Reg. No.															

Question Paper Code	13623

B.E. / B.Tech. - DEGREE EXAMINATIONS, APRIL / MAY 2025

Sixth Semester

Artificial Intelligence and Data Science

(Common to Computer Science and Engineering (AIML))

20AIPC601 - ROBOTICS PROCESS AUTOMATION

Regulations - 2020

Duration: 3 Hours | Max. Marks: 100

PART - A (MCQ) (10 × 1 = 10 Marks)

Answer ALL Questions

		Marks	K – Level	CO
1.	What is RPA primarily used for? (a) Automating business processes (b) Automating BPO process (c) Automating banking processes (d) Automates claims process	1	K1	CO1
2.	The _____ is responsible for allocating, freeing, and compacting memory. (a) garbage collector (b) type checker (c) code manager (d) memory	1	K1	CO1
3.	Which activity is used to make decisions in a UiPath workflow? (a) Switch (b) If (c) Decision (d) Choose	1	K1	CO2
4.	The _____ activity is used to delay or slow down automation by pausing it for a defined period of time. (a) automate (b) delay (c) wait (d) sleep	1	K1	CO2
5.	During a web integration project, which protocol would an RPA developer use to make simple HTTP calls between machines? (a) SOAP (b) XML (c) REST (d) JSON	1	K1	CO3
6.	The Terminal plug-in in UiPath is used to execute commands in _____ format. (a) graphical (b) textual (c) audio (d) visual	1	K1	CO3
7.	Identify the type of crash dump that provides complete information about the crash. (a) mini dump (b) Full dump (c) Quick dump (d) Summary dump	1	K1	CO4
8.	Unchecked exceptions are commonly used for issues that are difficult to predict and handle at _____ making them more suited for runtime detection. (a) runtime (b) design (c) compile time (d) testing	1	K1	CO4
9.	Identify the activity used to ensure certain actions are performed after both successful and unsuccessful execution of a Try Catch block. (a) throw (b) finally (c) write line (d) assign	1	K1	CO5
10.	What can users do with packages on the Packages page in UiPath Orchestrator? (a) only view them (b) view, update or delete them (c) share them externally (d) encrypt them for security	1	K1	CO6

PART - B (12 × 2 = 24 Marks)

Answer ALL Questions

		Marks	K – Level	CO
11.	Identify two key differences between traditional automation and Robotic Process Automation (RPA).	2	K2	CO1
12.	Define RPA Business case.	2	K1	CO1
13.	Write the steps needed to find the given number is odd or even using switch activity.	2	K2	CO2
14.	Interpret a data table to write all its data to an Excel file.	2	K2	CO2
15.	Illustrate the SAP automation process in UiPath.	2	K2	CO3
16.	What are the structure of Selector and the format of each node?	2	K2	CO3
17.	What are the two debugging techniques available in UiPath Studio?	2	K1	CO4
18.	Differentiate font office and back office robot.	2	K2	CO4
19.	Define inverse kinematics.	2	K1	CO5

20.	What is the scope of robotics in future?		*2*	*K2*	*CO5*
21.	How robots are employed in disaster management?		*2*	*K2*	*CO6*
22.	Summarize some common exceptions that are usually faced while working on UiPath.		*2*	*K2*	*CO6*

PART - C (6 × 11 = 66 Marks)

Answer ALL Questions

23.	a)	Develop a flowchart and explain the logic of a simple RPA bot that automates data entry from an Excel file to a web form.	*11*	*K3*	*CO1*
		OR			
	b)	Construct a basic programming logic using RPA constructs (like loops and decision-making) for automating an invoice processing task.	*11*	*K3*	*CO1*
24.	a)	Write the steps involved in the File operations using UiPath and explain any two file operations.	*11*	*K2*	*CO2*
		OR			
	b)	What is a sequence? Explain sequence with example by considering a simple project that asks the name of the user and then displays his (her) names as a sequence.	*11*	*K2*	*CO2*
25.	a)	How does Data Scraping differ from Screen Scraping? Illustrate your answer by describing a project that scrapes structured data from an HTML table and applies an advanced scraping technique like pattern-based selection.	*11*	*K2*	*CO3*
		OR			
	b)	Describe Image-based Automation and Keyboard-based Automation with a project where a calculator app is automated using only keyboard inputs and image recognition. Explain challenges and accuracy concerns.	*11*	*K2*	*CO3*
26.	a)	Explain the general characteristics of sensors used in robotics. How do sensitivity, range, resolution, and response time influence sensor selection in real-time robotic systems?	*11*	*K2*	*CO4*
		OR			
	b)	Design a robotic system that uses ultrasonic and IR proximity sensors to detect and classify obstacles as either large or small in the warehouse scenario above. Explain the working flow, sensor placement, and how the robot processes sensor data for accurate obstacle classification and navigation.	*11*	*K2*	*CO4*
27.	a)	Explain how medical robots are used in surgeries. Discuss the benefits and limitations of using robotic systems in the healthcare sector.	*11*	*K2*	*CO5*
		OR			
	b)	Discuss the role of robotics in Industry 4.0. How do robots integrate with IoT, cloud computing, and data analytics for efficient automation?	*11*	*K2*	*CO5*
28.	a)	Explain how inverse kinematics is applied in the robotic arm's movement during disaster recovery operations. How does the robot compute joint angles to reach a target position without disturbing the surrounding debris?	*11*	*K2*	*CO6*
		OR			
	b)	How the robots can be effectively used in flood disaster management? Describe the types of sensors and mobility mechanisms required for search and rescue operations in such environments.	*11*	*K2*	*CO6*