Test №4

TOTAL POINTS 10

1. Why can't we power the pump from Arduino's digital pin? 1 point

- [ ] The pump supply voltage is different from Arduino's supply voltage
- [x] The electric current consumed by the pump is higher than the permissible current for digital pins
- [ ] The pump only has two wires, while, in fact, three are needed
- [ ] To connect the pump, we need a pump driver t

2. How can we manage heavy loads with Arduino? 1 point

- [x] Use expansion cards, which allow connecting separate power sources for heavy loads
- [x] 220 V of alternating current through a relay
- [x] 220V of alternating current through a transistor
- [ ] Through a transistor
- [x] Use a separate power source for the servomotor by connecting the "grounds"

- [ ] Through a relay
- [ ] You can connect any load to Arduino's 5B output and manage it directly
- [ ] Through a transistor using the PWN

3. How can we manage loads through a field transistor? 1 point

- ( ) Feeding a pulse of certain length to the gate turns the current between the source and the drain on and off
- (•) Applying voltage to the gate allows the current to pass between the source and the drain
- ( ) The current running through the base automatically closes the source and the gate
- ( ) The current running through the base opens the way for the current between the collector and the emitter

4. What can Vin be used for on Arduino board? 1 point

- [ ] To power the load consuming not more than 220 mA
- [ ] To power the load consuming not more than 50 mA
- [x] To power the components from the power source, connected directly to Arduino
- [x] To connect the power source to Arduino

5. What aspects should be planned to allow you to take timely decisions? 1 point

- [x] Code adjustment to allow you working with all types of devices in any mode whatsoever
- [x] Using pins of all types
- [x] Powering your device
- [x] Servicing after the assembly (uploading the new versions of your sketches, configuration, etc.)

6. What refers to the finite-state automaton? 1 point

- [ ] Inability to work with gradually changing parameters
- [x] Data display with the help of a statechart
- [x] A certain number of states
- [ ] Possibility to enter several states at a time
- [x] Fixed ways of transition between the states
- [ ] Unpredictable number of states

7. What statements are true concerning switch()? 1 point

- [ ] It is recommended that you close every set of actions with the “default” instruction to exit the “switch”
- [x] This structure allows choosing a set of actions depending on the value of the expression
- [x] There is the “default” key word to determine the actions, which are performed when the value of the expression is not conformant with any of the intended values
- [ ] There is the “break” key word to determine the actions, which are performed when the value of the expression is not conformant with any of the intended values
- [x] It is recommended that you close every set of actions with the “break” instruction to exit the “switch”
- [x] Every set of actions is described after the “case” key word once the possible value has been determined

8. What can deter the program from operating correctly without any errors occurring in compiling? 1 point

- (•) Using “=” instead of “= = “ in comparisons
- ( ) Wrong choice of the board model
- ( ) Transmission of an odd parameter to the function
- ( ) Referring to a local variable declared in another function

9. How does Arduino form a web page? 1 point

- ○ Arduino cannot create web pages
- ◉ A web page is a text with special markup, which can be stored in Arduino's memory, just like in the memory of any computer
- ○ Arduino can create a web page only if it is connected to a computer
- ○ The Ethernet shield allows Arduino to create a signal of a certain type which creates the web page

10. What will happen if the following code is run, when all the pins that we use have an LED connected to them? 1 point

```
int a = 0;

void setup() {
  Serial.begin(9600);
  pinMode(2, OUTPUT);
  pinMode(3, OUTPUT);
  pinMode(4, OUTPUT);
}

void loop() {
  switch(a)
  {
    case 1:
```

```
    case 2:
      a = 1;
      digitalWrite(a*2, HIGH);
    break;
    case 3:
      a++;
    break;
    case 4:
      a /= 2;
      Serial.println("Hello, world!");
    break;
    default:
      a = 3;
    break;
  }
}
```

- ○ “Hello, world!” will appear on the Port Monitor, and the LED on pin 4 will turn on
- ○ “Hello, world!” will appear on the Port Monitor
- ○ The LED on pin 2 will turn on
- ○ The LED on pin 4 will turn on
- ◉ “Hello, world!” will appear on the Port Monitor, and the LED on pin 2 will turn on