|  |  |  |  |  |
| --- | --- | --- | --- | --- |
| Task. No.: | 1 | Points: | 1 | **One answer is correct.** |

|  |
| --- |
| What is the output of the following code in MATLAB? |

|  |  |  |
| --- | --- | --- |
| A |  | Opens a window for Simulink |
| B |  | Closes MATLAB |
| C |  | Opens Simulink and closes MATLAB |
| D |  | Error |
| E |  |  |

|  |
| --- |
| simlink; |

|  |  |  |  |  |
| --- | --- | --- | --- | --- |
| Task. No.: | 2 | Points: | 1 | **One answer is correct.** |

|  |
| --- |
| When does the ramp function start in the following block? |

|  |  |  |
| --- | --- | --- |
| A |  | At t=0 |
| B |  | User specified time |
| C |  | At t=1 |
| D |  | Just after t=0 |
| E |  |  |

|  |
| --- |
| Ramp |

|  |  |  |  |  |
| --- | --- | --- | --- | --- |
| Task. No.: | 3 | Points: | 1 | **One answer is correct.** |

|  |
| --- |
| Which waveform is not produced by the above block? |

|  |  |  |
| --- | --- | --- |
| A |  | Cosine |
| B |  | Tangent |
| C |  | Square |
| D |  | Sawtooth |
| E |  | ramp |

|  |
| --- |
| Signal Generator |

|  |  |  |  |  |
| --- | --- | --- | --- | --- |
| Task. No.: | 4 | Points: | 1 | **One answer is correct.** |

|  |
| --- |
| Which of the following is True about Simulink? |

|  |  |  |  |
| --- | --- | --- | --- |
| A |  | It is a MATLAB-based graphical programming environment |  |
| B |  | It is suitable for modeling, simulating and analyzing dynamical systems. |  |
| C |  | Its primary interface is a graphical block diagramming tool. |  |
| D |  | Users can define their set of block libraries. |  |
| E |  | All of the above. |  |

|  |
| --- |
|  |

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| --- | --- | --- | --- | --- |
| Task. No.: | 5 | Points: | 1 | **One answer is correct.** |

|  |
| --- |
| What does the following toolbox do? |

|  |  |  |
| --- | --- | --- |
| A |  | Calculates z transform |
| B |  | Verifies circuit modelling |
| C |  | Plots bode plots |
| D |  | Calculates Fourier transform |
| E |  |  |

|  |
| --- |
| Simulink Control Design |

|  |  |  |  |  |
| --- | --- | --- | --- | --- |
| Task. No.: | 6 | Points: | 1 | **One answer is correct.** |

|  |
| --- |
| What does the following block show? |

|  |  |  |
| --- | --- | --- |
| A |  | The maximum value of a signal |
| B |  | The minimum value of a signal |
| C |  | The final value of a signal |
| D |  | The rms of a signal |
| E |  | The absolute value of a signal |

|  |
| --- |
| Display |

|  |  |  |  |  |
| --- | --- | --- | --- | --- |
| Task. No.: | 7 | Points: | 1 | **One answer is correct.** |

|  |
| --- |
| What does the following block do? |

|  |  |  |
| --- | --- | --- |
| A |  | Add a AC value to the input |
| B |  | Add a DC value to the signal |
| C |  | Add a noise to the signal |
| D |  | Add a white noise to the signal |
| E |  |  |

|  |
| --- |
| Within the box u+0.0 and underneath is Bias |

|  |  |  |  |  |
| --- | --- | --- | --- | --- |
| Task. No.: | 8 | Points: | 1 | **One answer is correct.** |

|  |
| --- |
| What does the following block do? |

|  |  |  |
| --- | --- | --- |
| A |  | Add a delay to the signal in frequency domain |
| B |  | Advance the signal in frequency domain |
| C |  | Shifts the signal in frequency domain |
| D |  | Gives an output as the function of the input |
| E |  |  |

|  |
| --- |
| Within the box f(u) and underneath is Fcn |

|  |  |  |  |  |
| --- | --- | --- | --- | --- |
| Task. No.: | 9 | Points: | 1 | **One answer is correct.** |

|  |
| --- |
| What is the name of the given block? |

|  |  |  |
| --- | --- | --- |
| A |  | z-domain |
| B |  | Laplacian domain |
| C |  | Fourier domain |
| D |  | no domain |
| E |  |  |

|  |
| --- |
| Within the box1/(s+1) and underneath is Transfer Fcn |

|  |  |  |  |  |
| --- | --- | --- | --- | --- |
| Task. No.: | 10 | Points: | 1 | **One answer is correct.** |

|  |
| --- |
| What is the function of the following block? |

|  |  |  |
| --- | --- | --- |
| A |  | Gives a 1 if the input is negative |
| B |  | Gives a 0 if input is negative |
| C |  | Gives a 1 if input is positive |
| D |  | Gives a 0 if input is positive |
| E |  |  |

|  |
| --- |
| Sign |

|  |  |  |  |  |
| --- | --- | --- | --- | --- |
| Task. No.: | 11 | Points: | 1 | **One answer is correct.** |

|  |
| --- |
| How many sinusoids can this block generate simultaneously? |

|  |  |  |
| --- | --- | --- |
| A |  | Only 1 |
| B |  | Multiple |
| C |  | Only 1 at high frequency |
| D |  | Multiple with multiple frequency |
| E |  |  |

