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Question Paper Code	13859
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B.E. / B.Tech. - DEGREE EXAMINATIONS, NOV / DEC 2025

Seventh Semester

Computer Science and Engineering (AIML)

20AMEL703 - INDUSTRY IOT 4.0

Regulations - 2020

Duration: 3 Hours

Max. Marks: 100

PART - A (MCQ) (10 × 1 = 10 Marks)

Answer ALL Questions

	<i>Marks</i>	<i>K- Level</i>	<i>CO</i>
1. Which revolution is associated with cyber-physical systems? (a) First (b) Second (c) Third (d) Fourth	1	K1	CO1
2. What is an essential component of Smart factories? (a) Industry 4.0 (b) Information Technology (c) Globalization (d) IoT	1	K1	CO1
3. Which sensor measures pressure? (a) Thermistor (b) Strain Gauge (c) Piezoelectric Sensor (d) Accelerometer	1	K1	CO2
4. Which of the following is a non-contact type of sensor? (a) Thermocouple (b) LVDT (c) Ultrasonic sensor (d) Strain gauge	1	K1	CO2
5. Which technology provides low-cost, short-range wireless connectivity? (a) LoRa (b) Wi-Fi (c) Ethernet (d) Bluetooth	1	K1	CO3
6. Name the tool which is commonly used for creating real-time dashboards. (a) C++ (b) NodeMCU (c) Grafana (d) Windows Media Player	1	K1	CO3
7. Real-time dashboards are used to: (a) Control device IP settings (b) Monitor data instantly (c) Manufacture sensors (d) Create hardware designs	1	K1	CO4
8. Find the feature of Cyber Physical Systems (CPS) (a) Manual intervention (b) Physical-only process (c) Integration of physical and digital components (d) Stand-alone computing	1	K1	CO4
9. Collaborative platforms in Industry 4.0 help in: (a) Isolated decision-making (b) Data silos (c) Real-time teamwork and data sharing (d) Hardware-only automation	1	K1	CO5
10. Which energy source is mostly used in base-load power plants? (a) Solar (b) Wind (c) Nuclear (d) Diesel	1	K1	CO6

PART - B (12 × 2 = 24 Marks)

Answer ALL Questions

11. Define cyber-physical systems.	2	K1	CO1
12. Define LPS and its focus.	2	K1	CO1
13. Name few internetwork IoT Protocols.	2	K1	CO2
14. State the focus of first and second industrial revolution.	2	K1	CO2
15. Explain about the predictive maintenance.	2	K2	CO3
16. How does an IoT gateway support data transmission?	2	K1	CO3
17. Compare any two collaborative platforms used in industry.	2	K2	CO4
18. Illustrate the features of smart sensors.	2	K2	CO4
19. Explain how control charts are used in quality management.	2	K2	CO5
20. Summarize the challenges in hospital inventory management.	2	K2	CO5
21. State the advantages of inventory control.	2	K1	CO6
22. What is an Integrated Workplace Management System?	2	K1	CO6

PART - C (6 × 11 = 66 Marks)

Answer ALL Questions

23. a) Explain the features and components of a smart and connected Business Perspective. 11 K2 CO1
- OR**
- b) Explain about Lean Production system. Illustrate how LEAN production system is integrated into Industry 4.0. 11 K2 CO1
24. a) Explain about any three inter network protocols used in IIoT. 11 K2 CO2
- OR**
- b) Outline the key components Globalization Issues in IIoT 4.0. 11 K2 CO2
25. a) Explain the architecture and functions of an IoT Gateway in IIoT. 11 K2 CO3
- OR**
- b) Describe the role of edge systems in data processing and control. 11 K2 CO3
26. a) Demonstrate the architecture of Cyber Physical Systems with examples. 11 K2 CO4
- OR**
- b) Summarize the features and applications of next-generation sensors in CPS. 11 K2 CO4
27. a) Outline the advantages of collaborative platforms in Industry 4.0 and explain how it improves innovation in industries. 11 K2 CO5
- OR**
- b) Show how inventory mismanagement can impact industries in detail. 11 K2 CO5
28. a) Organize the concepts of a digital twin and explain its integration with next- gen sensors. 11 K3 CO6
- OR**
- b) Apply the challenges of ensuring data privacy, accuracy, and interoperability in electronic health records (EHRs) while maintaining patient safety. 11 K3 CO6