**CMGT 235 – Electrical and Mechanical Systems**

**Homework #26**

Due: 11/29/2022

Points: 20

Show all work. Use NEC 2017 – Chapter 9 and Annex C

Solution

Name: \_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_

1. What trade size PVC Schedule 40 raceway is required for 4 #4/0 and 1 #4 G THHN service entrance conductors?

|  |  |  |  |  |
| --- | --- | --- | --- | --- |
| QTY | Gage | Type | Cross-Section Area (E Wire) | Total Cross- Section Area |
| 4 | 4/0 | THHN | 0.3237 | 4 x 0.3237 = 1.2948 |
| 1 | 4 | THHN | 0.0824 | 1 x 0.0824 = 0.0824 |
| Total Cross-Section Area for all wires | | | | 1.3772 |
| Required Trade Size PVC SCHD 40 Raceway | | | | 2 ½ “ |

1. What trade size EMT raceway is required for 3 #350 phase conductor, 1 #350 neutral conductor, and 1 #1 THHN equipment ground?

|  |  |  |  |  |
| --- | --- | --- | --- | --- |
| QTY | Gage | Type | Cross-Section Area (E Wire) | Total Cross- Section Area |
| 4 | 350 | THHN | 0.5242 | 4 x 0.5242 = 2.0968 |
| 1 | 1 | THHN | 0.1562 | 1 x 0.1562 = 0.1562 |
| Total Cross-Section Area for all wires | | | | 2.2530 |
| Required Trade Size EMT Raceway | | | | 2 ½ “ |

1. What trade size PVC SCHEDULE 80 raceway is required for 3 #500 THHN phase conductors and 1 #500 neutral conductor?

Annex C Table C.10 Annex C Table C.10(A) (Compact Conductors)

4 #500 THHN 4 #500 THHN

Trade Size 3 ½“ Trade Size 3”

1. How many #6 THHN conductors can be installed in a trade size 3/4 RMC?

Annex C Table C.9 Annex C Table C.9(A) (Compact Conductors)

4 #6 conductors 5 #6 Condcutors