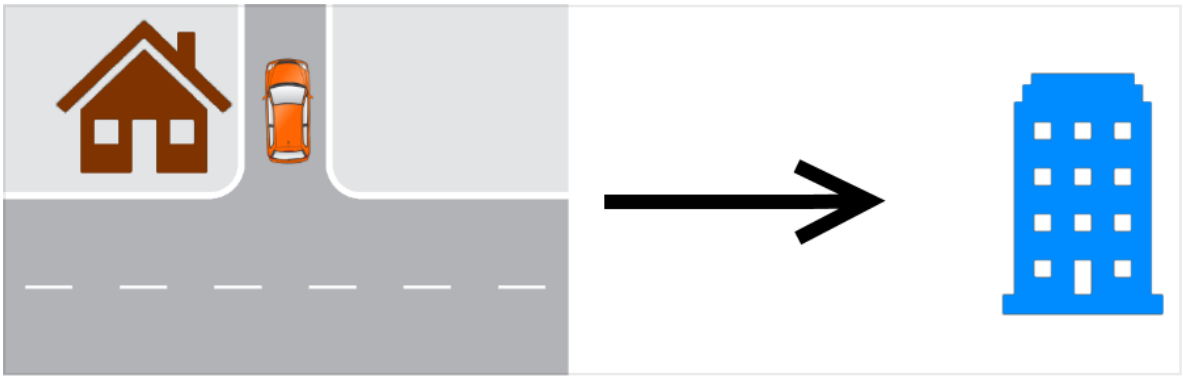
1.

Question 1

Scenario 1: You're at home and need to drive to work



During the trip, you will be performing OEDR tasks. Of the tasks below, which of the following is **not** an example of OEDR?

1 / 1 point

Slowing down when seeing a construction zone ahead

Pulling over upon hearing sirens

Maintaining a distance to a vehicle ahead

Stopping at a red light

Correct

Correct! Maintaining distance is not a detection and reaction procedure, it is a normal driving behavior.

2.

Question 2

Which of the following tasks are associated with **perception**?

1 / 1 point

Responding to traffic lights

Identifying road signs

Correct
Correct! Identifying road signs are associated with perception

Planning routes on a map

Estimating the motion of other vehicles

Correct
Correct! Estimating the motion of other vehicles is associated with perception
3.

Question 3

Before leaving, you decide to check the weather. The forecast states that over the next few days there will be both sun and rain along with some fog. Assuming your vehicle exhibits Level 5 autonomy, which of the following **weather conditions** can your vehicle operate?
1 / 1 point

Clear and sunny

Windy heavy rainfall

Heavy Fog

Light rainfall

All of the above

Correct
Correct! Level 5 autonomy can operate in any weather condition.
4.

Question 4

You enter your autonomous vehicle and it drives your usual route to work. While the vehicle is driving, you decide to take a nap. For **which levels of autonomy** is this safe? (Select all that apply)
1 / 1 point

