

Program: BE Computer Engineering

Curriculum Scheme: Revised 2016

Examination: Final Year Semester VII

Course Code: CSDLO7033 and Course Name: Robotics

Time: 1 hour

Max. Marks: 50

Q.1.	Which type of joints are linear with no involvement of rotation?
Option A.	Prismatic
Option B.	Revolute
Option C.	Ball and Socket
Option D.	Hinge
Q.2.	Which company shipped the first PUMA robot to GM?
Option A.	IBM
Option B.	Unimation
Option C.	Cincinnati Milacron
Option D.	Fanuc
Q.3.	Which robot reference frame is used to specify movements of individual joints of the robot?
Option A.	World Reference Frame
Option B.	Joint Reference Frame
Option C.	Tool Reference Frame
Option D.	Kinematic Reference frame
Q.4.	If a frame is not at the origin of the reference frame, its location relative to the reference frame is described by a vector between the origin of the frame and the origin of the _____.
Option A.	Reference Frame
Option B.	Fixed Frame
Option C.	Mobile Frame
Option D.	World Frame
Q.5.	A frame F has been moved 10 units along the y-axis and 5 units along the z-axis of the reference frame. Find the new location of the frame. $\begin{bmatrix} 0.527 & -0.574 & 0.628 & 5 \\ 0.369 & 0.819 & 0.439 & 3 \\ -0.766 & 0 & 0.643 & 8 \\ 0 & 0 & 0 & 0 \end{bmatrix}$
Option A.	$\begin{bmatrix} 0.527 & -0.574 & 0.628 & 5 \\ 0.369 & 0.819 & 0.439 & 8 \\ -0.766 & 0 & 0.643 & 5 \\ 0 & 0 & 0 & 0 \end{bmatrix}$
Option B.	$\begin{bmatrix} 0.527 & -0.574 & 0.628 & 5 \\ 0.369 & 0.819 & 0.439 & 10 \\ -0.766 & 0 & 0.643 & 5 \\ 0 & 0 & 0 & 0 \end{bmatrix}$

Option C.	$\begin{bmatrix} 0.527 & -0.574 & 0.628 & 5 \\ 0.369 & 0.819 & 0.439 & 13 \\ -0.766 & 0 & 0.643 & 13 \\ 0 & 0 & 0 & 0 \end{bmatrix}$
Option D.	$\begin{bmatrix} 0.527 & -0.574 & 0.628 & 5 \\ 0.369 & 0.819 & 0.439 & 3 \\ -0.766 & 0 & 0.643 & 8 \\ 0 & 0 & 0 & 0 \end{bmatrix}$
Q.6.	Which robot reference frame is used to specify movements of individual joints of the robot?
Option A.	World Reference Frame
Option B.	Joint Reference Frame
Option C.	Tool Reference Frame
Option D.	Kinematic Reference frame
Q.7.	How to eliminate the error if a robot is consistently off by 0.05 inches to the right, all desired points can be specified at 0.05 inches to the left
Option A.	Specify desired point 0.05 inches to the left
Option B.	Specify desired point 0.05 inches to the right
Option C.	Error cannot be eliminated
Option D.	Error can only be eliminated by replacing the robot
Q.8.	Which of the following statements is correct?
Option A.	Sensors and actuators are both examples of transducers
Option B.	Actuators and transducers are both examples of sensors
Option C.	Sensors and transducers are both examples of actuators
Option D.	Sensor is not an example of transducer
Q.9.	Inductive proximity sensors can be effective only when the objects are of _____ materials.
Option A.	Paramagnetic
Option B.	Diamagnetic
Option C.	Ferro magnetic
Option D.	Non-Magnetic Material
Q.10.	Which of the following is a passive sensor?
Option A.	IR Sensor
Option B.	Camera without a flash
Option C.	Camera with a flash
Option D.	Ultrasound sensor
Q.11.	Which of the following statements are NOT correct for Field of View (FOV) of a camera?
Option A.	FOV is region of space the camera is intended to cover
Option B.	FOV is measured in degrees
Option C.	FOV of a camera is independent of camera lenses
Option D.	FOV is critical in matching a sensor to an application
Q.12.	----- of behaviour often serve as a basis for reactive robotics systems
Option A.	Cognitive model
Option B.	Mathematical models
Option C.	Human biological model
Option D.	Animal models
Q.13.	Which BUG algorithm uses heuristic function?

