**Head Custodian Test**

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

Why shouldn’t you mix bleach and ammonia?

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When is a black pad used in the cleaning process?

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Put the following steps to stripping a floor in the correct order:

Pick up stripper a. \_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_

Mop rinse b. \_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_

Floor rinse c. \_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_

Lay down stripper d. \_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_

Dust mop e. \_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_

Rotary scrub with black pad f. \_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_

Apply new finish g. \_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_

If a toilet with a flush valve won’t stop running water after it is flushed, what is the problem?

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After emptying the room, name the first step to do when cleaning carpet.

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What is the main reason for using a germicidal detergent?

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You replaced the washer on a dripping stem faucet. It continues to leak. What is the most likely trouble?

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If student is left at your building with no ride home, name two things you will do to assist this student (assume this is elementary or middle school).

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What is the best method to turn off power to a light fixture when changing a ballast?

❒⁭ Turn circuit breaker off at panel box ❒⁭ Turn off light switch.

Match the following carpet cleaning method with its description:

Spray cleaning product on carpet with garden sprayer; scrub with a yarn pad on a rotary floor machine.

Properly mix cleaning product in solution tank of machine, machine puts product on carpet and sucks it up right away.

❒⁭ Extraction Method ❒⁭ Bonnet Method

If an upright vacuum cleaner motor is running but the brush isn’t turning, what part would you check first to determine the problem?

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What is the first step to take when working on electrical things?

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Why is it a good idea to use neutralizer as the final rinse before stripping a floor?

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What is the main reason for using an all-purpose detergent?

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What is the highest part of the ladder you should stand on?

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The end of the school day has arrived, students have not been dismissed and a call from the office presents three immediate problems.

A custodian can’t find the cleaner they need for the night-cleaning schedule.

A student’s locker won’t open and he has to catch the bus.

A toilet flush valve keeps running.

What order would you take care of these things? 1. \_\_\_\_\_ 2. \_\_\_\_\_ 3. \_\_\_\_\_

A fellow employee comes to work and something is wrong. They can’t seem to talk right; they are having trouble standing up. Name three things you can do.

How many coats of floor finish are recommended for best results after scrubbing a floor?

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If the lights in a whole room won’t turn on, what would be the first thing to check for?

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If after changing the lamps in a fluorescent fixture, the lamp still won’t light – what is most likely the problem?

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What is the function of a ballast in a florescent fixture?

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What is the first thing you will do when working on a flush valve?

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What kind of light switch is used to turn on lights when there are two entrances into a room?

❒⁭ Single throw, single pole ❒⁭ Double pole, single throw ❒⁭ 3-way switch

Name the methods of clearing a plugged toilet.

What is flush valve?

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You are operating a snow thrower and something gets stuck in the auger chute. What do you do to get it unstuck?

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Name the most common symptom that would indicate that a circulating pump is not working?

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The lights keep dimming in the building. Out of the following three things, what is the best thing to do?

❒⁭ Turn off all power to the building by using the “main switch”

❒⁭ Run around and turn off motors

❒⁭ Nothing, hope that you don’t lose power

What is the name of the safety device that shuts off a boiler if there is too little water in it? \_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_

What does a circulating pump do?

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What is a “P” trap?

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After a bad rain you have a roof leak and water is pouring into the building. What will you do?

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When cleaning up blood, what is the first thing you should do?

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You have to replace a light switch and you do not have any. You go to the hardware to get one. What will you do to get the right one?

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The fire alarm goes off in the building, and when it is silenced at the alarm panel, it won’t reset. What is usually the problem?

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**BOILER OPERATIONS/REPAIR**

Steam and hot water boilers are divided into two groups that indicate the location of the water inside the vessel. What are these two designations?

❒⁭ Fire box and bent tube ❒⁭ Fire tube and water tube ❒⁭ Gas fired and oil fired

❒⁭ Sectional and welded ❒⁭ Atmospheric and power burner

The number of passes a boiler had indicates what?

❒⁭ Whether it is power burner ❒⁭ Whether it has a blower motor

❒⁭ How many times the hot gas goes through the boiler before it is vented

❒⁭ None of the above ❒⁭ All of the above

The water column on a boiler will indicate what about the boiler?