1

2

3

4

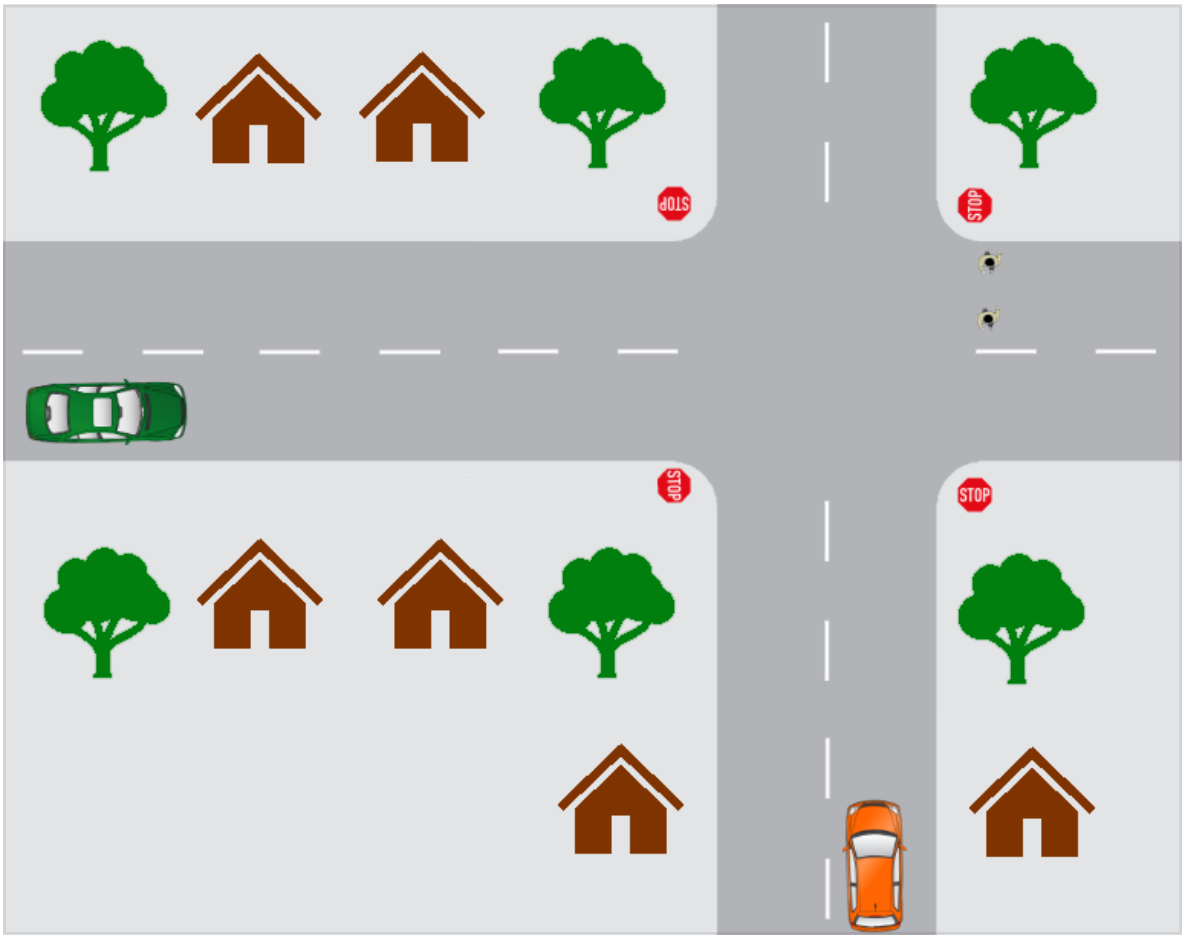
Correct
Correct! Only level 4 and 5 autonomy can handle emergencies autonomously.

5

Correct
Correct! Only level 4 and 5 autonomy can handle emergencies autonomously.
5.

Question 5

Scenario 2: (Assume the car is driving on the right-hand side of the road) . You're approaching an all ways stop sign and you want to make a right turn. Your vehicle is denoted in orange. There are 2 pedestrians currently crossing and another vehicle (denoted in green) approaching the stop sign from the left.



This task involves multiple considerations, which of them are **predictive planning**? Select all that apply.
0.5 / 1 point

The green car arrives at the stop sign after you and plans to travel straight through the intersection. You choose to move first.

Wait for the pedestrians to finish crossing before turning

Correct
Correct! Predictive planning deals with planning based on predictions of the actions of others.

Gradually decelerate while reaching the stop sign

This should not be selected
Incorrect. Please review planning in lecture 3 on Driving Decisions and Actions.

At a stop sign, stop and look both ways before proceeding
6.

Question 6

Here are some rules for driving at a stop sign. Which of the following is an appropriate **priority ranking**?
1) For non all-way stop signs, stop at a point where you can see oncoming traffic without blocking the intersection
2) If there are pedestrians crossing, stop until they have crossed
3) If you reach a stop sign before another vehicle, you should move first if safe
1 / 1 point

1, 2, 3

3, 2, 1

2, 1, 3

3, 1, 2

1, 3, 2

Correct
Correct! Prioritize safety.
7.

Question 7

Which of the following are **off-road objects**? (Select all that apply)
0.8 / 1 point

Trees

Correct
Correct! These are examples of off road objects.

