Seat No.: _____ Enrolment No._____

GUJARAT TECHNOLOGICAL UNIVERSITY

ME - SEMESTER– II(Old course) • EXAMINATION (Remedial) – WINTER- 2015

Subject Code: 1720902 **Date: 10/12/2015**

Subject Name: Geometrical Dimensioning and Tolerancing

Time:2:30 pm to 5:00 pm **Total Marks: 70**

Instructions:

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

Q.1 **(a)** With the help of suitable example, detail the components common to GD&T Drawing. **07**

(b) ñSpecifying various modifiers in the feature control frame is based on components functionsò evaluate this statement citing suitable examples in each case. **07**

Q.2 **(a)** With the help of neat sketches interpret the following **07**

(1) Two co-axial diameters as a datum features

(2) Datum Features of size

(b) With the help of suitable examples, explain the circumstances under which form controls are used in GD&T drawing. **07**

OR

(b) With the help of suitable examples, explain the circumstances under which orientation controls are used in GD&T drawing. **07**

Q.3 **(a)** Calculate the minimum wall thickness of given Figure 1. **07**

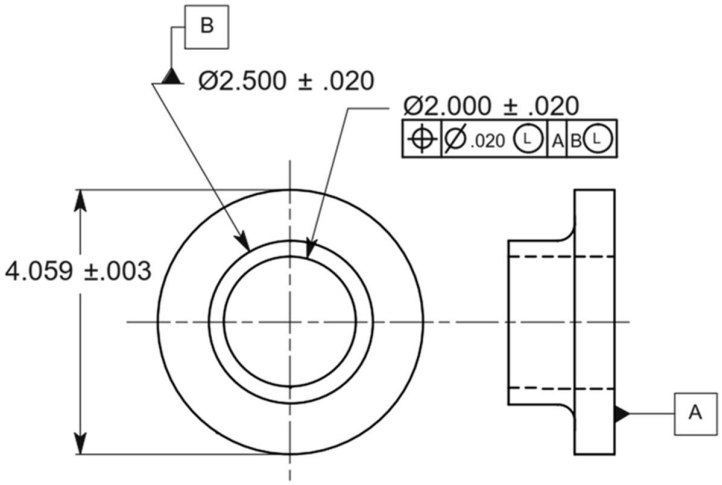

Figure 1

(b) With the help of suitable examples interpret the following terms in the context of GD&T (i) Straightness (ii) Circularity **07**

OR

Q.3 **(a)** Calculate the virtual conditions and resultant conditions for the pin and hole. Then calculate the maximum and minimum distances for dimensions X and Y in Figure 2. **07**

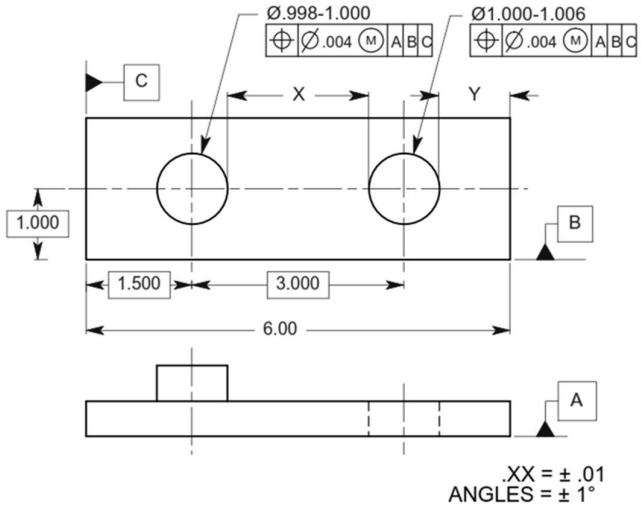

Figure 2

	(b)	With the help of neat sketches explain the use of any two form control symbols	**07**
Q.4	**(a)**	Giving suitable examples, explain the term ñSimulating a datum feature. Why it is required?	**07**
	(b)	What do you mean by virtual condition? Give suitable example and explain its significance in GD&T, in case of feature control frames with MMC modifier & LMC modifier.	**07**

OR

Q.4	**(a)**	Explain, with neat sketches, how profile of a line is different from profile of surface?	**07**
	(b)	With the help of suitable example explain, how resultant condition differs with MMC & LMC modifiers.	**07**
Q.5	**(a)**	Explain with the help of an example why plus and minus system of dimensioning and toleranceing is unable to express the design intent.	**07**
	(b)	Why does the order of precedence of datumôs make such a difference in feature orientation? Give neat sketches to justify your answer.	**07**

OR

Q.5	**(a)**	With the help of suitable explain, explain RFS. Also explain when both RFS and MMC represent the same boundary.	**07**
	(b)	ñMMC ensures assembly, whereas LMC ensures minimum wall thicknessò evaluate this statement giving suitable examples.	**07**

****