❒⁭ If the boiler is a steam boiler ❒⁭ If the boiler is a hot water boiler

❒⁭ The level of water in the boiler ❒⁭ The pressure inside the boiler

A pressure gauge reads 10 PSIG. The gauge is reading the pressure where?

❒⁭ Inside the supply piping ❒⁭ Inside the return piping

❒⁭ At the pumps which supply the building ❒⁭ Inside the boiler itself ❒⁭ All of the above

The introduction of small amount cold feed water into a hot boiler may cause what stress to occur?

❒⁭ Expansion of the boiler ❒⁭ Thermal shock ❒⁭ Conductive stress ❒⁭ An explosion

❒⁭ None of the above

What is the function of the shot feeder on a supply-return line?

❒⁭ Add water to the system ❒⁭ Add a water testing valve to the system

❒⁭ Add circulation to the system ❒⁭ Add boiler water treatment to the system

When weather warms in the spring, what should you do with the burner control?

❒⁭ Move the potentiometer dial to manual position ❒⁭ Shut off one pump

❒⁭ Shut off the potentiometer ❒⁭ Set it back to lower fire ❒⁭ None of the above

What is the full function of the low-water cutoff on a steam boiler?

❒⁭ Add water to the boiler and re-start it ❒⁭ Add feed water to the boiler

❒⁭ To re-start the boiler when it fails ❒⁭ Send an alarm to the boiler operator

❒⁭ Provide a place to blow down the column

What would govern the number of times a boiler would have to be “blown down?”

❒⁭ The boiler treatment water test ❒⁭ How much solids there are in the boiler

❒⁭ How much the boiler is being used ❒⁭ All of the above ❒⁭ None of the above

In a steam boiler system, the steam in the radiators cools and turns to?

❒⁭ Sludge ❒⁭ Vapor ❒⁭ Rust ❒⁭ Condensation ❒⁭ All of the above

In a fully pneumatically controlled boiler room, the functions are controlled by which of the following?

❒⁭ The programmer for the power burner on the boiler ❒⁭ The night setback controller

❒⁭ The pneumatic air compressor and time clock ❒⁭ The outside air temperature sensor

❒⁭ All of the above

What is the function of a pre-purge cycle on a burner?

❒⁭ Allows air pressure to build up for more efficient burning ❒⁭ Clears the flue of built-up soot

❒⁭ Clears the fire tube and flues of residual gases ❒⁭ Clears the burner of any built-up gas

❒⁭ All of the above

The large round tank which is mounted above the boiler is called what?

❒⁭ Supply tank ❒⁭ Expansion tank ❒⁭ Make-up water tank ❒⁭ Air eliminator tank

❒⁭ None of the above

During the night, the air compressor for the pneumatic system breaks down and loses pressure. If the boiler system is programmed to “fail safe”, what will the boiler’s function be?

❒⁭ Shut off all systems ❒⁭ Shut down boiler ❒⁭ Open all the pneumatic heat valves in the building

❒⁭ Set boiler to night setback ❒⁭ Set off an alarm in the boiler room

As the number of times a boiler is blown down increases, what effect will this have on the water inside the boiler?

❒⁭ No effect ❒⁭ It will require additional or more boiler treatment

❒⁭ Will produce steam with less condensation in it ❒⁭ The steam produced will be hotter

❒⁭ The water will become cleaner

The normal operating level on a steam boiler gauge glass is what?

❒⁭ Full ❒⁭ ½ full ❒⁭ Manually adjustable ❒⁭ Sea level and pressure adjusted

❒⁭ None of the above

The abbreviation BTU means which of the following?

❒⁭ The heat needed to boiler water ❒⁭ The head needed to produce steam ❒⁭ British Thermal Unit

❒⁭ Basic Thermal Utilized ❒⁭ Bryan Turbilating Unit

Heat is transferred through metal by what method?

❒⁭ Convection ❒⁭ Conduction ❒⁭ Radiation ❒⁭ Absorption ❒⁭ Vertical aluminum fins

**CARPENTRY/GENERAL CONTRUCTION**

How do you determine which end is the top of a new flush wood door?

❒⁭ Door will be stamped at the top ❒⁭ All wood doors are universal

❒⁭ You sight the edge of the door ❒⁭ All of the above ❒⁭ None of the above

When hanging drywall onto a wood stud wall, you install the first layer horizontally. This is done to:

❒⁭ Help eliminated imperfections in the studs ❒⁭ Help eliminate or reduce butt joints in the wall

❒⁭ Give more rigidity to the wall ❒⁭ All of the above ❒⁭ None of the above

At 16” on center, how many studs will it take for a wall section 26’-0” long?

