

JAYPEE UNIVERSITY OF INFORMATION TECHNOLOGY, WAKNAGHAT

TEST -2 EXAMINATION- 2023

M.Tech.(IoT)-1st Semester

COURSE CODE(CREDITS): 21M1WEC133

MAX. MARKS: 25

COURSE NAME: INDUSTRIAL AUTOMATION AND IIOT

COURSE INSTRUCTORS: Dr Rajiv Kumar

MAX. TIME: 1 Hour 30 Minutes

Note: (a) All questions are compulsory.

(b) Marks are indicated against each question in square brackets.

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

Qu-1: Why we need smart factories? Explain different components of these smart factories. [2]

Q-2: What are key enablers of collaboration productivity? Explain each. [2]

Q-3: What are different types of AR and VR? Make a comparison between AR and VR. [2]

Q-4: Justify that towards fulfilling the objectives of an Industry 4.0, artificial intelligence will play a big role. [2]

Q-5: Give some source of data for the use of IoT. Also, describe important characteristics of big data for industrial purposes. [2]

Q-6: What is concept of Industrial Internet? Explain the challenge and remedies of cyber security in IIoT. [3]

Q-7: Briefly, explain the aspects of industrial processes those recommends to incorporate IoT into the industrial processes. Give views about the smart factories of future. [3]

Q-8: Give your ideas about the following success stories of inclusion of IIoT: (i) Caterpillar: IoT and AR, (ii) Amazon: Smart ware housing, (iii) Boeing: Efficient Manufacturing [3]

Q-9: Give an architectural framework of a smart sensor node. Illustrate smart sensing in milk packaging unit. [3]

Q-10: Calculate total delay incurred in transferring 10Gb data from Chandigarh to Chennai via Delhi and Bangalore. You can assume any missing data or detail. Bandwidth details are given as:

40Mbps (Chandigarh to Delhi), 50Mbps (Delhi to Bangalore), 40Mbps (Bangalore to Chennai)

[3]