**CMGT 235 – Electrical and Mechanical Systems**

**Homework #21** – Service Entrance, Grounding, and Bonding

Due: 11/4/2021

Points: 20

**Answers**

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

1. What are the incoming service conductors brought to a building overhead called?

Service drop

1. What are the incoming service conductors brought to a building routed underground called?

Service lateral

1. How many disconnects are permitted by the NEC to be installed at the service entrance?

six

1. What amperage service does the NEC require for new single-family dwellings?

At least 100 A

1. List the wire types are allowed for service entrance conductors:

1. RHH

2. THW

3. THWW

4. XHHW

5. RHW

1. Explain the difference between conduit and cable.

Cable the conductor is enclosed in a covering. Conduit the conductor is inside a pipe.

1. What NEC Table establishes the allowable ampacities of insulated conductors?

Table 310,15(B)(16)

1. What is the purpose of the service head?

To prevent water from entering the meter socket

1. What article in the NEC covers temporary wiring?

Article 590

1. What NEC table indicates the proper size for the grounding electrode conductor?

Table 250.66

1. The installation of a 100 A service entrance using 1/0 AWG copper service wires would require what size copper grounding electrode conductor?

Requires a 6 AWG copper grounding conductor

1. What is a transformer that increases the primary voltage called?

Step-up transformer

1. What is a transformer that decreases the primary voltage called?

Step-down transformer

1. What is the most common residential service voltage?

Three-wire, Single-phase, 120V and 240 V

1. What is connecting the house’s wiring to the earth called?

grounding

1. What are the three permitted locations that connection to the earth for the service entrance can be at?

At the service drop

In accessible meter enclosure

In service disconnecting means

1. What type of metal can be used for grounding to a water pipe?

Steel, iron, cast iron, stainless steel

1. What is the main purpose of bonding?

To protect people from deadly fault current

1. List two overcurrent protection devices:

1. fuse

2. circuit breaker

1. What is the symbol used on an electrical plan for a panelboard?