

**BACHELOR OF TECHNOLOGY IN  
MECHANICAL ENGINEERING  
(COMPUTER INTEGRATED  
MANUFACTURING)**

**Term-End Examination**

**December, 2013**

**BME-002 : COMPUTER AIDED DESIGN**

*Time : 3 hours*

*Maximum Marks : 70*

*Note : Answer any seven questions. Use of scientific calculator is allowed. Draw neat sketches wherever instructed to support your answer in theory and numerical questions.*

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|----|-----|----------------------------------------------------------------------------------------------------------------|----|
| 1. | (a) | What are CAD tools ?                                                                                           | 5  |
|    | (b) | Explain the principle of colour CRT monitor.                                                                   | 5  |
| 2. | (a) | What is the aspect ratio of an image ?                                                                         | 5  |
|    | (b) | Explain the Liquid Crystal Display.                                                                            | 5  |
| 3. | (a) | Name different types of output devices describe any one of them.                                               | 5  |
|    | (b) | With suitable example describe 2-dimensional translations.                                                     | 5  |
| 4. | (a) | Show the reflection about the line $y=x$ is attained by reversing the co-ordinate that<br>$M_x(x, y) = (y, x)$ | 5  |
|    | (b) | What are projections ? Give a brief classification of projections.                                             | 5  |
| 5. |     | Write the algorithm for back face detection method.                                                            | 10 |

6. (a) With the help of RGB colour cube describe RGB model. 5  
(b) Compare parametric and non-parametric representation of a circle. 5
7. (a) What is a spline function ? Discuss its characteristics. 5  
(b) Discuss the construction of Bezier curves. 5
8. Distinguish 3-D CAD model with 2-D and  $2\frac{1}{2}$  D-models. Why is the rational form of polynomial functions used in geometrical modeling ? 10
9. Find the equivalent bicubic formulation of closed cubic B-spline surface. 10
10. Name different methods for representing solid models. Explain sweep representation. 10
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