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Code No: 137GR

**R16**

JAWAHARLAL NEHRU TECHNOLOGICAL UNIVERSITY HYDERABAD

B. Tech IV Year I Semester Examinations, October/November - 2020

ROBOTICS

(Common to ME, MSNT)

Time: 2 Hours

Max. Marks: 75

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Answer any Five Questions  
All Questions Carry Equal Marks

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1. Describe the configurations of a robot with a suitable sketch. [15]
2. What do you mean by automation? Explain in detail the different types of automations with suitable examples. [15]
3. Explain in detail inverse solution of solving kinematic problems. [15]
4. Obtain the forward kinematic transformation matrix for 2 RR Planar manipulator assuming suitable data. [15]
5. Explain in detail the Lagrange – Euler formulation dynamic model/algorithm. [15]
6. Explain in detail the position planning and orientation planning of Cartesian space scheme. [15]
7. Explain the principle and working of optical encoders with a suitable sketch. [15]
8. a) What are the requirements of the Robot for spray painting applications? Explain. [7+8]  
b) Explain in detail the requirements of robots in Material transfer applications in industrial environment.

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