Pedestrians

Road markings

Stop signs

Correct
Correct! These are examples of off road objects.

Curbs
You didn’t select all the correct answers
8.
Question 8
Suppose your vehicle has **lane keeping assistance**, which of these objects are relevant for its performance? (Select all that apply)
1 / 1 point

Curbs

Correct
Correct! Detecting road marks and curbs are needed for lane keeping.

Road markings

Correct
Correct! Detecting road markings and curbs are needed for lane keeping.

Trees

Stop signs

Pedestrians
9.
Question 9
Which of the following sensors are used for the **lane keeping assistance**? (Select all that apply)
0.8 / 1 point

LIDAR

Correct
Correct! Detection and localization is needed for lane keeping.

GPS

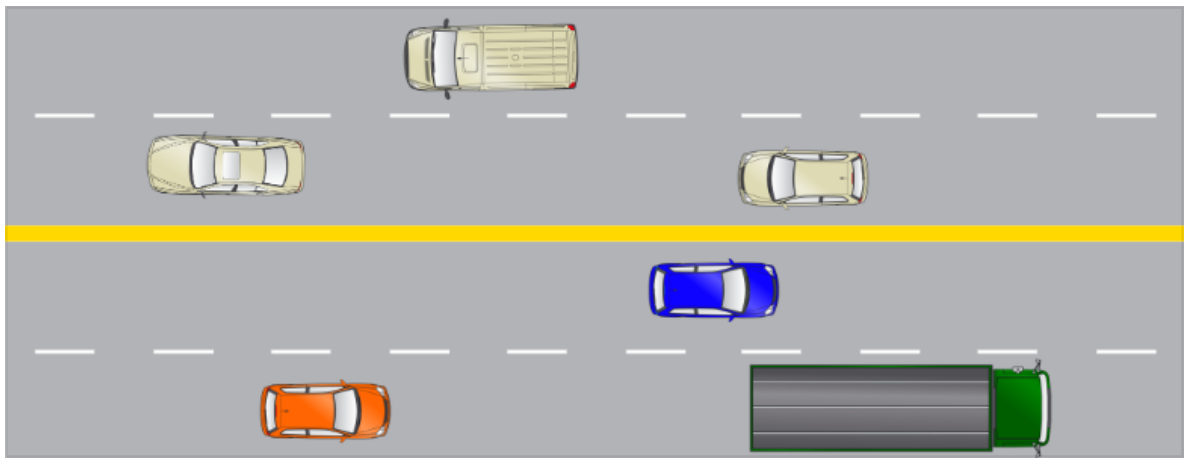
Correct
Correct! Detection and localization is needed for lane keeping.

Cameras

Correct
Correct! Detection and localization is needed for lane keeping.

IMU

Barometers
You didn't select all the correct answers
10.
Question 10
Scenario 3: You are on the highway and you see a truck in front of you. Assume the car is driving on the right-hand side of the road. There is also a blue car beside the truck in the other lane.



Your vehicle follows the truck and maintains a constant distance away. What kind of **control** is this?
1 / 1 point

OEDR

Longitudinal

Fallback

Lateral

Correct
Correct! Distance keeping is a longitudinal control problem.
11.
Question 11
You decide to **change lanes** to pass a truck. What kind of decision is this?
0 / 1 point

Long term planning

Immediate

Rule-based planning

Reactive

Short term planning

Incorrect
Incorrect. Please review decision making in lecture 3 on Driving Decisions and Actions.
12.
Question 12
Which of the following tasks are **rule-based planning**? (Select all that apply)
1 / 1 point

If there are vehicles directly beside us on the lane, it is unsafe to lane change.

Correct
Correct! Rule based planning only considers the present state, not what vehicles will do next.

If the vehicle in front is going to slow down sharply, then avoid performing a lane change.

During a lane change, maintain our current speed or accelerate slightly

Correct
Correct! Rule based planning only considers the present state, not what vehicles will do next.
13.

Question 13

Suppose the blue vehicle suddenly brakes and you decide to abort the lane change. If your vehicle can **respond automatically and remain in its own lane**, what is the minimum level of autonomy of your vehicle?
1 / 1 point

2

4

5

1

3

Correct
Correct! Level 3 autonomy can perform OEDR.
14.