❒⁭ 17 pieces ❒⁭ 19 pieces ❒⁭ 21 pieces ❒⁭ 23 pieces

When figuring the number of equal pieces you can get out of a sheet of plywood, what must you add to the width of each cut?

❒⁭ Thickness of the plywood ❒⁭ Width of the saw blade ❒⁭ ½ width of the saw blade

❒⁭ One-half of an inch ❒⁭ The thickness of your pencil mark

The two blades of a standard framing square are what lengths?

❒⁭ 12” and 24” ❒⁭ 16” and 24” ❒⁭ 16” and 30” ❒⁭ 12” and 30” ❒⁭ None of the above

Before pouring concrete into a wooden form, to avoid having the concrete cure too fast you should:

❒⁭ Place re-rod or wire reinforcing into the pour

❒⁭ Make sure the concrete is wet coming from the mix truck

❒⁭ Dampen the forms and the earth within the forms with water

❒⁭ Spray the forms with fuel oil to avoid sticking

❒⁭ Finish with a steel trowel only

When installing a door closer, the end of the box is marked “Hand – Universal”. What does this mean?

❒⁭ It cannot be used on a door with an automatic opening system

❒⁭ It can be used for only wood doors ❒⁭ It can be used for only metal doors

❒⁭ It can be used for any hand door

What is a fire damper?

❒⁭ A device for holding a door open and closing it during fire

❒⁭ A louver which provides a fire stop between building areas

❒⁭ A device which provides Type ABC extinguishing during a fire

❒⁭ A device which will sound a fire alarm when closed ❒⁭ All of the above

You are forming a concrete pad 10’ by 10’. How do you make sure the forms are square?

❒⁭ With a framing square ❒⁭ Measure corner to corner ❒⁭ The three, four, five method

❒⁭ A and C ❒⁭ B and C ❒⁭ All three of the above ❒⁭ None of the above

You are making a formica top on a counter. What is the least number of coats of adhesive you would use on each new piece of wood and formica to be laminated?

❒⁭ One coat on each piece ❒⁭ Two coats on each piece

❒⁭ One on the wood and two on the formica ❒⁭ Two on the wood and one on the formica

What is the purpose of the coating on an arc welding rod?

❒⁭ Cools the rod ❒⁭ Provides flux to the work ❒⁭ Cleans the metal

❒⁭ Indicates area which might be sub standard ❒⁭ All of the above

What is the difference between a stationary level and a transit level?

❒⁭ No difference ❒⁭ The stationary level is for masons only

❒⁭ A transit can adjust vertically and horizontally ❒⁭ A stationary level cannot be adjusted once set

As you are working on a metal door, you notice there is a metal tag nailed to the butt stile and it indicated the door is a “B” label door. What does this indicate?

❒⁭ This is the hinge side of the door ❒⁭ This is the lock side of the door

❒⁭ This door is used for handicapped access ❒⁭ All of the above ❒⁭ None of the above

In a school class room, what is the one key element common to all lock sets found on hallway exit door?

❒⁭ They are “panic” doors ❒⁭ They all have door closers ❒⁭ You cannot lock yourself in the room

❒⁭ They are all keyed alike

**PLUMBING**

On PVC piping, there is a schedule stamped on the pipe (i.e., SCH 30). The number 30 designates what about that pipe?

❒⁭ It is only used as a sewer pipe ❒⁭ It is only used as water pipe

❒⁭ It indicates the thickness of the pipe wall ❒⁭ It indicates the inside diameter of the pipe

❒⁭ It can stand 30 pounds of internal pressure.

A piece of boiler equipment has a PRV rated at 150 lbs. @ 210 degrees. What does PRV stand for?

❒⁭ A power release valve ❒⁭ A pressure relief valve ❒⁭ A Pop-off relief vent

❒⁭ A pressure reverse vent

Where would you install a Di-Electric Union?

❒⁭ In the electrical panel ❒⁭ On cold water piping next to the water heater

❒⁭ Between a galvanize pipe and a copper pipe ❒⁭ Between black iron pipe and copper pipe

❒⁭ Where you are going to ground an electrical panel

You have fitted a number of pieces of copper pipe for installation. Explain the steps you would use to prepare the joints for sweating.

