

**B.Tech. MECHANICAL ENGINEERING
(BTMEVI)**

Term-End Examination

December, 2013

BIMEE-016 : ROBOTICS

Time : 3 hours

Maximum Marks : 70

Note : (i) Answer *any five* questions.

(ii) *All* questions carry *equal* marks.

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| 1. | (a) | Explain the commonly used robot configuration and axis systems. | 10 |
| | (b) | What is meant by 'work envelope' ? Describe. | 4 |
| 2. | (a) | Explain various industrial application of robots. | 7 |
| | (b) | Briefly discuss different programming language use in robotics. | 7 |
| 3. | | Explain the main robot anatomy with neat sketch. | 14 |
| 4. | | Explain the machine vision systems of robot. | 14 |
| 5. | | Explain the various techniques of image processing and analysis. | 14 |
| 6. | (a) | Explain the teach pendant of a robot system. | 4 |
| | (b) | Explain lead through methods of programming a robot | 5 |
| | (c) | How would you relate a robot to an NC machine ? Explain. | 5 |
| 7. | | Briefly explain the workplace design consideration for safety of robots in details. | 14 |
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