JAYPEE UNIVERSITY OF INFORMATION TECHNOLOGY, WAKNAGHAT

TEST -2 EXAMINATION- 2025

B.Tech-7th Semester (CSE, ECE Minor)

COURSE CODE (CREDITS): 18B1WEC747 MAX. MARKS: 25

COURSE NAME: INTERNET OF THINGS

COURSE INSTRUCTORS: Dr Rajiv Kumar MAX. TIME: 1 Hour 30 Min

Note: (a) All questions are compulsory.

(b) The candidate is allowed to make Suitable numeric assumptions wherever required for solving problems

(c) The calculator (non-programmable) is allowed to use in examination.

Q.No	Question	CO	Marks
Q1	In the context of Industrial Internet of Things (IIoT), what are the primary challenges associated with data management. How do advanced analytics techniques, such as deep learning, address these challenges?	CO-4	5
Q2	In the context of Industrial Internet of Things (IIoT), how does fog computing enhance data management and analytics, and what are its primary benefits and challenges?	CO-4	5
Q3	How does Software-Defined Networking (SDN) enhance the management and performance of Industrial Internet of Things (IIoT) networks, and what are the primary benefits and challenges associated with its implementation?	CO-3	5

Q4	In the context of Industrial Internet of Things (IIoT), what are the primary security challenges and threats, and how can organizations mitigate these risks to ensure the integrity and reliability of IIoT systems?	CO-3	5
Q5	A smart factory has 50 IIoT sensors deployed on its machines. Each sensor generates 500 KB of data per minute. The factory uses a fog computing layer to preprocess data before sending it to the cloud. The fog layer reduces data by 60% before transmission. 1. Calculate the total data generated by all sensors in one hour. 2. Calculate the total data transmitted to the cloud in one hour after fog processing. 3. If the network bandwidth to the cloud is 10 Mbps, determine whether the network can handle the data without congestion. (1 Byte = 8 bits)	CO3	5

DIT ESE EXAMINATION OCT 2025