

| Part No.     | Designator                      | Component                   | Number | Cost per unit - (GBP) | Total cost - (GBP) | Source of Materials |
|--------------|---------------------------------|-----------------------------|--------|-----------------------|--------------------|---------------------|
| /            | <b>Main Modules</b>             | /                           | /      | /                     | /                  | /                   |
| 1            | Arduino Uno R3                  | Micro controller            | 1      | 25                    | 25                 | Amazon              |
| 2            | L298N Driver                    | Pumps Driver                | 2      | 3.99                  | 7.98               | Amazon              |
| 3            | 4-Channel Relay Module          | Stirrer Control             | 1      | 7.3                   | 7.3                | Amazon              |
| 4            | LED Signal Light Module         | Status Check                | 1      | 7.8                   | 7.8                | Amazon              |
| 5            | 5V DC 4010 Cooling Fan          | Thermal Management          | 2      | 6.9                   | 13.8               | Amazon              |
| 6            | 24/12V-5V Power Buck Converter  | DC Converter                | 1      | 3.99                  | 3.99               | Amazon              |
| /            | <b>Accessories</b>              | /                           | /      | /                     | /                  | /                   |
| 7            | 12V 2A Power Adapter            | Power Source                | 1      | 8                     | 8                  | Amazon              |
| 8            | Arduino UNO USB Data Sync Cable | Patch cable                 | 1      | 7.9                   | 7.9                | Amazon              |
| 9            | Electrical Connectors Block     | Wire Connectors             | 3      | 1.5                   | 4.5                | Amazon              |
| 10           | Dupont Wire for Arduino DIY     | Basic connections           | 50     | 0.2                   | 10                 | Amazon              |
| 11           | Multicolor Cable ties           | Cable Arrangement           | 5      | 2.6                   | 13                 | Amazon              |
| 12           | AWG Wire for Pumps              | AWG Cable                   | 8      | 1.5                   | 12                 | Amazon              |
| /            | <b>3D Printing Items</b>        | /                           | /      | /                     | /                  | /                   |
| 12           | Customized Bottom Plate         | Floor-1.stl                 | 1      | 5                     | 5                  | 3D-Printed          |
| 13           | Customized Upper Plate          | Floor-2.stl                 | 1      | 5                     | 5                  | 3D-Printed          |
| 14           | Box case for DC converter       | Small Box case.stl          | 2      | 5                     | 10                 | 3D-Printed          |
| 15           | Lid for Box case                | Insert lid for box case.stl | 2      | 5                     | 10                 | 3D-Printed          |
| 16           | Brackets for extension devices  | Small Brackets.stl          | 8      | 3                     | 24                 | 3D-Printed          |
| /            | <b>Assembling items</b>         | /                           | /      | /                     | /                  | /                   |
| 17           | M2-8 Screws                     | R3 Screws                   | 6      | 0.05                  | 0.3                | Mechanic Workshop   |
| 18           | M2-10 Screws                    | Fan Holder Screws           | 4      | 0.05                  | 0.2                | Mechanic Workshop   |
| 19           | M2-16 Screws                    | Fan Holder Screws           | 6      | 0.08                  | 0.48               | Mechanic Workshop   |
| 20           | M2 Nuts                         | Nuts                        | 20     | 0.05                  | 1                  | Mechanic Workshop   |
| 21           | M3-8 Screws                     | Relay Screws                | 12     | 0.05                  | 0.6                | Mechanic Workshop   |
| 22           | M3-20 Screws                    | LED holder Screws           | 8      | 0.08                  | 0.64               | Mechanic Workshop   |
| 23           | M3-28 Screws                    | Connector Screws            | 2      | 0.1                   | 0.2                | Mechanic Workshop   |
| 24           | M3 Nuts                         | Nuts                        | 25     | 0.05                  | 1.25               | Mechanic Workshop   |
| 25           | M4-6 Screws                     | Floor Screws                | 6      | 0.05                  | 0.3                | Mechanic Workshop   |
| 24           | M4 Nuts                         | Nuts                        | 6      | 0.05                  | 0.3                | Mechanic Workshop   |
| 25           | Aluminum Columns-70/20          | Standoffs                   | 4      | 0.1                   | 0.4                | Mechanic Workshop   |
|              | /                               | /                           | /      | /                     | /                  |                     |
| Total Cost = |                                 |                             |        |                       | 180.94             |                     |

