Reg. No.												

Question Paper Code	12168

B.E. / B.Tech. - DEGREE EXAMINATIONS, NOV / DEC 2023

Sixth Semester

Artificial Intelligence and Data Science

20AIPC601 - ROBOTICS PROCESS AUTOMATION

(Regulations 2020)

Duration: 3 Hours Max. Marks: 100

PART - A (10 × 2 = 20 Marks)

Answer ALL Questions

		Marks, K-Level, CO
1.	What are the risk and challenges of RPA?	*2,K1,CO1*
2.	Define RPA business case.	*2,K1,CO1*
3.	How to import a new name spaces?	*2,K2,CO2*
4.	What are flow charts and when it is used?	*2,K1,CO2*
5.	What are the structure of Selector and the format of each node?	*2,K2,CO3*
6.	Difference between input method and output method.	*2,K2,CO3*
7.	What are the characteristics of actuating systems?	*2,K2,CO4*
8.	What is a sensor?	*2,K1,CO4*
9.	How robotics and automation plays an important role in Industry 4.0?	*2,K2,CO6*
10.	How robots assist the medical procedures?	*2,K2,CO6*

PART - B (5 × 13 = 65 Marks)

Answer ALL Questions

11.	a)	Describe various methods to judge the suitability of robot using performance testing.	*13,K2,CO1*
		OR	
	b)	Compare and contrast PDD and SDD with their key components.	*13,K2,CO1*
12.	a)	Write in detail about automated storage/ retrieval systems.	*13,K2,CO2*
		OR	
	b)	List the panels available in RPA tool and explain in detail.	*13,K2,CO2*
13.	a)	Explain UiPath recording and its types in detail.	*13,K2,CO3*
		OR	
	b)	Illustrate UiPath PDF Data Extraction in detail.	*13,K2,CO3*

14. a) Justify the working of touch and tactile sensor with an example. *13,K2,CO4*

OR

b) Explain the working of force and pressure sensor with neat diagram. *13,K2,CO4*

15. a) (i) Write short notes on applications of robotics and automation. *7,K2,CO6*
(ii) Write about micro and nano robots. *6,K2,CO6*

OR

b) Enumerate the uses of robots in household applications and elaborate with an example. *13,K2,CO6*

PART - C (1 × 15 = 15 Marks)

16. a) Justify Singularities and Jacobian of Robotics using mathematical equations. *15,K2,CO5*

OR

b) Describe in detail about Trajectory Planning for robot manipulators. *15,K2,CO5*