❒⁭ Flux, heat, colder with rosin core solder ❒⁭ Flux, heat, solder with led free solder

❒⁭ Sand, flux, heat, solder, wipe with rag ❒⁭ Sand, flux, heat, solder with 60/40 solder, wipe with rag

❒⁭ Sand, flux, heat, solder with silver solder, wipe with rag

True or False? You are installing a drain title. Near by is a sanitary sewer. You may tap this catch basin for the drain water.

❒⁭ True ❒⁭ False

What is the function of a P-trap?

❒⁭ A place to hold waste water ❒⁭ To stop sewer gasses from coming back into the room

❒⁭ To stop anything from being flushed down the drain ❒⁭ All of the above

What is the function of a check valve?

❒⁭ To allow air to escape from a heating system

❒⁭ To prevent water from flowing in the wrong direction ❒⁭ To keep the water level in a boiler even

❒⁭ All of the above

You are running a water line to a lavatory. What piece of material would you put above the T fitting to the supply for this lavatory?

❒⁭ Air eliminator ❒⁭ Air chamber ❒⁭ Di-electric fitting ❒⁭ The shut off valve for the supply pipe

In the laying for a 4” drain line you are using PVC. What steps would be used to prep and fit the pieces of pipe together?

❒⁭ File edges smooth, glue both pieces and fit ❒⁭ File edges smooth, install rubber gasket, lube and fit

❒⁭ File edges smooth, flux, prime, glue and fit ❒⁭

❒⁭ File edges smooth, use primer/cleaner, glue and fit.

A sign states “This water is not potable.” What should you NOT do with this water?

❒⁭ Do not flush this water into the sewer ❒⁭ Do not use it for drinking ❒⁭ It is treated boiler water

❒⁭ Dispose of it in a storm sewer only ❒⁭ All of the above

You are installing a hot water heater. On the top of the unit is a fitting marker “inlet”. At this fitting you would do which of the following?

❒⁭ Install the vent for the flue gasses ❒⁭ Place the pipe for the hot water to the building

❒⁭ Place the pipe for the cold water from the supply ❒⁭ Hook up the gas line supply

A boiler feed water pump has what type of pump packing?

❒⁭ Encapsulated asbestos fiber type ❒⁭ High temperature and pressure type

❒⁭ Fiber reinforced or ceramic type ❒⁭ Rubber impregnated type

In a centrifugal pump, what is the function of the impeller?

❒⁭ Provide force for the outlet hose ❒⁭ Provide just suction for the pump

❒⁭ Provide suction and discharge for the pump ❒⁭ All of the above

On the discharge piping from a sump pump, what would be installed in the discharge line above the pump?

❒⁭ A relief valve ❒⁭ A union fitting ❒⁭ A di-electric valve ❒⁭ A gate valve

❒⁭ A back-flow preventor

When a toilet is flushed, what causes the water and waste to be moved into the sewer line?

❒⁭ A vent line will allow air to force the water down

❒⁭ The flow and weight of the water into the bowl

❒⁭ The Sloan valve diaphragm opens to allow flushing ❒⁭ All of the above ❒⁭ None of the above

Your project requires that you solder a potable water line. The solder you will use must be which of the following types?

❒⁭ 60% silver and 40% lead ❒⁭ 60% lead and 40% tin ❒⁭ Lead free ❒⁭ 100% silver solder

❒⁭ Any of the above

Why do you drain the water from a line which you have to solder?

❒⁭ To reduce the water pressure ❒⁭ To provide an even clean surface for the solder joint

❒⁭ The water in the line will boil and make it impossible to get the pipe hot enough to apply the solder

❒⁭ The solder will not stick to a wet pipe and may leak ❒⁭ None of the above.

The pressure that water exerts on a given body or surface is given in PSI. What is the name given to this type of water pressure?

❒⁭ Hydrostatic ❒⁭ Hydraulic ❒⁭ Static ❒⁭ Pneumatic ❒⁭ Systolic

A piping repair project has just been completed by you. Since this line is for drinking water, what is the approved method for cleaning this line and rendering the water safe for drinking?

