c)	Explain twist drill nomenclature with neat sketch.	**07**
		OR	
	(c)	List out various operations carried out on drilling machine. Explain any four.	**07**

Q.3	**(a)**	Explain basic elements of machining.	**03**
	(b)	Explain various factors which are affecting tool life.	**04**
	(c)	Explain primary and auxiliary motions with reference to machine tool.	**07**
		OR	
Q.3	**(a)**	Explain single point cutting tool geometry.	**03**
	(b)	Compare orthogonal and oblique cutting.	**04**
	(c)	Define a Basic Machine Tool. Classify them What are the general requirements of machine tools?	**07**

Q.4	**(a)**	Calculate the tailstock set-over for turning a taper on a job whose diameters are 80 mm and 60 mm. The length of the job is 350 mm and the length of the tapered portion is 250 mm.	**03**
	(b)	Write a short note on: "Apron mechanism"	**04**

| | **(c)** | Discuss with sketch characteristics of conventional Up and Climb milling. | **07** |

<div align="center">**OR**</div>

Q.4	**(a)**	Determine the cutting speed in machining a workpiece of 200 mm diameter rotating at a speed of 100 rpm. Also calculate machining time if workpiece length is 0.5 m and feed is 0.45 mm/rev.	**03**
	(b)	Give the differences between gang drilling and multiple drilling machine.	**04**
	(c)	How grinding wheel is specified? Explain in details.	**07**

Q.5	**(a)**	Give merits and demerits of Planer.	**03**
	(b)	Explain jig boring machine	**04**
	(c)	What is Tool Signature and Tool Geometry? Explain importance of tool angles for single point cutting tool in brief	**07**

<div align="center">**OR**</div>

Q.5	**(a)**	Explain the effect of unequal lips in twist drill.	**03**
	(b)	List out various milling machine operations and explain any two.	**04**
	(c)	Explain crank and slotted link quick return mechanism in shaper.	**07**

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