Test №3

TOTAL POINTS 15

1. Choose the correct statements about PWM — 1 point

- [ ] PWM allows us to change pin voltage smoothly
- [x] We can regulate device function parameters connected to the PWM line by imitating the voltage change with duty cycle change
- [ ] Arduino can create PWM on all pins except the pins marked with tilde (~)
- [x] Arduino can create PWM on pins marked with tilde (~)
- [x] PWM signal has constant frequency
- [ ] We can regulate device function parameters connected to the PWM line by sending encoded message to the built-in controller

2. Which statements are associated with analogWrite() function? — 1 point

- [ ] It takes a PWM supporting pin number as the sole parameter

- [ ] It returns a PWM signal duty cycle
- [x] It returns no value
- [x] It takes two parameters: a PWM supporting pin number, and duty cycle ranging 0 to 255

3. Which analog input data noise statements are correct? 1 point

- [x] Noise can appear due to some sensor errors
- [ ] Noise appears exclusively in digital input signals
- [x] Noise can appear due to wire interferences on the wire connecting the sensor to the device
- [ ] Noise helps to make signal more precise

4. What is a moving average? 1 point

- ( ) Average of all the measurements except the last one
- (•) Average of the last n measurements, and it changes as new measurements are done
- ( ) Average of all the measurements

5. Choose statements associated with arrays > 1 point

- [x] An array consists of elements that can be accessed by their index
- [x] You can assign values to the elements like this {1, 2, 3}
- [x] Array elements indexing begins with 0
- [x] You can specify array size when you declare it
- [x] An array has name
- [ ] Array elements indexing begins with 1
- [x] Data in an array share the same data type, e.g. boolean

6. Choose the correct array access 1 point

- [x] array [func()]
- [x] array [too(0)]
- [ ] array []
- [ ] array [-1]

7. What do you have to do to declare a function? 1 point

- [x] Name it
- [x] Create code that function will execute
- [x] Specify return value type
- [x] Specify parameters that function is going to accept, and their type
- [x] Specify return value if needed

8. In which functions variable declared in loop() will be available? 1 point

- ( ) Anywhere
- ( ) In all the functions we call in loop()
- (•) In loop() only
- ( ) *In loop()* and *setup ()*

9. What keyword void is used for? 1 point

- (•) To declare a function that returns nothing
- ( ) To return a value calculated by function

- ○ To declare a function that can return any value type
- ○ To create a global function
- ○ To call a function

10. Which statement about while() is correct? 1 point

- ○ Loop code is executed until expression in round brackets is calculated
- ○ Loop code is executed until boolean expression in round brackets is true
- ○ Loop code is executed as many times as was calculated by the expression in round brackets
- ◉ Loop code is executed while boolean expression in round brackets is true

11. Choose the correct statements about the ultrasonic distance sensor HC-SR04 1 point

- ☑ The output impulse length is proportional to the range to an obstacle
- ☐ It can't measure the distance to black objects
- ☑ It receives acoustic waves
- ☐ It receives infrared radiation
- ☐ It generates acoustic waves

- [x] The output voltage is proportional to the range to an obstacle
- [x] It allows us to measure the distance with the acoustic wave return time

12. Which statements are associated with a servomotor? 1 point

- [x] It holds the position loaded within the working range
- [ ] It can be controlled with an analog signal only
- [x] It has an electronic control board
- [x] It's controlled with impulse length
- [x] It allows us to control its position

13. Choose the correct statements about servo controlling with Arduino. 1 point

- [x] You can use built-in Servo library
- [x] You can't use pinMode() while you work with servo
- [x] We can specify the servo position with write() method

- [x] You can use attach() method to begin work with servo
- [x] You have to write code to control the impulse length in order to control the servo
- [x] You have to create a servo type object to use the library

14. Choose the correct statements about constrain() function using 1 point

- [x] It returns value no more and no less than two values specified as parameters
- [x] It's good to use it before calling map()
- [x] It takes initial value as parameter
- [ ] It returns a random value within the specified range
- [x] It returns the initial value if it falls within the range between the minimum and the maximum
- [x] It takes minimum output value as parameter
- [x] It takes maximum output value as parameter

15. Which lines are used with I2C? 1 point

- [ ] MOSI
- [ ] TX
- [ ] SCK
- [x] SCL
- [x] SDA
- [ ] MISO
- [ ] RX