1. **Capacitor Charging Function 1: Voltage after a given time**

|  |  |  |  |
| --- | --- | --- | --- |
|  | **Area** | **Expectation** | **✓ = 1 pt** |
| 1 | Lay out | Problem clearly laid out in a logical order. Including:   1. Flow Chart, 2. Hand test calculations 3. Code 4. Validation |  |
| 2 | Flow Chart | Flow Chart is used to show Program Steps |  |
| 3 | Flow Chart is complete & accurate.  Properly and clearly formatted, easy to read |  |
| 4 | Program Code | Code for a function provided with comments including useful help response, comments listing variables & units, and program logic |  |
| 5 | .m file included can run |  |
| 6 | Code includes some correct elements |  |
| 7 | Code logic is largely correct calculations |  |
| 8 | Code is completely correct |  |
| 9  10 | Validation | Program execution provided showing  match to known correct results  Includes required test case  Includes complete and accurate Table 1. |  |
|  |

1. **Capacitor Charging Function 2: Time to charge a given voltage**

|  |  |  |  |
| --- | --- | --- | --- |
|  | **Area** | **Expectation** | **✓ = 1 pt** |
| 1 | Worksheet – Set up and Flowchart | Problem clearly laid out using Program Development Worksheet  Goal of program presented, Inputs & Outputs for program listed (1-3) |  |
| 2 | Flow Chart is used to show Program Steps (4) |  |
| 3 | Flow Chart is complete & accurate.  Properly and clearly formatted (4) |  |
| 4 | Code for a Function Provided with comments including useful help response, comments listing variables & units, and program logic |  |
| 5 | Program Code | .m file included can run |  |
| 6 | Code includes some correct elements |  |
| 7 | Code logic is essentially correct |  |
| 8 | Code is completely correct |  |
| 9  10 | Validation | Program execution provided showing  match to known correct results  Includes required test case |  |
|  |