**QUIZ Answer Key**

**Introduction to robotics: Part 1**

1. Who first introduced the word “robot”?
   1. Isaac Asimov
   2. **Karel Capek**
   3. Isaac Newton
   4. R2-D2
2. Where was the term “robotics” first used?
   1. On the set of Star Trek
   2. In a GM industrial plant
   3. The Massachusetts Institute of Technology
   4. **In science fiction stories**
3. What was the purpose of Asimov’s Laws of Robotics?
   1. **To insure that robots always serve mankind**
   2. To insure that robots become our masters
   3. To insure that robots become sentient
   4. To insure that the military never gains control of robots
4. Which of the following is NOT a fictional robot?
   1. R2-D2
   2. **The Unimate**
   3. The Cyberdyne Systems Model 101Terminator
   4. Lieutenant Commander Data
5. What do industrial robots look like?
   1. Humanoid with legs and arms
   2. A small vacuum cleaner
   3. **A multi-jointed arm with a fixed base**
   4. A soft, furry pet
6. Which engineering field would specialize in an understanding of robotic motion?
   1. Electrical Engineering
   2. **Mechanical Engineering**
   3. Industrial Engineering
   4. Civil Engineering
7. Which engineering field would specialize in an understanding of manufacturing processes?
   1. Electrical Engineering
   2. Mechanical Engineering
   3. **Industrial Engineering**
   4. Civil Engineering
8. Which engineering field would specialize in an understanding of robotic control systems?
   1. **Electrical Engineering**
   2. Mechanical Engineering
   3. Industrial Engineering
   4. Civil Engineering
9. True or **false**: women are not suitable for jobs involving robotics.
10. Which of the following statements is true?
    1. All robots are intelligent
    2. All robots act like humans
    3. All robots are controlled remotely
    4. **All robots are electromechanical machines using electronic programming**
11. Which of the following systems uses motors and gears?
    1. The structural system
    2. **The propulsion system**
    3. The sensor and feedback system
    4. The control system
12. The microcontroller is part of which of the following systems?
    1. The structural system
    2. The propulsion system
    3. The sensor and feedback system
    4. **The control system**
13. Which of the following systems provide support and stability?
    1. **The structural system**
    2. The propulsion system
    3. The sensor and feedback system
    4. The control system
14. Which of the following systems use a transducer?
    1. The structural system
    2. The propulsion system
    3. **The sensor and feedback system**
    4. The control system
15. Where are tethered robots used most often?
    1. **In an industrial plant**
    2. In a student robot
    3. In military applications
    4. In automotive applications
16. Which of the following is the most common source of power for a student robot?
    1. Alternating Current
    2. **Batteries**
    3. Pneumatics
    4. Hydraulics
17. Which of the following does not need a power source to operate?
    1. The propulsion system
    2. The control system
    3. The sensor and feedback system
    4. **The structural system**
18. List three common robotic applications.

**jobs that are:**

1. **Dirty**
2. **Dangerous**
3. **Repetitive**
4. List three benefits of robot use in industry.
   1. **Increased productivity**
   2. **Improved (and consistent) quality**
   3. **Reduction in cost of manufacturing**
   4. **Improved management control of process and productivity**
   5. **Operation in hostile environments**
5. Describe the types of jobs where robots replace human workers.

**routine and labor intensive jobs**

1. Describe the types of jobs created by industry use of robots.

**Jobs which require more knowledge and skill**

1. Describe three features of a robot.
   1. **a mechanical device that can move around and manipulate its environment**
   2. **uses a microcontroller**
   3. **requires a computer program to operate**
2. Describe how robots have evolved.

* **the ability to handle an increased number of variables**
  + **varieties of situations**
* **newer robots are able to perform tasks that are non repetitive and non sequential, and in more and more complex environments**