❒⁭ Call the Health Department ❒⁭ Flush for 24 hours ❒⁭ Flush with water until clear

❒⁭ Flush with a germicidal disinfectant ❒⁭ Chlorinate for 24 hours and flush

**HEATING, VENTILATING AND AIR CONDITIONING**

Refrigeration lines are sweat together with what type of solder?

❒⁭ 60/40 solder ❒⁭ Rosin core solder ❒⁭ Silver solder ❒⁭ Lead free ❒⁭ Any of the above

What do the fins on fin-tube radiation provide?

❒⁭ Surface for heat dissipation ❒⁭ Surface for heat absorption ❒⁭ Intake area for air flow to pass

❒⁭ All of the above

A switch in a unit ventilator has an EP switch. What do the letters EP stand for?

❒⁭ Enthalpic position ❒⁭ Either position ❒⁭ Electric / pneumatic ❒⁭ Electronic / pressure

What consideration would have to be given to the HVAC configuration prior to the installation of an exhaust fan?

❒⁭ Location of the other roof vents ❒⁭ Size of the unit vent damper ❒⁭ Electric panel breaker sizes

❒⁭ Amount of air supply introduced into the room ❒⁭ All of the above

At what point in a hot water supply piping scheme would you place an air eliminator?

❒⁭ Boiler room ❒⁭ High point of the system ❒⁭ Expansion tank in boiler room

❒⁭ At the unit vents ❒⁭ In the roof top units

In the air eliminator mentioned in #5, what prevents the water from leaking out of the vent?

❒⁭ Vent valve ❒⁭ An internal float ❒⁭ Back check valve ❒⁭ The boiler working pressure

❒⁭ Any of the above could be utilized

In a pneumatic piston actuator, what causes the extension/retraction of the arm?

❒⁭ An aluminum rod ❒⁭ Electricity ❒⁭ Air pressure ❒⁭ Static air pressure

A boiler re-set schedule is controlled by what temperature?

❒⁭ Water supply temperature ❒⁭ Outdoor air temperature ❒⁭ Water return temperature

❒⁭ The night backset thermostat

The aligning of the driver and driven pulleys is done with a:

❒⁭ Framing square Ruler ❒⁭ Straight edge ❒⁭ Allen wrench ❒⁭ Channel lock pliers

In an air conditioning system, the cooling of the air is done through the use of a direct expansion coil. This coil does which of the following?

❒⁭ Removes the heat using Freon coils and exhausts it outdoors

❒⁭ Passes the air over a Freon filled cooling coil into the room

❒⁭ Brings in outside air and cools it with Freon ❒⁭ None of the above ❒⁭ All of the above

What is the name of the part of a fire damper which controls the release of the damper in case of a fire?

❒⁭ Actuator linkage ❒⁭ Fire and flame sensor ❒⁭ Fusible link ❒⁭ A scanner electronic eye

Why are there large dampers which open directly to the outside air in a boiler room?

❒⁭ To provide combustion air for the boiler power burners

❒⁭ To provide make-up air for the unit vents ❒⁭ To vent excess heat build-up

❒⁭ To provide supply air for the venting of flue gasses

In a building with an above-ceiling plenum system, are there any return air ducts?

❒⁭ No ❒⁭ There can be in certain areas ❒⁭ Yes ❒⁭ Only if there are no fire walls

In a roof top HVAC unit, the face and bypass dampers will allow:

❒⁭ Air to pass over the heating coils ❒⁭ Air to be diverted around the coils

❒⁭ The air conditioning coils to operate ❒⁭ None of the above ❒⁭ All of the above

A thermostat can control many devices in a unit ventilator. What are two major devices a thermostat controls to regulate the heat output of the unit?

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Explain the procedure for calibrating a thermostat.

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**ELECTRICAL**

How do you reverse a three phase motor?

❒⁭ Lift the ground from the motor frame and bond it ❒⁭ Switch the white and the green

❒⁭ Switch any two leads ❒⁭ Rewind the armature ❒⁭ You would have to get a different motor

National electrical code refers to the identified conductor as being what color?

❒⁭ White ❒⁭ Black ❒⁭ Green ❒⁭ Any color

What is the difference between AC and DC voltage?

❒⁭ AC has polarity ❒⁭ DC has polarity ❒⁭ AC has a negative leg ❒⁭ DC has a negative leg

❒⁭ None of the above

In a 480 Volt 3 phase system, how many volts will be measured from any leg to ground?

