



قائمة الاسئلة

اختبار النهائي للعام الجامعي 2025/2024-كلية الهندسة :: مقدمة في الروبوتات- كلية الهندسة - قسم الكهرباء- المستوى الخامس - قوى والات-س
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1) From the PEAS that specifying agent are:

a. performance measure b- Deterministic c- Episodic d- Observable e. That all is correct

- 1) + a
2) - b
3) - c
4) - d
5) - e

2) The ODESA that are determining the environment is:

a. Static b. Environment c. Episodic d. Sensors e- a, b,c f. That all is correct

- 1) - a
2) - b
3) + c
4) - d
5) - e
6) - f

3) To move the mobile robot, we are need:

a. Sensing b. control c. dynamics d. rigid body. e- That all is wrong f. That all is correct

- 1) - a
2) - b
3) - c
4) - d
5) - e
6) + f

4) The internal state sensors for mobile robotics are:

a. camera b- GPS c- Laser d- Sonar e- a, b f. That all is correct

- 1) + a
2) - b
3) - c
4) - d
5) - e
6) - f

5) The external state sensors for mobile robotics are:

a. Gyroscope b- Accelerometers c- Laser e- Sonar f. That all is correct

- 1) - a
2) - b
3) - c
4) + e
5) - f





6) The basic building blocks for robot control is contains:

- a. State b- Dynamics c- input d- control e- a, b, c f. That all is correct

- 1) - a
2) - b
3) - c
4) - d
5) + e
6) - f

7) The wheeled mobile robots are combination with physical and computational components:

- a. process b. Locomotion c. Quantity of actions d. That all is correct

- 1) - a
2) + b
3) - c
4) - d

8) From the robot wheel parameters:

- a. Fixed b- Locomotion c- position d. steering angular e- a, b f. That all is correct

- 1) - a
2) - b
3) + c
4) - d
5) - e
6) - f

9) From the wheel types of mobile robot are:

- a. wheel radius b. Centered orientable c. position d. a, b e. That all is correct

- 1) - a
2) + b
3) - c
4) - d
5) - e

10) The types of driving for mobile robot are:

- a. differential b. steered c. synchronous d. car drive e. That all is correct

- 1) - a
2) - b
3) - c
4) - d
5) + e

11) The straight motion in motion control for mobile robot is got when:

- a. $R = \infty$ b. $R = 0$ c. $V_R = V_L$ d. $V_R = -V_L$ e. b,d f. a,c

- 1) - a





- 2) - b
- 3) - c
- 4) - d
- 5) - e
- 6) + f

12) The rotational motion in motion control for mobile robot is got when:

- a. $R = \text{infinity}$ b. $R=0$ c. $V_R = V_L$ d. $V_R = -V_L$ e. b,d f. a,c

- 1) - a
- 2) - b
- 3) - c
- 4) - d
- 5) + e
- 6) - f

13) The environment world for mobile robot consists of:

- a. Obstacles b. Free space c. Things d. body e. c, d f. a,b

- 1) - a
- 2) - b
- 3) - c
- 4) - d
- 5) - e
- 6) + f

14) Omni- directional is one type from:

- a. steering b. mobility c. Landmark d. geometric description

- 1) + a
- 2) - b
- 3) - c
- 4) - d

15) The world space for mobile robotics is contained:

- a. state vector b. control vector c. obstacles d. geometric description

- 1) - a
- 2) - b
- 3) + c
- 4) - d

16) The motion planning methods consisting of the:

- a. state vector b. control vector c. an observation d. geometric description

- 1) - a
- 2) - b
- 3) - c
- 4) + d

17)





The goal location in potential field generates:

- a. repulsive potential b. an attractive potential c. pules potential d. that all is correct

- 1) - a
2) + b
3) - c
4) - d

- 18) From the vehicle robot the DC Gear head motor capable of accelerating a 12Kg, two-wheel drive robot with wheel diameters of 20 cm at a rate of $2m/s^2$. Top speed will be around $4m/s$, $J_w=30 \times 10^{-6} kg.m$

The required wheel RPM is :

- a. 191 rpm b. 382 rps
c. 380rpm d. 382rpm e. that all is wrong



- 1) - a
2) + b
3) - c
4) - d
5) - e

- 19) From the vehicle robot the DC Gear head motor capable of accelerating a 12Kg, two-wheel drive robot with wheel diameters of 20 cm at a rate of $2m/s^2$. Top speed will be around $4m/s$, $J_w=30 \times 10^{-6} kg.m$

The Linear acceleration is :

- a. $10 rad/s^2$ b. $25 rad/s^2$
c. $20 rad/s^2$ d. $12 rad/s^2$ e. that all is wrong



- 1) - a
2) - b
3) + c
4) - d
5) - e

- 20) From the vehicle robot the DC Gear head motor capable of accelerating a 12Kg, two-wheel drive robot with wheel diameters of 20 cm at a rate of $2m/s^2$. Top speed will be around $4m/s$, $J_w=30 \times 10^{-6} kg.m$

The Required Wheel Torque is:

- a. 0.6006 N. ft b. 0.30003 N. ft
c. 0.30003 N. m d. 0.6006 N.m e. that all is wrong



- 1) - a
2) - b
3) - c
4) + d
5) - e

- 21) The torque at any operation point from DC Motor Characteristics is:

- a. $\tau_m = \omega \tau_s / \omega_{NL}$ b. $\tau_m = \tau_s - \omega \tau_s / \omega_{NL}$ c. $\tau_m = \omega_{NL} / \omega \tau_s$ e. that all is wrong





- 1) - a
- 2) b
- 3) - c
- 4) - e

22) The angle of rotation of the leadscrew is given by:

- a. $A = n_p \Theta$ b. $n_p = 360/p\Theta$ c. $S = PA/360$ d. $N = 60 f_p/ns$

- 1) a
- 2) - b
- 3) - c
- 4) - e

23) The movement of the table in response to the rotation of the lead screw is calculated by:

- a. $A = n_p \Theta$ b. $n_p = 360/p\Theta$ c. $S = PA/360$ e. $N = 60 f_p/ns$

- 1) - a
- 2) - b
- 3) c
- 4) - e

24) The number of pulses required to move a predetermined position can be found by:

- a. $A = n_p \Theta$ b. $n_p = 360/p\Theta$ c. $S = PA/360$ e. $N = 60 f_p/ns$

- 1) - a
- 2) b
- 3) - c
- 4) - e

25) The Rotational Speed The pulses are transmitted at a certain frequency is given by:

- a. $A = n_p \Theta$ b. $n_p = 360/p\Theta$ c. $S = PA/360$ e. $N = 60 f_p/ns$

- 1) a
- 2) - b
- 3) - c
- 4) - e

