Seat No.: _____ **Enrolment No._____**

GUJARAT TECHNOLOGICAL UNIVERSITY

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

Subject Code: 2133405 **Date: 09/06/2017**

Subject Name: Manufacturing and Assembly Drawing

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.**

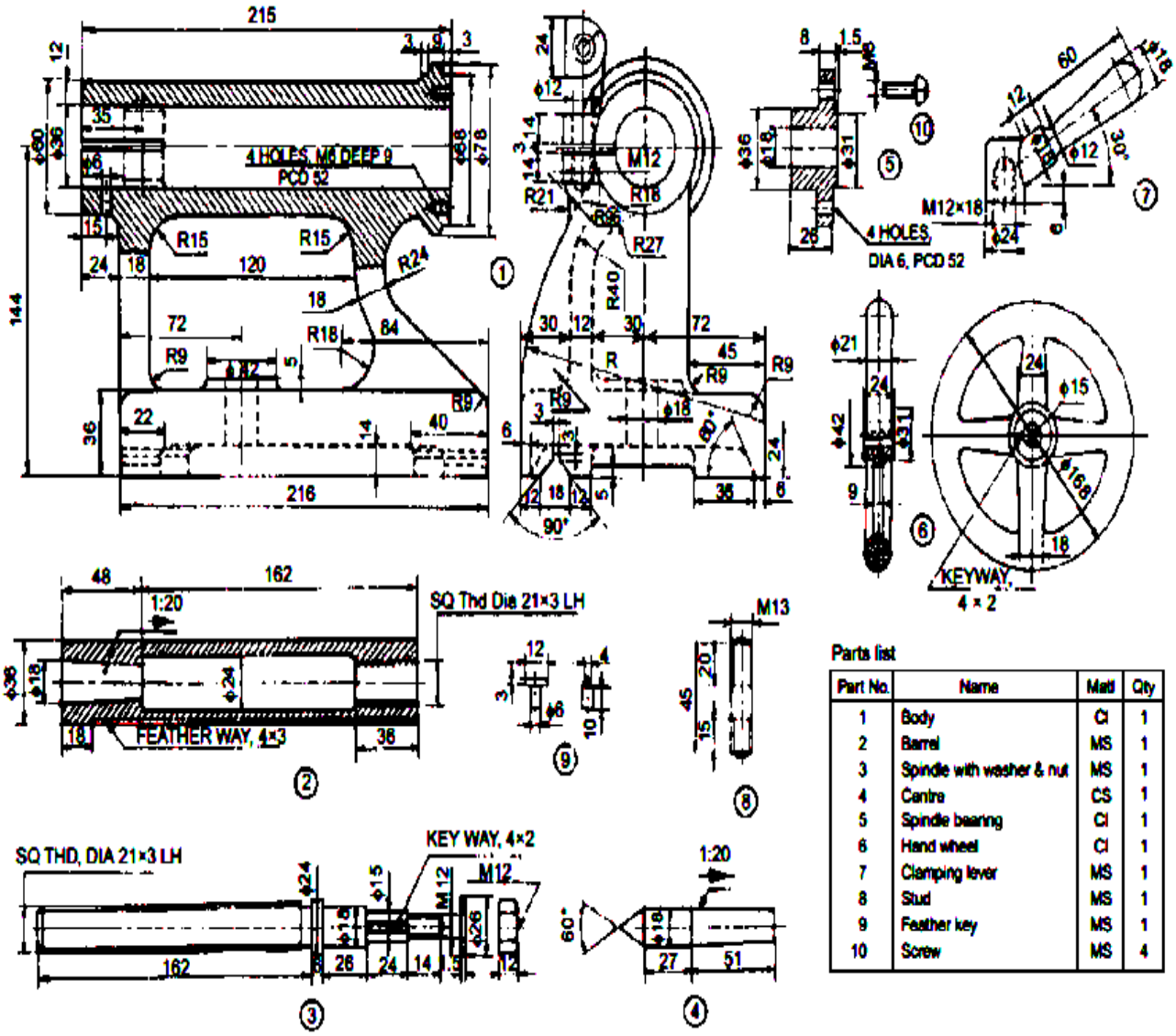
			MARKS
Q.1		**Short Questions**	**14**
	1	What is the use of Riveting?	
	2	Define Tolerances.	
	3	Draw the symbol for Straightness _____	
	4	Write three non-ferrous material name.	
	5	Draw the symbol of a Profile of Surface _____	
	6	Draw the symbol of Square Butt weld _____	
	7	Draw the conventional for Leaf spring _____	
	8	Draw the conventional for Bevel Gear _____	
	9	Draw the symbol for Fillet weld _____	
	10	Draw the symbol for Spot weld _____	
	11	Write the abbreviation for Material _____	
	12	Draw the symbol for angularity _____	
	13	Write the abbreviation for Assembly _____	
	14	Draw the symbol of Profile of a line _____	
Q.2	**(a)**	Define Fit.	**03**
	(b)	Explain about alloy cast irons.	**04**
	(c)	Explain and compare "Hole basis system" and "Shaft basis system" of fits. From manufacturing point of view which system is preferred? Why?	**07**
		OR	
	(c)	What is "alloying"? Explain the effect of adding following alloying element on steel (i) Mn (ii) Si (iii) Cr (iv) Mo (v) Ti (vi) W.	**07**
Q.3	**(a)**	Differentiate between Lap Joint and Butt Joint.	**03**
	(b)	Explain Ra Value and Roughness Grade Number.	**04**
	(c)	Brass and Bronze are alloys of which non-ferrous material? Give composition and application of (i) Cartridge Brass (ii) Gun Metal (iii) Muntz Metal.	**07**
		OR	
Q.3	**(a)**	Differentiate between chain riveting and zig - zag riveting.	**03**
	(b)	Give brief classification of ferrous metals.	**04**
	(c)	Draw the convection for the following (i) External Thread (ii) Spur gear (iii) Leaf Spring (iv) Spiral Spring (v) Trapezoidal section (vi) Knurling (vii) Chain wheel	**07**
Q.4	**(a)**	Define Production drawing of a component. What is the importance of Production drawing?	**03**
	(b)	What is the importance of surface roughness?	**04**
	(c)	Write a short note on copper and copper alloys.	**07**

OR

Q.4	**(a)**	What is an injection mould?	**03**
	(b)	What are the different parts of an Injection mould?	**04**
	(c)	The dimensions of a shaft and hole are: Basic Shaft size =60 mm and given as $60^{-0.02}$ & Basic hole size =60 mm and given as $60^{-0.005}$ find i) Tolerance of Shaft, ii) Tolerance of Hole, iii) Max Allowance, v) Min allowance, iv) Type of Fit.	**07**
Q.5	**(a)**	Write the effects of adding alloying elements Cr to steels.	**03**
	(b)	Draw any FOUR elementary welding symbols with its designation and illustration.	**04**
	(c)	What is production drawing of a component? What information must be provided on production drawing of a machine to facilitate its manufacturing and assembly?	**07**

OR

Q.5		The component parts of a Lathe Tail Stock are shown in Figure 1. Prepare the front view in section of the assembly.	**14**



Part No.	Name	Matl	Qty
1	Body	CI	1
2	Barrel	MS	1
3	Spindle with washer & nut	MS	1
4	Centre	CS	1
5	Spindle bearing	CI	1
6	Hand wheel	CI	1
7	Clamping lever	MS	1
8	Stud	MS	1
9	Feather key	MS	1
10	Screw	MS	4

Figure 1.

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