|  |
| --- |
| Within the box DSP and underneath is Sine Wave |

|  |  |  |  |  |
| --- | --- | --- | --- | --- |
| Task. No.: | 12 | Points: | 1 | **One answer is correct.** |

|  |
| --- |
| What is the value of the constant supplied by the block? |

|  |  |  |
| --- | --- | --- |
| A |  | 1 |
| B |  | 0 |
| C |  | User defined |
| D |  | Not available in MATLAB |
| E |  |  |

|  |
| --- |
| Within the box 1 and underneath is Constant |

|  |  |  |  |  |
| --- | --- | --- | --- | --- |
| Task. No.: | 13 | Points: | 1 | **One answer is correct.** |

|  |
| --- |
| This block can be used in what kind of systems? |

|  |  |  |
| --- | --- | --- |
| A |  | Logical |
| B |  | Continuous |
| C |  | Discrete |
| D |  | Any |
| E |  |  |

|  |
| --- |
| Within the box Less than or equal too and underneath is Relational Operator |

|  |  |  |  |  |
| --- | --- | --- | --- | --- |
| Task. No.: | 14 | Points: | 1 | **One answer is correct.** |

|  |
| --- |
| What does this suggest? |

|  |  |  |
| --- | --- | --- |
| A |  | The slope of the ramp function is 0 |
| B |  | The slope of the ramp function is -1 |
| C |  | The slope of the ramp function is 1 |
| D |  | The value of the step function is 0 |
| E |  |  |

|  |
| --- |
| A Step and  Ramp pointing to an XY Graph |

|  |  |  |  |  |
| --- | --- | --- | --- | --- |
| Task. No.: | 15 | Points: | 1 | **One answer is correct.** |

|  |
| --- |
| This module can be used in what kind of application? |

|  |  |  |
| --- | --- | --- |
| A |  | 360 vision |
| B |  | Autonomous driving |
| C |  | Manual driving |
| D |  | RGB image capturing |
| E |  | Point cloud generation |

|  |
| --- |
| Capture images points to Stitch images if all are new and both point to display if stitched.  Underneath is Monitor Timing. |

|  |  |  |  |  |
| --- | --- | --- | --- | --- |
| Task. No.: | 16 | Points: | 1 | **One answer is correct.** |

|  |
| --- |
| What does this subsystem do? |

|  |  |  |
| --- | --- | --- |
| A |  | It calculates an obstacle distance based on a steering angle command and a source depth image. |
| B |  | It determines the desired heading angle to avoid car collision with an obstacle. |
| C |  | It scales RGB Image with mask of the lane currently being tracked |
| D |  | It calculates the average distance value of an object within a region of interest. |
| E |  |  |

|  |
| --- |
| A complicated system composed of many interactions. |

|  |  |  |  |  |
| --- | --- | --- | --- | --- |
| Task. No.: | 17 | Points: | 1 | **One answer is correct.** |

|  |
| --- |
| What is the use of this graph? |

|  |  |  |
| --- | --- | --- |
| A |  | 360 views |
| B |  | Lidar point cloud |
| C |  | Line tracking |
| D |  | Manual driving |
| E |  |  |

|  |
| --- |
| A 360 degree circle with every 30 degrees marked off.  Concentric to the centre of the circle are circles marked with 0.2, 0.4, 0.6, 0.8, and 1 (moving outwards from the centre). |

|  |  |  |  |  |
| --- | --- | --- | --- | --- |
| Task. No.: | 18 | Points: | 1 | **One answer is correct.** |

|  |
| --- |
| This subsystem can be used for…. |

|  |  |  |
| --- | --- | --- |
| A |  | Line detection |
| B |  | Video compression |
| C |  | Stop sign detection |
| D |  | Vehicular communication |
| E |  |  |

|  |
| --- |
| A complicated circuit for detecting red road signs. |

|  |  |  |  |  |
| --- | --- | --- | --- | --- |
| Task. No.: | 19 | Points: | 1 | **One answer is correct.** |

|  |
| --- |
| How can we connect to the QCar? |

|  |  |  |
| --- | --- | --- |
| A |  | Directly (with wires) |
| B |  | Wireless |
| C |  | Both remotely and with cables |
| D |  | Via Internet |
| E |  |  |

|  |
| --- |
| QCar |

|  |  |  |  |  |
| --- | --- | --- | --- | --- |
| Task. No.: | 20 | Points: | 1 | **One answer is correct.** |

|  |
| --- |
| What is the use of Putty? |

|  |  |  |
| --- | --- | --- |
| A |  | Transferring files |
| B |  | having a virtual display |
| C |  | Having remote terminal |
| D |  | Having remote desktop |
| E |  |  |

|  |
| --- |
| PuTTY Configuration screen |

|  |  |  |  |  |
| --- | --- | --- | --- | --- |
| Task. No.: | 21 | Points: | 1 |  |

|  |
| --- |
| What is the name of this image? |

|  |  |  |
| --- | --- | --- |
| A |  | RGBD camera |
| B |  | 3D-camera |
| C |  | LIDAR |
| D |  | IMU |
| E |  |  |

|  |
| --- |
| Sensor |

|  |  |  |  |  |
| --- | --- | --- | --- | --- |
| Task. No.: | 22 | Points: | 1 |  |

|  |
| --- |
| What is the name of this image? |

|  |  |  |
| --- | --- | --- |
| A |  | RGBD camera |
| B |  | 3D-camera |
| C |  | LIDAR |
| D |  | IMU |
| E |  |  |

|  |
| --- |
| Sensor with multiple lenses |

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