

1 x 15=15



## **BRAINWARE UNIVERSITY**

## **Term End Examination 2023** Programme - Dip.ME-2019 **Course Name – Industrial Robotics and Automation** Course Code - DME604 (Semester VI)

Full Marks: 60 Time: 2:30 Hours [The figure in the margin indicates full marks. Candidates are required to give their answers in their

own words as far as practicable.]

## Group-A

(Multiple Choice Type Question) Choose the correct alternative from the following: (i) Identify Which of the following is NOT one of the advantages for robotics implementation program a) Low costs for hardware and software b) Robots work continuously around the clock c) Quality of manufactured goods can be d) Reduced company cost for worker fringe improved benefits (ii) Which of the following is not application of Robotics? a) Industries b) Military c) Medicine d) Hills (iii) Choose the true option for One-Wattmeter method is used to measure a) The power when load is balance in three b) The power when load is unbalanced in phase circuit three phase circuit c) (1) or (2) d) Single phase power with balanced (iv) Identify the Robot designed with Polar coordinate systems has a) Three linear movements b) Three rotational movements

(v) Identify the robot designed with cylindrical coordinate systems has a) Three linear movements

b) Three rotational movements

c) Two linear and one rotational movement

c) Two linear and one rotational movement

d) Two rotational and one linear movement

d) Two rotational and one linear movement

(vi) Choose the transducers which requires an external power and their output is a measure of some variation such as resistance, inductance, capacitance etc., are called as

a) Active transducer

b) Primary sensor

b) Power

d) Resistance

c) Passive transducer

d) Self generating transducer

(vii) Choose that the Fiber optic sensor can be used to sense

a) Displacement c) Current

(viii)	Determine The resistance of LDRv	when exposed to radiant energy	
(ix)	<ul><li>a) Remains unaltered</li><li>c) Reaches maximum</li><li>Choose the correct option that in a series-</li></ul>	b) Increases d) Decreases type observer	
(1//)	a) zero marking is on the left-hand side b) zero marking is at the centre		
	c) zero marking is on the right-hand side	d) zero marking is at the centre d) zero marking may be either on left o hand side	r right-
(x)	Indicate decision support programs are de		
, ,	a) budget projections	b) visual presentations	
(xi)	c) business decisions Define Robotics is a branch of AI, compose	d) vacation schedules	
(xii)	a) Electrical Engineering b) Mechanical Engineering c) Computer Science d) All of the above xii) What is full form of OCR in tasks of Computer Vision?		
(xiii)	<ul><li>a) Optimum Character Reader</li><li>c) Optimum Castor Reader</li><li>Which of the following is not applicable for</li></ul>	b) Optical Character Reader d) Optical Castor Reader r a type of Robot Locomotion?	
	a) Legged	b) Wheeled	
	c) Tracked deslip	d) Tracked skid	
(xiv)	Identify which of the following is not an estrobots?	ssential components for construction of	
	a) Power Supply	b) Actuators	
	c) Sensors	d) Energy	
(xv)	State which Decision support programs are	e designed to help managers make	
	a) budget projections	b) visual presentations	
	c) business decisions	d) vacation schedules	
		Group-B	
	(Short Ansv	ver Type Questions)	3 x 5=15
2 D	iscuss the Degrees of freedom.		(3)
	3. Describe pay load capacity of robot?		
	ketch a robot and name its parts. Explain vis	sion sensor? [2+1]	(3) (3)
5. Define Pitch, yaw and roll.			(3)
6. What is meant by pay load capacity of robot?			(3)
		OR	
W	/hat is meant by precision of robot? What is	s meant by quality of robot?	(3)
		Group-C	
	(Long Answ	ver Type Questions)	5 x 6=30
7.	Define a robot. With help of sketch describe	e pitch, yaw and roll motion of a robot wrist.	(5)
	0. provide a diagram and criticize the working of an acoustic sensor.		
11.	1. Compare the various attributes of robot with those of human being. Criticize a robot structure with a sketch.		
12.		orward in a straight line for 3 meters, then turn other 2 meters.  OR	n (5)
	Write a program to make the robot move for right, and then move forward to a designate	orward, turn left, move forward again, turn	(5)

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