Unit 5 - Sensors and protocols for next generation automobiles

Week 3 Assessment

The due date for submitting this assignment has passed.
As per our records you have not submitted this assignment.

Due on 2019-02-20, 23:59 IST.

1) In which of the following conditions the Platoon can be dissolved? *1 point*

- Leader leaves, Platoon size < 3
- Follower leaves, Followers > 1
- Leader Leaves, Platoon size > 2
- All Followers leave, Platoon size=1

No, the answer is incorrect.
Score: 0

Accepted Answers:
All Followers leave, Platoon size=1

2) In the Scanse LIDAR shown in the video lecture, the typical signal strength range is, *1 point*

- Between 0-255
- Between 0-183
- Between 50-191
- Between 0-225

No, the answer is incorrect.
Score: 0

Accepted Answers:
Between 0-255

3) In the VREP wireless demo example given in lecture "Building smart vehicle for collision avoidance") what will happen if the robots are equidistant from the intersection and moving towards each other in the following setup. Speed v0 = 2, R1x = 1.25, R1y = -1.25, R1z = 0.138, R2x = 0.25 , R2y = 0.25, R2z = 0.138? *1 point*

- Robots collide with each other.
- Robots move without collision and without stopping.
- Both the Robots will stop.
- One Robot will stop and the other will move forward.

No, the answer is incorrect.
Score: 0

Accepted Answers:
One Robot will stop and the other will move forward.

4) In LiDAR demonstration, at what safe distance from obstacle the robotic platform will take a turn, *1 point*

- 400 mm
- 4 mm
- 41 mm
- 0.16 mm

No, the answer is incorrect.
Score: 0

Accepted Answers:
400 mm

5) Which can be the SENSE – ACT coupling of Braitenberg implementation for robot to avoid obstacles. Consider the robot is equipped with two sensors Right and Left and two motors right- left Motors. *1 point*

- Right sensor to left motor and right motor to left sensors
- Left sensor to right motor and right sensors to right motor
- Right sensor to right motor and left sensor to left motor
- None of the Above

No, the answer is incorrect.
Score: 0

Accepted Answers:
Right sensor to right motor and left sensor to left motor

6) Which of the below combination would make the robot to always turn right? *1 point*

- Left wheel motor speed is lesser than Right wheel motor speed
- Right wheel motor speed is greater than Left wheel motor speed
- Left wheel motor speed is greater than Right wheel motor speed
- Left wheel motor speed is same as Right wheel motor speed

No, the answer is incorrect.
Score: 0

Accepted Answers:
Left wheel motor speed is greater than Right wheel motor speed

7) In the wireless communication example script given in lecture "Building smart vehicle for collision avoidance"; who is the child script? *1 point*

- Pioneer_p3dx script

Accepted Answers:
Transceiver script

8) In the VREP demo example given in lecture "Building smart vehicle for collision avoidance" what is the behaviour of robot if right and left side sensors are connected to Left motor. *1 point*

- Robot will follow the obstacle
- Robot will move away from obstacle
- Robot will turn left if obstacle is found on the right side
- Robot will turn right

No, the answer is incorrect.
Score: 0

Accepted Answers:
Robot will turn right

9) In the sequence of edge detection, during hysteresis thresholding, which one of the following is a major classification step. *1 point*

- Edge thickness
- Intensity gradient
- Both a and b
- None of the above

No, the answer is incorrect.
Score: 0

Accepted Answers:
Intensity gradient

10) How to find a line from image of edges? *1 point*

- Find the edges having required thickness
- Find the number of intersections
- Both a and b
- None of the above

No, the answer is incorrect.
Score: 0

Accepted Answers:
Find the number of intersections

11) Which of the following vehicle capabilities define an inter-vehicle distance in platoon? *1 point*