❒⁭ 120 volts ❒⁭ 220 volts ❒⁭ 240 volts ❒⁭ 160 volts

When installing a duplex plug receptacle, the white wire is always installed on which lug of the plug?

❒⁭ It will depend on the plug style and UL classification ❒⁭ You will use the brass lug

❒⁭ You will use the silver lug ❒⁭ You may use either the brass or silver lug

What is the minimum wire size allowed in commercial and/or public use buildings?

❒⁭ #10 THHN ❒⁭ #12 ❒⁭ #12/3 with a ground ❒⁭ #16 ❒⁭ SJ service cord

When remodeling existing buildings, does the new wiring installation in have to be in conduit or equal protection?

Yes ❒⁭ No ❒⁭ Does not apply to remodeling ❒⁭ Should match existing wiring only

The minimum number of wires you would need to run service to a 220 volt motor would be:

❒⁭ Four ❒⁭ Three ❒⁭ Two and a ground

❒⁭ It would depend on the number of phases the motor is.

When replacing a receptacle the common wire goes to which lug?

❒⁭ Silver ❒⁭ Gold ❒⁭ Green ❒⁭ It doesn’t matter

You are changing a faulty light switch and you discover that there are three wires on three separate lugs, two seem normal, but then there is one on the opposite side of the switch. This would indicate that:

❒⁭ The person that wired this didn’t know about switches ❒⁭ This is a three-way switch

❒⁭ This switch controls more than one device ❒⁭ This switch has an internal fuse

A 30 amp. Fuse for a motor has failed and needs replaced. It may be replaced with:

❒⁭ Any available fuse of the same physical size

❒⁭ Any fuse of the same physical size and a larger amp. Rating

❒⁭ Only a fuse of the same physical size and amp rating

❒⁭ Any fuse of the same physical size and a lower amp rating.

When replacing a male plug end on an electric cord.

❒⁭ Wiring configuration does not matter ❒⁭ The ground wire always goes to the gold lug

❒⁭ The white or common wire always goes to the gold lug

❒⁭ The live or colored (usually black) wire always goes to the gold lug

When testing for voltage:

❒⁭ Always test from ground to black, then ground to white ❒⁭ Always test all wires to ground

❒⁭ Always assume that the conduit is not grounded ❒⁭ A, B, and C above

When changing the ballast for a fluorescent fixture:

❒⁭ Any ballast will work ❒⁭ The only consideration is that all the colored wires are coded the same

❒⁭ The only consideration is that it is for the same size tube

❒⁭ The first thing to check it that the voltages are the same

When making wire connections in a junction box or at a ballast replacement the recommended connection is:

❒⁭ Twisting the wire and using a twist wire nut ❒⁭ Soldering the wire together permanently

❒⁭ Twisting and taping the wires ❒⁭ Using a crimp on connectors

When replacing a single phase 115v. 2.5 amp. 1725 rpm motor, the rotation may be changed by reversing the feed wires.

❒⁭ True ❒⁭ False

GFI or GFCI (ground fault circuit interrupters) are only required if a receptacle within four feet of a sink is being used on a daily basis.

❒⁭ True ❒⁭ False

In a 115vac-house circuit the normal wiring is, black is live or “hot”, white is common, and green or bare is ground.

❒⁭ True ❒⁭ False

During a power failure or “brown out” it is important to turn off all circuit breakers

❒⁭ True ❒⁭ False

The live or “hot” wire in a circuit is usually black, but could be any color other than white or green.

❒⁭ True ❒⁭ False

Low voltage wiring, sometimes used for clocks or thermostats, does not need to be in conduit.

❒⁭ True ❒⁭ False

Low voltage wiring may only be pulled in conduit with high voltage wiring it has a grounded shield.

