

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

Term-End Examination

June, 2013

BIMEE-016 : ROBOTICS

Time : 3 hours

Maximum Marks : 70

*Note : (i) Solve any five questions.
(ii) All questions carry equal marks.*

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| 1. | (a) | How would you classify robots based on anatomical features and applications ? Explain. | 10 |
| | (b) | Discuss role of robots in assembly and material handling. | 4 |
| 2. | | Define : | |
| | (a) | Work space | 2 |
| | (b) | Payload capacity of robot | 4 |
| | (c) | Accuracy of robot | 2 |
| | (d) | Repeatability of robot | 4 |
| | (e) | Quality of robot | 2 |
| 3. | | Explain different characteristic parts of a robot, their motions and functions with neat sketch. | 14 |
| 4. | (a) | Explain the role of different types of sensors in impact and collision avoidance of a robotic system. | 10 |
| | (b) | Write a note on pressure sensor. | 4 |

5. Briefly explain the working principle of different types of position sensors with neat sketch. 14
 6. Briefly explain the main robot programming languages in detail. 14
 7. Briefly explain the safety sensors and safety monitoring of robots in details. 14
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