Total no. of pages :1   Roll No._____

B.Tech (Engg. Physics)   8th SEMESTER

MID SEMESTER EXAMINATION   (March 2019)

EP-410 ROBOTICS ENGINEERING

Time : 90 mins.   Max. Marks: 25

Note: Attempt all questions. Assume missing data , if any

Q.1. Define robot as per RIA. Explain OPEN LOOP and CLOSED LOOP robotic systems   -05-

Q.2. Define d.o.f. Explain three-d.o.f related to arm and body assembly and three-d.o.f of wrist assembly of an Industrial robot.   -05-

Q.3. Differentiate between Direct kinematics and Inverse kinematics   -02-

Q.4. Derive transformation matrix for pure rotation with respect to X-axis.
-05-

Q.5. Explain with diagram any two end effectors as gripper and any two end effectors as tools used in industrial robot.   -08-