Technical Standards and Safety Authority (TSSA) G2 Practice Exam (Sample)

Study Guide

Everything you need from our exam experts!

Questions

1. The instrument used to determine potential difference in an electrical circuit is the:

A. voltmeter

B. Ohmmeter

C. Ammeter

D. Potentiometer

2. When determining the common vent size, which factor is critical?

A. The size of the smallest appliance being vented

B. The total area of all flue collars

C. The height of the chimney

D. The individual venting capacity of each appliance

3. Since 1996, what has been the most common type of home construction?

A. Platform

B. Vapour envelope

C. Solid Brick

D. Double platform

4. BW vent shall be used only with an approved:

A. Decorative appliance

B. Down flow furnace

C. Revertible flue boiler

D. Recessed wall furnace

5. When sizing either a vent or a chimney which will vent more than one natural gas appliance, which of the following could be used in determining the size of the common vent?

A. The area of the common vent shall equal the total area of all the flue collars

B. The area of the common vent shall equal the area of the largest single flue collar

C. The area of the common vent shall equal area of either the largest draft control device outlet or the largest flue outlet plus 50% of the sum of the outlet areas of the additional appliances

D. The area of the common vent shall equal the area of either the largest draft control device outlet of the largest flue outlet plus 75% of the sum of the outlet areas of the additional appliances

6. What would be the minimum distance that a dryer vent can terminate from a gas meter?

A. 3 ft.

B. 6 ft.

C. 1 ft.

D. 10 ft.

7. Single wall vent connectors:

A. May pass through floors, ceilings or roofs provided a metal thimble is used

B. May pass through floors, ceilings or roofs provided the required minimum distance from combustible material is maintained

C. May pass through floors, ceilings or roofs provided they are insulated

D. Shall not pass through floors, ceilings or roofs

8. Before lighting a burner in a steam boiler, what must be ensured?

A. There is water in the boiler

B. The temperature controller is set properly

C. The main burner test firing valve is turned on

D. The safety valves are open

9. The relief valve for a low pressure hot water system should be set at:

A. 14.7 psia

B. 15 psig

C. 30 psia

D. 30 psig.

10. What is the purpose of a regulator in a gas heating appliance?

A. To control the temperature of the gas

B. To maintain consistent gas pressure

C. To prevent gas leaks

D. To enhance combustion efficiency

Answers

1. A
2. B
3. A
4. D
5. C
6. A
7. D
8. A
9. D
10. B

Explanations

1. The instrument used to determine potential difference in an electrical circuit is the:

A. voltmeter

B. Ohmmeter

C. Ammeter

D. Potentiometer

The instrument utilized for measuring potential difference, or voltage, in an electrical circuit is the voltmeter. This device is specifically designed to measure the electrical potential energy per unit charge between two points in a circuit, helping technicians and engineers understand voltage levels that can affect circuit performance and safety. Voltmeters are connected in parallel with the component whose voltage is being measured, allowing them to capture the voltage drop across that component accurately. Their design typically includes high internal resistance to ensure that they do not significantly alter the circuit they are measuring. In contrast, other instruments like ohmmeters are used to measure resistance, ammeters measure current flowing through a circuit, and potentiometers are utilized for various purposes, including the comparison of voltages or for adjusting resistance in a circuit. Each of these tools plays an important role in electrical work but serves a different function than measuring potential difference.

2. When determining the common vent size, which factor is critical?

A. The size of the smallest appliance being vented

B. The total area of all flue collars

C. The height of the chimney

D. The individual venting capacity of each appliance

The total area of all flue collars is critical when determining the common vent size because it represents the cumulative outlet size for all appliances being vented through a single vent system. The vent must be sized appropriately to ensure that all flue gases produced by the appliances can exit efficiently and without restriction. If the vent is undersized relative to the total area of the flue collars, this can lead to inadequate venting performance, which may cause backdrafting or poor combustion efficiency. Ensuring that the total area is considered allows for proper calculations that account for the potential gas flow requirements of all appliances connected to the vent, ensuring safety and effectiveness in the venting system. While factors such as the size of the smallest appliance, the height of the chimney, and the individual venting capacity of each appliance can play a role in overall venting efficiency, it is the cumulative area of the flue collars that most directly impacts the necessary size of the common vent to accommodate the collective output of the appliances.

