Unit - 3
Question bank

2-Mark Questions:

1. What is the difference between process monitoring and condition monitoring?
2. What are sensors?
3. What are the principles of process monitoring?
4. What is the difference between online and offline quality control?
5. What is quality parameter design?
6. How can process signals be used to detect faults?
7. What are the principles of condition monitoring in manufacturing systems?
8. What are the common types of sensors used for monitoring force, vibration, and noise?
9. What factors should be considered when selecting sensors and monitoring techniques?
10. What is agile manufacturing?
11. What is a factory information system?
12. What is Industry 4.0?

16-Mark Questions:

1. Discuss the importance of process monitoring and condition monitoring in manufacturing. How do they contribute to improved quality and productivity?
2. Explain the different types of sensors used in process monitoring, along with their applications and limitations.
3. Discuss the various methods used for online and offline quality control. How are they implemented in manufacturing settings?
4. Explain the concept of quality parameter design. How can it be used to improve product quality and reduce manufacturing costs?
5. Describe the different techniques used for direct monitoring of faults based on process signals. How are these techniques implemented and interpreted?
6. Discuss the principles and techniques of condition monitoring in manufacturing systems. How can condition monitoring help in detecting equipment failures and preventing downtime?
7. Explain the selection criteria for sensors and monitoring techniques. How are these criteria used to optimize the condition monitoring system?
8. Discuss the concepts of agile manufacturing and flexible manufacturing. How do they relate to process monitoring and condition monitoring?
9. Explain the role of enterprise integration and factory information systems in process monitoring and condition monitoring. How do they enable data-driven decision making?
10. Discuss the key characteristics and technologies of Industry 4.0. How does Industry 4.0 impact process monitoring and condition monitoring?