



M.TECH END SEMESTER EXAMINATIONS: APRIL /MAY 2024

(Regulation 2018)

Second Semester

MASTER OF TECHNOLOGY MANAGEMENT

P18TMT2105: Industrial Digital Transformation

COURSE OUTCOMES

- CO1:** Understand the drivers and enablers of Industry 4.0.
- CO2:** Discover the smartness in smart Factories, smart cities, smart products, and smart services.
- CO3:** Able to outline the various systems used in a manufacturing plant and their role in an Industry 4.0 world.
- CO4:** Understand the power of cloud computing in a networked economy.
- CO5** Demonstrate the opportunities, challenges brought about by Industry 4.0 and how organisations and individuals should prepare to reap the benefits.

Time: Three Hours

Maximum Marks: 100

Answer all the Questions:-

PART A (10 x 1 = 10 Marks)

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|----|--|--|-------------------|
| 1. | What is an example of a smart product in Industry 4.0? | CO1 | [K ₂] |
| | a) A smartphone | b) A self-driving car | |
| | c) A traditional light bulb | d) A non-internet connected refrigerator | |
| 2. | The "Internet of Services" (IoS) refers to: | CO1 | [K ₂] |
| | a) Connecting smart devices to the internet | b) Providing services online through web applications | |
| | c) Utilizing cloud computing for data storage and processing | d) Integrating automation with customer service channels | |
| 3. | Why is cybersecurity a major concern in Industry 4.0? Choose one reason. | CO2 | [K ₂] |
| | a) Increased use of complex algorithms | b) Faster data processing requirements | |
| | c) Highly interconnected machines and systems | d) Need for specialized robotics | |
| 4. | Digital Twins, a virtual representation of a physical asset in Industry 4.0, are primarily used for: | CO3 | [K ₂] |
| | a) Remote control of factory equipment | b) Real-time performance monitoring and optimizations | |
| | c) Training and upskilling factory personnel | d) Product marketing and customer engagement | |
| 5. | What is the main benefit of using Cobots (collaborative robots) in factories? | CO4 | [K ₂] |
| | a) General motors | b) Safe equipment | |

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|-----|---|-----|-------------------|
| 22. | Explain how IIoT differs from the broader concept of the Internet of Things (IoT). | CO2 | [K ₂] |
| 23. | How can cloud computing be utilized to support knowledge sharing within an organization | CO3 | [K ₂] |
| 24. | Define smart supply chain and explain its significance in modern industries. | CO4 | [K ₂] |
| 25. | Briefly describe the purpose of an Industry 4.0 laboratory. | CO5 | [K ₂] |
| 26. | Discuss the potential impact of Industry 4.0 on job creation and the skillsets | CO3 | [K ₂] |

Answer any FOUR Questions

PART D (4 x 10 = 40 Marks)

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|-----|--|-----|-------------------|
| 27. | What are Industry 4.0 Enablers and explain in detail | CO2 | [K ₂] |
| 28. | Describe three applications of smart technologies (e.g., smart devices, logistics, cities) within Industry 4.0 | CO1 | [K ₂] |
| 29. | Discuss the importance of knowledge sharing and collaboration in organizations implementing Industry 4.0. Briefly explain the concept of cloud computing and its role in this context. | CO5 | [K ₂] |
| 30. | Describe three specific applications of AI in smart manufacturing and explain the benefits they offer. | CO2 | [K ₂] |
| 31. | Discuss the concept of smart logistics and their relationship with Industry 4.0. | CO3 | [K ₂] |