3. Since 1996, what has been the most common type of home construction?

A. Platform

B. Vapour envelope

C. Solid Brick

D. Double platform

The most common type of home construction since 1996 is the platform method. This technique involves building walls on a platform that has been constructed at the ground level. The platform approach allows for easier installation of floors and roofs, making the construction process more efficient and cost-effective. It also facilitates better insulation and energy efficiency, as the design allows for the incorporation of various modern materials and techniques. The platform method has become increasingly popular in residential construction due to its adaptability to different architectural styles and building codes, as well as its compatibility with contemporary framing techniques. This construction type has made it easier for builders to create multiple stories while maintaining structural integrity and ease of access during the building process. Thus, its widespread use since the 1990s reflects the industry's shift towards more efficient building practices.

4. BW vent shall be used only with an approved:

A. Decorative appliance

B. Down flow furnace

C. Revertible flue boiler

D. Recessed wall furnace

In the context of venting systems, the BW vent is specifically designed for use with certain types of appliances that have particular venting requirements. The correct option relates to the operational characteristics of a recessed wall furnace. This type of furnace is typically installed in a wall space and requires a specific venting arrangement to ensure proper operation and safety. Recessed wall furnaces are designed to exhaust combustion gases in a controlled manner, directly affecting their efficiency and safety. The BW vent system is compatible with such appliances as it fits their regulatory and performance needs, ensuring that combustion gases can be safely and effectively vented out of the living space. Understanding the venting requirements of various appliances is crucial, as improper venting can lead to dangerous situations, such as backdrafting or the accumulation of harmful gases indoors. Therefore, using a BW vent with approved appliances like recessed wall furnaces is vital for maintaining safety standards.

5. When sizing either a vent or a chimney which will vent more than one natural gas appliance, which of the following could be used in determining the size of the common vent?

A. The area of the common vent shall equal the total area of all the flue collars

B. The area of the common vent shall equal the area of the largest single flue collar

C. The area of the common vent shall equal area of either the largest draft control device outlet or the largest flue outlet plus 50% of the sum of the outlet areas of the additional appliances

D. The area of the common vent shall equal the area of either the largest draft control device outlet of the largest flue outlet plus 75% of the sum of the outlet areas of the additional appliances

The correct choice provides a comprehensive guideline for sizing a common vent for multiple natural gas appliances. It incorporates a key principle of venting systems, which is to ensure that the common vent has sufficient capacity to handle the combined exhaust from all connected appliances. By specifying that the area of the common vent must equal the area of either the largest draft control device outlet or the largest flue outlet, the option ensures that the vent can accommodate the flow of gases from the most demanding appliance. The addition of 50% of the sum of the outlet areas of the additional appliances recognizes that these appliances also contribute to the total venting demand. This method ensures a balance between effective venting and not oversizing, which could lead to issues such as inefficient operation or difficulty in maintaining proper draft. The other options either simplify the sizing process too much or do not adequately account for the combined effects of the various appliances on the venting system, which could compromise performance and safety. The incorporation of a percentage of additional outlets is critical for ensuring that all appliances function efficiently and safely within the common venting system.

6. What would be the minimum distance that a dryer vent can terminate from a gas meter?

A. 3 ft.

B. 6 ft.

C. 1 ft.

D. 10 ft.

The minimum distance that a dryer vent must terminate from a gas meter is 3 feet. This requirement is in place to ensure that any exhaust gases or lint from the dryer do not interfere with the proper functioning of the gas meter or create a safety hazard. A greater distance minimizes the risk of any potential gas leak igniting due to lint or other flammable materials being blown into the vicinity of the meter. It is essential for maintaining safe operational standards for gas appliances. The 3-foot requirement aligns with safety codes and standards to provide adequate separation and ventilation, thus prioritizing safety in residential installations.

