REC 10.5: Robotic Movement

1. What is a work envelope?
2. The maximum reach of the robot arm is easily found when extended to its maximum length **\_\_\_\_\_\_\_\_\_\_\_** and \_\_\_\_\_\_\_\_\_\_\_\_\_.
3. What are some peripheral devices that can be added to the robot arm to increase it’s work envelope?
4. **\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_**are the preferable method of confining the motion of robotic joints, as well as the most common.
5. This basic functionality of a soft limit is identical to that of a \_\_\_\_\_\_\_\_\_\_\_\_\_\_\_, except that when an encoder or potentiometer is tracking the movement of a joint, the limit switch is needed only as backup.
6. Give two examples of soft limits.
7. What is a teach pendant?
8. The process of saving multiple positions in space and then playing them back to create the desired movement is called \_\_\_\_\_\_\_\_\_\_\_\_\_\_\_.
9. The \_\_\_\_\_\_\_\_\_\_\_\_\_system uses three axes, x, y and z, and defines each point in space as a position relative to the origin, located at point (0,0,0).
10. A robot's position in Cartesian coordinates is defined as the distance from the **\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_** to the point of origin, as well as the pitch and roll of the end effector.
11. The \_\_\_\_\_\_\_\_\_\_\_\_\_\_ coordinate system was created to allow for more manual control of a robot. A robot's position in Joint Coordinates is defined by a series of \_\_\_\_\_\_\_\_\_, each one representing the position of one of the joints. Each angle references the joint which proceeds it, and is the angle between the joints.
12. What is a limitation of using the Joint coordinate system?
13. In \_\_\_\_\_\_\_\_\_\_\_\_positioning, the new position represents a distance from the original point of origin, regardless of the robot's current location. A \_\_\_\_\_\_\_\_\_\_\_\_\_position is a position whose coordinates are defined as an offset from a reference position coordinates.