Option A.	BUG 0
Option B.	BUG 1
Option C.	BUG 2
Option D.	Tangent BUG
Q.14.	A fundamental analytical tool for solving motion-planning problems in general is -----.
Option A.	Kinematics analysis framework
Option B.	Dynamic analysis framework
Option C.	Configuration-space framework
Option D.	Kinematics and Dynamic analysis framework
Q.15.	The ---- grasp configuration is one which is within the work envelope of the manipulator.
Option A.	Safe
Option B.	Reachable
Option C.	Secure
Option D.	Safe and secure
Q.16.	Which of the following statement is incorrect?
Option A.	Both gross-motion planning and fine-motion planning involve the concept of collisions between parts.
Option B.	For gross-motion planning, the planned path must be validated.
Option C.	For fine-motion planning, trajectories are designed with the objective of causing specific carefully controlled collisions to occur.
Option D.	For fine-motion planning, trajectories are designed with the objective of causing uncontrolled collisions to occur.
Q.17.	Gradient magnitude images are more useful in -----
Option A.	point detection
Option B.	line detection
Option C.	area detection
Option D.	edge detection
Q.18.	The pixel function is defined on the ----- pixels of an image.
Option A.	exterior
Option B.	border
Option C.	interior
Option D.	both interior and border
Q.19.	Boundary descriptors are called -----
Option A.	Line descriptors
Option B.	Area descriptors
Option C.	Volume descriptors
Option D.	Point descriptors
Q.20.	Triangulation is method of measuring ----- of a particular point on an object.
Option A.	length
Option B.	breadth
Option C.	depth
Option D.	height
Q.21.	----- is defined as the process of reducing a fuzzy set into a crisp set or to convert a fuzzy member into a crisp member.
Option A.	Defuzzification
Option B.	Grade Fuzzification
Option C.	Support Fuzzification
Option D.	Fuzzification
Q.22.	A defuzzification unit would be there with FIS to convert fuzzy variables into -----
Option A.	Crisp variables

Option B.	Fuzzy variables
Option C.	1 or 0
Option D.	Any discrete value
Q.23.	Following is not component of expert system:
Option A.	Knowledge Base
Option B.	Inference Engine
Option C.	Decision making unit
Option D.	User Interface
Q.24.	Fuzzy logic is usually represented as -----
Option A.	IF-THEN-ELSE rules
Option B.	IF-THEN rules
Option C.	Both IF-THEN-ELSE rules & IF-THEN rules
Option D.	Action rules
Q.25.	Expert system is an interactive and reliable computer-based decision-making system which uses ----- to solve complex decision-making problems.
Option A.	facts
Option B.	heuristics
Option C.	both facts and heuristics
Option D.	inference rules

Program: BE Computer Engineering

Curriculum Scheme: Revised 2016

Examination: Final Year Semester VII

Course Code: CSDLO7033 and Course Name: Robotics

Time: 1 hour

Max. Marks: 50

Q.1	Option A
Q.2	Option B
Q.3	Option B
Q.4	Option A
Q.5	Option C
Q.6	Option B
Q.7	Option A
Q.8	Option A
Q.9	Option C
Q.10	Option B
Q.11	Option C
Q.12	Option D
Q. 13	Option D
Q.14	Option C
Q.15	Option B
Q.16	Option D
Q.17	Option D
Q.18	Option C
Q.19	Option A
Q.20	Option C
Q.21	Option A
Q.22	Option A
Q.23	Option C
Q.24	Option B
Q.25	Option C