❒⁭ True ❒⁭ False

**GENERAL QUESTIONS**

Asbestos is:

❒⁭ A man made substance ❒⁭ A naturally occurring substance ❒⁭ Similar to sand

❒⁭ A known toxin ❒⁭ Banned from use by OSHA

When you spray a classroom with an over-the counter bug spray what additional step(s) must you perform:

❒⁭ Do not reoccupy the room for at least six hours ❒⁭ You must post a sign on the door to alert others

❒⁭ You cannot spray without being certified ❒⁭ You must spray after 3:30 pm ❒⁭ All of the above

As you are using chemicals for killing weeds, you spill some on your pant leg. To ascertain if this may be harmful to you, check:

❒⁭ Materials safety data sheet ❒⁭ The container label ❒⁭ The poison control “hot line”

❒⁭ All of the above

Below the fuel tank on a tractor is a glass bowl. This is called:

❒⁭ The fuel supply bowl ❒⁭ The dirt interceptor ❒⁭ The sediment bowl ❒⁭ The fuel shut-off bowl

An implement run off a tractor with a live PTO shaft will:

❒⁭ Stop when the clutch is pushed in ❒⁭ Raise up when the clutch is pushed in

❒⁭ Continue running when the clutch is pushed in

❒⁭ It will depend on the make and model of the tractor ❒⁭ None of the above.

The fuel on a diesel engine tractor is introduced into the cylinders by:

❒⁭ Fuel injection ❒⁭ A carburetor ❒⁭ A turbo charger ❒⁭ A constant velocity receptor system

The gas/oil mixture used in an engine will indicate it is a:

❒⁭ Four cycle engine ❒⁭ Fuel injected system ❒⁭ Snow blower engine ❒⁭ Two cycle engine

When cutting off the bottom of a wood fire rated door, the type of blade the saw should have is a:

❒⁭ Bayonet blade ❒⁭ Carbide-tipped blade ❒⁭ Rip-tooth blade ❒⁭ Cross-cut tooth blade

You install a key and knob lockset and find the key way is upside down. To correct this you would:

❒⁭ Purchase the correct lockset ❒⁭ Release the knob and turn it over

❒⁭ Turn the cylinder until the key way is correct ❒⁭ Obtain a reverse-bevel key and knob set.

Fertilizer that is applied in the fall would:

❒⁭ Be higher in nitrogen than phosphorus and potash

❒⁭ Be equal in nitrogen to phosphorus and potash

❒⁭ Be lower in nitrogen than phosphorus and potash ❒⁭ Have no nitrogen at all

❒⁭ You cannot apply fertilizer without certification

A selective herbicide will:

❒⁭ Kill all weeds and grasses ❒⁭ Kill only weeds ❒⁭ Kill only weeds identified on the label

❒⁭ Only last for one year ❒⁭ Will last for two years.

The carry over listed on a bag of herbicide will tell you that:

❒⁭ The chemical has a long shelf life ❒⁭ Its effects last for two years ❒⁭ Its effects last three years

❒⁭ None of the above ❒⁭ All of the above

Factors that will affect fertilizer and herbicides are:

❒⁭ If the grass/weeds are wet ❒⁭ If it is hot ❒⁭ If it is overcast ❒⁭ If there is a wind

❒⁭ All of the above

**CHEMICAL RATIO USAGE**

If the label reads – mix 1 part floor cleaner with 12 parts water, how many ounces of floor cleaner would you add to a 1 gallon of water? (Show all your math work).

Answer\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_oz./gal/

You have floor cleaner that requires 1 ½ ounces to a gallon of water. How much floor cleaner would you need for 5 gallons of water?

Answer\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_oz.

Calculate the following math problem.

There is a multi-purpose room that has floor tile and needs to be refinished. The Multi-purpose is 70 ft. long and 40 ft. wide. The process involves stripping off the old wax, putting down new sealer, and then waxing. The information that I would like you to give us is the amount of stripper to use, the amount of sealer, and the amount of wax needed to do the job.

How many sq. / ft. are in the gym? \_\_\_\_\_\_\_\_\_\_\_\_ sq. / ft.

The gym will require 24 gallons of diluted stripper at a 1:3 ratio to do the job. At a 1:3 diluted ratio, how many gallons of stripper will be needed?

Answer\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_ gallons needed

The next step is to seal the floor. It will require 3 coats of sealer to do a good job. The sealer will cover 1,500 sq. / ft. per gallon. How many gallons of sealer will it take to seal the floor with three coats?

Answer \_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_ gallons needed

Now it is time to apply the wax. It will require three coats of wax to give the floor the good shine. Wax will cover 2,500 sq. /ft. per gallon. How many gallons of wax will it take to complete the wax process giving the floor three coats?

Answer \_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_ gallons needed