Question 14

The blue vehicle returns to normal speed and you can now safely change lanes. Your car is **performing the lane change**, what kind of control is this?

0 / 1 point

OEDR

Fallback

Longitudinal

Lateral

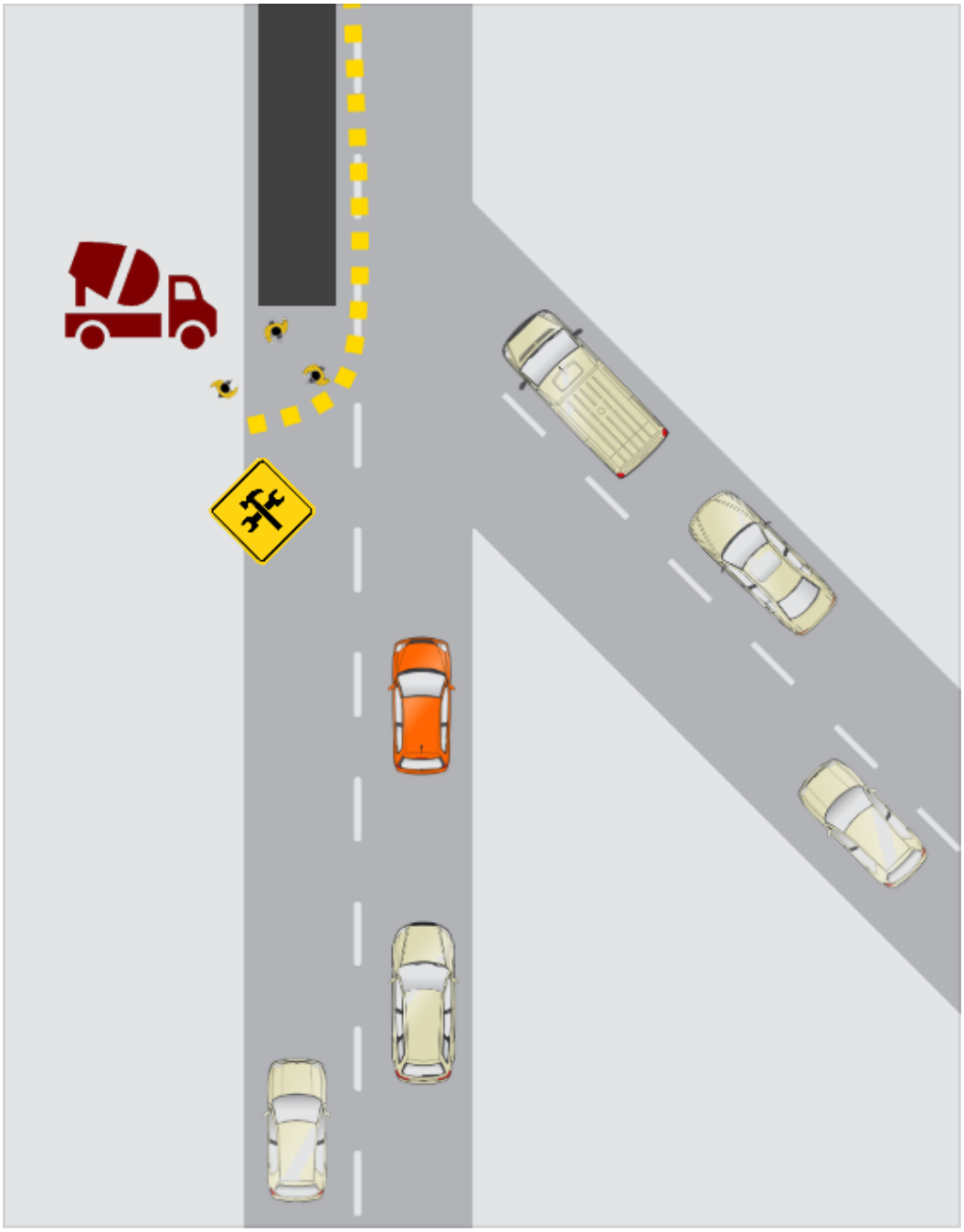
Incorrect

Incorrect. Please review types of control in lecture 1 on Taxonomy of Driving Automation.

