



**K. K. Wagh Institute of Engineering Education & Research, Nashik**  
(An Autonomous Institute From A.Y. 2022-23)

InSem Examination-II Summer2025	
Exam Seat No.:	
Academic Year:2024-2025	Semester:VI
Class:TY	Program:B.Tech
Branch Code:ROB	Pattern:2022
Name of Course:Robot Programming	Course Code: ROB223012
Max. Marks:30	Duration:1.15 Hrs.

**Instructions:** Candidates should read carefully the instructions printed on the Question Paper and on the cover page of the Answer Book, which is provided for their use.

1. This question paper contains 1 page.
2. Answer to each new question is to be started on a new page.
3. Assume suitable data wherever required, but justify it.
4. Draw the neat labelled diagrams, wherever necessary.
5. The last columns indicates the Course Outcome and level of Blooms Taxonomy of the Question/sub-question.

**Marks CO**

**Question No. 1**

- 1 a) i) Explain different types of Robot Programming. (4 marks) (7) CO1  
ii) What is Wrist Mechanism? Discuss its importance and applications. (3 marks)

**Question No. 2**

- 2 a) What are interlock commands? Explain their different types briefly with examples. (8) CO1  
Also, write a simple interlock logic to ensure that a robot only picks up an object if it is within the weight range of 1 kg to 10 kg.  
(8 marks)

**OR**

- 2 b) i) What are the operating modes of a robot? Explain their different types with examples. (4 marks) (8) CO1  
ii) What are the different robot specifications? Explain their significance with examples. (4 marks)

**Question No. 3**

- 3 a) i) Explain the classification of Robot Languages. (4 marks) (7) CO3  
ii) Write a palletizing program in VAL to pick and place objects in a 4×4 grid pattern. (3 marks)

**Question No. 4**

- 4 a) Explain in brief about WAIT, SIGNAL and DELAY commands for communications with examples for each. (8 marks) (8) CO3

**OR**

- 4 b) i) What are the different Motion Control commands and Hand Control commands in VAL. (8) CO3  
(4 marks)  
ii) Write the simple robot welding program in VAL. Also provide explanation of the program.  
(4 marks)

..... End of question paper.....