

GUJARAT TECHNOLOGICAL UNIVERSITY

BE- SEMESTER-VI (NEW) EXAMINATION – WINTER 2024

Subject Code:3161926

Date:20-12-2024

Subject Name:Industry 4.0

Time:02:30 PM TO 05:00 PM

Total Marks:70

Instructions:

1. Attempt all questions.
2. Make suitable assumptions wherever necessary.
3. Figures to the right indicate full marks.
4. Simple and non-programmable scientific calculators are allowed.

	MARKS
Q.1 (a) Differentiate Industry 3.0 and Industry 4.0	03
(b) What is the cyber physical system?	04
(c) Explain proposed framework for Industry 4.0	07
Q.2 (a) Explain cloud robotics with suitable example	03
(b) Define: (1) Additive manufacturing (2) Transducer	04
(c) Explain synthesis by vapour condensation methods	07
OR	
(c) How India is preparing for Industry 4.0?	07
Q.3 (a) Enlist various applications of robots in manufacturing	03
(b) Explain financing condition for Industry 4.0 in India	04
(c) What are the advanced sensor technologies in robotics? Enlist and explain any two	07
OR	
Q.3 (a) What are the risks of an Industry 4.0 resolution?	03
(b) What is IoT? How is it associated with Industry 4.0?	04
(c) Explain six design principles for Industry 4.0	07
Q.4 (a) What is IoRT? Enlist various components of IoRT	03
(b) Explain the concept of smart factories	04
(c) Illustrate cognitive architecture for cyber physical robotics with required block diagram	07
OR	
Q.4 (a) How much does it cost to implement Industry 4.0 solutions?	03
(b) Enlist the challenges for Industry 4.0 implementation in India	04
(c) Explain the industrial robotic applications in context of (1) Maintenance (2) Assembly and (3) Training	07
Q.5 (a) What is 5G and how will it accelerate Industry 4.0?	03
(b) What is big data? Give its applications in Industry 4.0	04
(c) Distinguish between AR, VR and MR	07
OR	
Q.5 (a) How does Industry 4.0 affect the workers?	03
(b) What are the various AR hardware and software technology?	04
(c) Explain the role of AI and Robotics in the implementation of Industry 4.0	07
