

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 | Validation | Program execution provided showing match to known correct results | |
| 10 | | Includes required test case Includes complete and accurate Table 1. | |

2. 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 | Validation | Program execution provided showing match to known correct results | |
| 10 | | Includes required test case | |