Reg. No. ☐☐☐☐☐☐☐☐

G. VENKATASWAMY NAIDU COLLEGE (AUTONOMOUS), KOVILPATTI – 628 502.

UG DEGREE END SEMESTER EXAMINATIONS - APRIL 2025.
(For those admitted in June 2021 and later)

PROGRAMME AND BRANCH: B.Sc., ELECTRONICS

SEM	CATEGORY	COMPONENT	COURSE CODE	COURSE TITLE
VI	PART-III	CORE	U21EL611	ROBOTICS AND AUTOMOTIVE ELECTRONICS

Date & Session: 29.04.2025/FN   **Time: 3 hours**   **Maximum: 75 Marks**

Course Outcome	Bloom's K-level	Q. No.	SECTION – A (10 X 1 = 10 Marks) Answer ALL Questions.
CO1	K1	1.	Which generation robots is repeating, non-servo, pick-and-place, or point-to-point kind? a) First generation b) Second generation c) Third generation d) Fourth generation
CO1	K2	2.	By whom were the laws of robotics framed? a) Isaac Newton b) Joseph Engelberger c) Isaac Asimov d) George D.Devol
CO2	K1	3.	Which of the following comes under the category of robot controllers? a) Continuous sequence control b) End to end control c) Definite control d) Limited sequence control
CO2	K2	4.	In _____, the controller records sequence of motions into memory. a) Fore-aft system b) Playback control c) Synchronous system d) Limited sequence control
CO3	K1	5.	Which of the following end effectors comes under the category of grippers? a) Spot welding gun b) Rotating spindle c) Scoops d) Heating torch
CO3	K2	6.	Which of the following grippers have suction cups to hold flat objects? a) Magnetized grippers b) vacuum grippers c) Adhesive grippers d) Hooks
CO4	K1	7.	Sensors are the transducers that are used to _____ a) measure physical quantity b) hold the object c) fix the object d) pick the object
CO4	K2	8.	From which of the following is known as contact sensor? a) tactile sensor b) proximity sensor c) visual sensor d) range detector
CO5	K1	9.	Which of the following the common imaging device used for robot vision systems? a) Videocon camera b) charge coupled device c) solid – state camera d) All of the above
CO5	K2	10.	_____robots are primarily used in pick and place applications. a) SCARA b) Cartesian c) Articulated d) rotary

Course Outcome	Bloom's K-level	Q. No.	SECTION – B (5 X 5 = 25 Marks) Answer ALL Questions choosing either (a) or (b)
CO1	K3	11a.	What are the three 3 laws of robotics explaining each law? **(OR)**
CO1	K3	11b.	Illustrate the function of hydraulic systems.
CO2	K3	12a.	Enumerate the specifications of robots. **(OR)**
CO2	K3	12b.	Describe the safety measures in robotics.
CO3	K4	13a.	Explain the working of a magnetic gripper. **(OR)**
CO3	K4	13b.	Illustrate the working of pick and place robot.
CO4	K4	14a.	Comment on an artificial intelligence. **(OR)**
CO4	K4	14b.	Comment on. range imaging sensor
CO5	K5	15a.	Explain about Noise reduction. **(OR)**
CO5	K5	15b.	Discuss about image storage.

Course Outcome	Bloom's K-level	Q. No.	SECTION – C (5 X 8 = 40 Marks) Answer ALL Questions choosing either (a) or (b)
CO1	K3	16a.	Briefly explain the robotic systems and anatomy. **(OR)**
CO1	K3	16b.	Illustrate the operation of DC and AC motors
CO2	K4	17a.	Explain the different types of robot controls. **(OR)**
CO2	K4	17b.	Discuss in detail about robot technology.
CO3	K4	18a.	Explain about end effectors and its types. **(OR)**
CO3	K4	18b.	Illustrate the function of vacuum and adhesive grippers.
CO4	K5	19a.	What are the need for sensing systems and explain touch sensor? **(OR)**
CO4	K5	19b.	Describe the function of position and displacement sensor.
CO5	K5	20a.	Summarize the function of machine vision system. **(OR)**
CO5	K5	20b.	Enumerate the applications of robot vision system.