AUTUMN MID-SEMESTER EXAMINATION-2023-24
School of Electronics Engineering
Kalinga Institute of Industrial Technology, Deemed to be University

3rdSemester
Subject: Industry 4.0 Technologies (EX20001) (Regular)

Instructions:-

- **Question Paper consists of 4 (four) Sections i.e. A, B, C and D.**
- **Section A is Compulsory. Attempt any 1 (one) question from Sections B, C and D.**
- **All parts of a question should be answered at one place only**

Time: 1.5 hours **Full Marks: 40**

Q No		CO	Marks
	Section A		
Q1.	Answer the following questions in short.		[2x5]
a	How do weak and strong AI differ in terms of application?	CO3	
b	What are the challenges of implementing Cyber Physical Systems in a manufacturing industry?	CO3	
c	What are the different types of data? Explain examples from each type.	CO3	
d	How the virtual reality technology helps to the medical student?	CO3	
e	What makes the 4th Industrial Revolution different from the 3rd Industrial Revolution?	CO1	
	Section B		
Q2.	A paper manufacture industry has successfully implemented I4.0 technologies. According to you, what are the **five significant principles** the sector might have adopted as operational changes? Justify your answer.	CO1	10
Q3.	A) Explain the different phases for transforming from digital world information to real world tangible product.	CO1	5
	B) Explain the importance of AI in industry. How are AI, ML and DL different? (write 3-4 differences).	CO3	5
	Section C		
Q4	What are the layers of 5C architecture of Cyber Physics System (CPS). Explain each layer with a real-time example. Which type of implementation model of the CPS is useful to communicate with the smart Air Conditioner of the smart home?	CO3	10
Q5	Explain in brief the different models of Cloud computing. Give a comparative analysis of the service models in the context of the user.	CO3	10
	Section D		
Q6	A) What are the benefits of 3D printing for a designer? Explain different steps involved in 3D design process.	CO3	5
	B) Differentiate between AR and VR with an example and explain how the AR technology can improve the industrial safety training.	CO3	5
Q7	How are Big-data and AI related to each other? Explain advantages of both these technologies in context of Industry 4.0.	CO3	10

---------- **GOOD LUCK** ----------