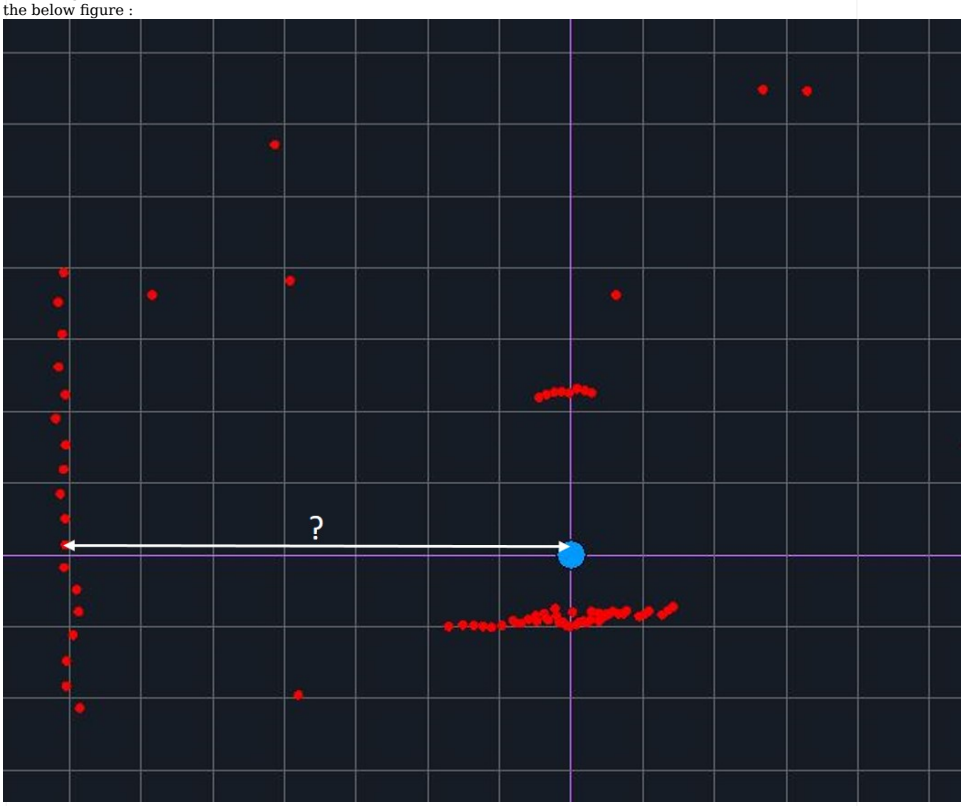
A.Wireless range
B.Braking ability
C.Stopping distance

- Both B and C
- Only A
- Both A and C
- Only B

No, the answer is incorrect.
Score: 0

Accepted Answers:
Both A and C

12) Using sweep visualizer and data points determine the distance between LiDAR and wall , as shown in the below figure : *1 point*



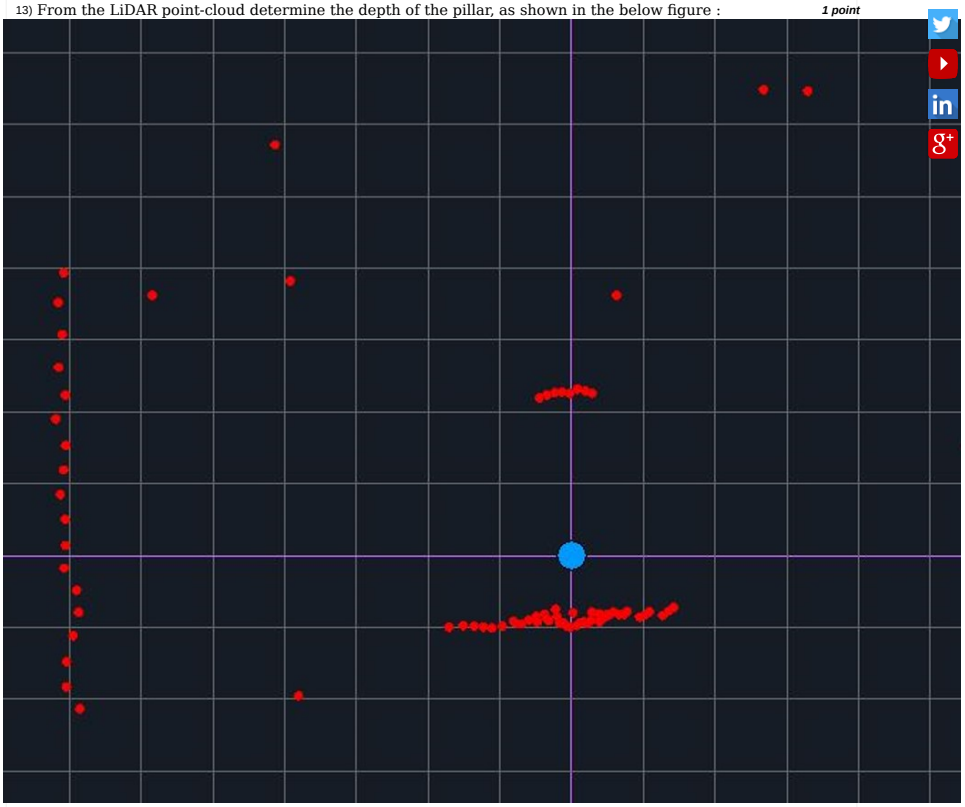
- 175 - 225 cms

650 - 750 cms
180 - 240 cms
325 - 375 cms

No, the answer is incorrect.
Score: 0

Accepted Answers:
325 - 375 cms

13) From the LiDAR point-cloud determine the depth of the pillar, as shown in the below figure : *1 point*



25 - 50 cms
100 - 175 cms
50 - 75 cms
30 - 45 cms

No, the answer is incorrect.
Score: 0

Accepted Answers:
50 - 75 cms

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