## **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) õSpecifying various modifiers in the feature control frame is based on components functionsö evaluate this statement citing suitable examples in each case.
- 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.

OR

- (b) With the help of suitable examples, explain the circumstances under which orientation controls are used in GD&T drawing.
- Q.3 (a) Calculate the minimum wall thickness of given Figure 1.

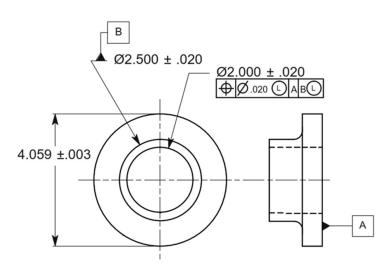


Figure 1

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

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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.

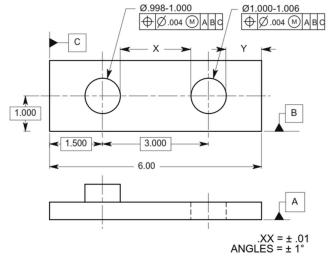


Figure 2

Q.4 (a) Giving suitable examples, explain the term õSimulating a datum feature. Why it is required?
(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.

(b) With the help of neat sketches explain the use of any two form control symbols

OR

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

OR

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

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**07**