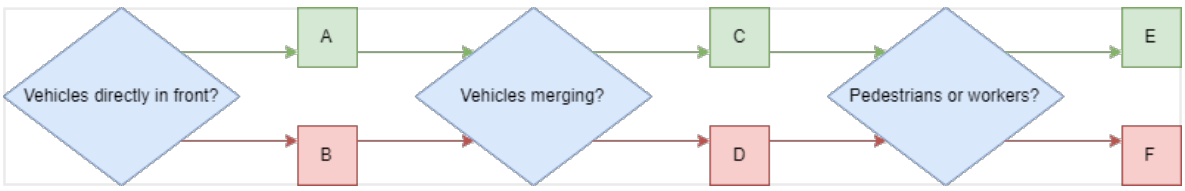
15.

Question 15

Scenario 4: You are almost at work but encounter a construction site. Assume the car is driving on the right-hand side of the road. Your vehicle is denoted in orange.



You see a construction site where the workers are repaving a road full of potholes. They are using jackhammers which can cause dust clouds.
You create the following decision tree for getting through the construction site.
From the diagram, which of the following decisions should you make? **(green is true, red is false)**



0.3333333333333333 / 1 point

A (True)

This should not be selected
Incorrect. The orange vehicle does not have a vehicle in front of it.

B (False)

C (True)

D (False)

E (True)

F (False)
16.
Question 16
Here are a set of rules for making these decisions, **arrange them in an appropriate prioritization**.
1) If there are no vehicles ahead, accelerate to the speed limit
2) Drive slowly in construction zones
3) If there are pedestrians or workers directly ahead in the current lane, stop
4) Yield to merging vehicles, if necessary

1 / 1 point

1, 2, 3, 4

2, 3, 4, 1

3, 4, 1, 2

3, 4, 2, 1

Correct
Correct! Prioritize safety in each case, yielding to pedestrians and then vehicles first, before defining acceptable travel speed.
17.
Question 17
Scenario 5: You're finished work and need to drive back home, but it's nighttime.

You plan a new path home on your GPS application to avoid the construction site, **what type of planning is this**?
1 / 1 point

Short term planning

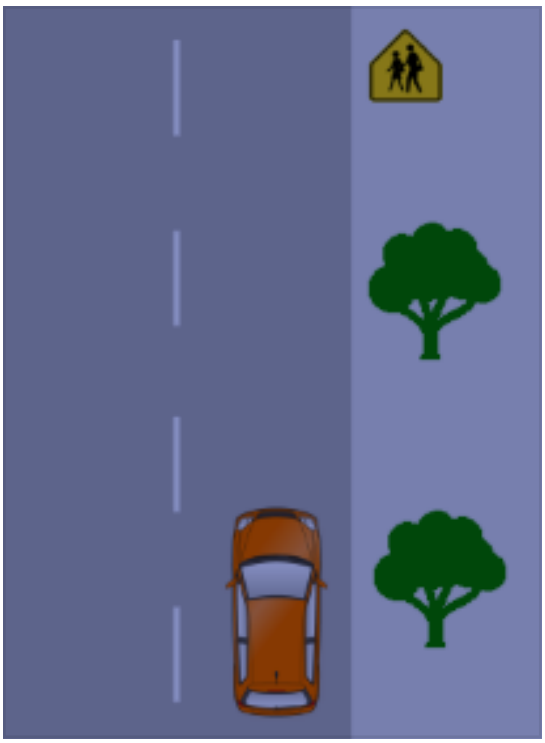
Long term planning

Reactive

Rule based planning

Immediate

Correct
Correct! Setting a path before driving is long term planning.
18.
Question 18
Your new path goes through a school zone and you see the school zone sign. You decide to slow down despite there being no pedestrians or children (it's nighttime). What sort of **planning** is this?



1 / 1 point

Reactive planning

Rule based planning

Short term planning

Immediate planning

Long term planning

Correct
Correct! The rule to slow down in school zones is being followed.