

Seat No.: _____

Enrolment No. _____

GUJARAT TECHNOLOGICAL UNIVERSITY

BE - SEMESTER-III (NEW) EXAMINATION – WINTER 2017

Subject Code: 2131903

Date: 14/11/2017

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	(a) Differentiate between orthogonal and oblique cutting.	03
	(b) Describe working and auxiliary motions in machines.	04
	(c) State the desirable properties of cutting fluids. Derive the expressions for shear angle and chip thickness ratio.	07
Q.2	(a) State the functions of live centre and dead centre in a lathe.	03
	(b) Explain the function of a thread chaser in lathe operation.	04
	(c) Explain why a lathe bed is made from cast iron. Explain the lathe bed with a neat sketch.	07
	OR	
	(c) Explain the working of a nine geared head stock with a neat sketch. Compare belt driven and all geared head stocks.	07
Q.3	(a) Name the parts of an engine lathe. Name the accessories used on a lathe.	03
	(b) Explain the working principle of a jig boring machine.	04
	(c) Explain the alignment test carried out on a drilling machine. Explain what is deep hole drilling.	07
	OR	
Q.3	(a) What tests are carried out to check the alignment of a lathe?	03
	(b) Explain the various operations carried out on a vertical boring machine.	04
	(c) Explain the specifications of a radial drilling machine with a neat sketch. Explain the difference between drilling and boring.	07
Q.4	(a) Classify milling machines.	03
	(b) Draw a neat sketch of a plain milling cutter and label its various elements.	04

	(c)	Explain side milling and angular milling operations with neat sketches.	07
		OR	
Q.4	(a)	Name the devices used for holding and driving various cutters on a milling machine.	03
	(b)	Draw a neat sketch of a knee and arbor type milling machine and label its parts.	04
	(c)	Explain gang milling and straddle milling operations with neat sketches.	07
Q.5	(a)	Explain the working principle of a slotting machine with a neat sketch.	03
	(b)	Compare shaper and planer.	04
	(c)	Draw a neat sketch of a planer and label its various parts.	07
		OR	
Q.5	(a)	Explain truing and dressing of grinding wheels.	03
	(b)	Explain grinding wheel designation system.	04
	(c)	Explain the working principle of a quick return motion mechanism of a shaper with a neat sketch.	07