7. Single wall vent connectors:

A. May pass through floors, ceilings or roofs provided a metal thimble is used

B. May pass through floors, ceilings or roofs provided the required minimum distance from combustible material is maintained

C. May pass through floors, ceilings or roofs provided they are insulated

D. Shall not pass through floors, ceilings or roofs

Single wall vent connectors should not pass through floors, ceilings, or roofs due to safety considerations related to the potential for heat transfer and fire hazards. When a single wall vent connector is installed, it can reach high temperatures, and if it passes through combustible materials, it poses a significant risk of igniting those materials, leading to possible structural fires. The design and code regulations are aimed at ensuring safety by preventing direct contact between high-temperature venting systems and combustible structures. Therefore, keeping single wall vent connectors entirely within an unoccupied space or using alternative venting systems that meet safety codes is crucial for preventing dangerous conditions. This guidance ensures compliance with safety standards and protects life and property from fire hazards associated with improper venting practices.

8. Before lighting a burner in a steam boiler, what must be ensured?

A. There is water in the boiler

B. The temperature controller is set properly

C. The main burner test firing valve is turned on

D. The safety valves are open

Before lighting a burner in a steam boiler, it is essential to ensure that there is water in the boiler. This is a critical safety measure because the presence of water is necessary to ensure proper operation and to avoid overheating the boiler components. If the boiler is lit without sufficient water, it can lead to serious damage such as overheating, warping, or even explosion due to extreme pressure buildup. Maintaining an adequate water level ensures that the heat generated by the burner is absorbed safely and efficiently, allowing the steam system to operate reliably. Proper water level not only protects the boiler itself but also plays a vital role in the overall safety and performance of the steam system. The other options relate to operational settings and procedures, which are important but secondary to the fundamental requirement of having water in the boiler before ignition.

9. The relief valve for a low pressure hot water system should be set at:

A. 14.7 psia

B. 15 psig

C. 30 psia

D. 30 psig.

The relief valve for a low pressure hot water system should be set at 30 psig because this setting is crucial for ensuring the safety and proper functioning of the system. A relief valve is designed to prevent excessive pressure build-up within the system, which can lead to dangerous conditions such as pipe rupture or equipment failure. In the context of low pressure hot water systems, a setting of 30 psig provides a suitable threshold that balances operational efficiency with safety measures. This level is commonly accepted within industry standards to accommodate the operating pressures of typical low pressure hot water applications while still engaging safety mechanisms when necessary. It's important to clarify that settings like 14.7 psia or 30 psia do not apply effectively to low pressure systems since they do not reflect the typical gauge pressure range required. Gauge pressure accounts for atmospheric pressure, which is typically around 14.7 psi, so using psia would be inappropriate in this context, as it doesn't provide a true indication of the pressure relative to atmospheric levels.

10. What is the purpose of a regulator in a gas heating appliance?

A. To control the temperature of the gas

B. To maintain consistent gas pressure

C. To prevent gas leaks

D. To enhance combustion efficiency

The purpose of a regulator in a gas heating appliance is to maintain consistent gas pressure. This is essential for the safe and effective operation of gas appliances, as variations in gas pressure can lead to inefficient combustion, fluctuating heat output, and even safety hazards. The regulator adjusts the high pressure from the gas supply down to a usable, lower pressure suitable for the appliance, ensuring that the gas flows at a level that the burner can effectively utilize for heating. Maintaining consistent gas pressure helps to ensure that the appliance operates within its designed parameters, enhancing safety and efficiency. If the pressure were to vary excessively, it could either lead to insufficient gas supply, causing the appliance to underperform, or excessive pressure, which could risk damage to the appliance or create a dangerous situation such as a gas leak. Hence, the regulator plays a critical role in user safety and appliance functionality.