FRANKLIN CERTIFIED CONTRACTOR
MASTER QUESTION FILE - BASE LEVEL

Category	Question
3-phase application	Overloads are NOT provided for what type of Franklin Electric motors?
3-phase application	If a reduced-voltage starter is used, it must to be set to provide full voltage to the motor within how many seconds?
3-phase application	In a booster application, horizontal operation is acceptable as long as _____?
3-phase application	A closed WYE or DELTA systems uses how many transformers?
3-phase application	The maximum number of starts per day for a 40 Hp motor and above is?
3-phase application	3-Phase submersible motors require what type of overload protection?
3-phase application	Maximum unbalance in a 3-phase system is what percentage?
3-phase application	An open WYE or DELTA systems uses how many transformers?
4-inch motors	In a single-phase, 3-wire motor, the red lead is which winding?
4-inch motors	From page 13 of the AIM Manual, the largest single-phase 4" motor is what rating?
4-inch motors	From page 40 of the AIM Manual, the actual diameter of a 4" motor is _____.
4-inch motors	In a single-phase, 3-wire motor, the black lead is which winding?
4-inch motors	From page 13 of the AIM Manual, 4" 2-wire motors are manufactured in ratings from _____ to _____.
4-inch motors	115 volt motors are available in what ratings?
4-inch motors	Franklin 4" 2-wire motors have what exclusive feature?
4-inch motors	All single-phase 4" motors from 1 1/2 to 5 Hp are what electrical type?
4-inch motors	Franklin 4" submersible motors are manufactured in ratings from _____ to _____.
4-inch motors	4" High Thrust motors are available in what Hp ratings? (standard, not special order)
4-inch pumps	Tri-Seal pumps use what type of material for the impellers?
6-inch motors	From page 40 of the AIM Manual, a 6" motor has what diameter?
6-inch motors	6-Inch motors are manufactured in ratings from _____ to _____.
6-inch motors	From page 13 of the AIM Manual, largest single-phase motor manufactured by Franklin is what in terms of horsepower?
Application	230 volts is a supply voltage or a nameplate voltage?
Application	When should an old motor lead may be reused?
Application	For operation in positions other than shaft-up, the frequency of starts should be limited to no more than _____ every 24 hours.
Application	In the cable charts, lengths not in bold type meet the NEC ampacity requirement for what type of cable?
Application	From page 13 of the AIM Manual, a single-phase, 6-Inch, 15 Hp motor has a service factor of _____.
Application	From page 13 of the AIM Manual, use of a CRC box increases efficiency by what percent?
Application	What type of check valves are not acceptable?
Application	The cooling flow required on a 6" or 8" motor is how many feet / second?
Application	From page 7 of the AIM Manual, at a flow rate of 200 GPM, head loss from flow past a 6" motor in 6" casing will be _____.
Application	Motors (without soft start) should be allowed to run a minimum of how many minutes?

FRANKLIN CERTIFIED CONTRACTOR
MASTER QUESTION FILE - BASE LEVEL

Category	Question
Application	From page 3 of the AIM Manual, the maximum number of starts per day for a 5 hp single-phase motor is _____.
Application	A submersible motor needs what 4 things for a long operational life?
Application	From page 13 of the AIM Manual, maximum service factor amps for a 2-wire, 1 hp motor are _____.
Application	Franklin submersible motors should never be used where?
Application	From page 49 of the AIM Manual, in 208V systems, what modifications are required?
Application	If the pump does not have a built-in check valve, a check valve should be installed where?
Application	The maximum number of starts per day for a 3/4 Hp motor or below is _____.
Application	Is 240 volts a supply voltage or a nameplate voltage?
Application	On a 4" motor, the lead jam nut should be tightened to how many foot pounds?
Application	The cooling flow required on a 4" High Thrust motor is how many feet / second?
Application	To withstand unscrewing torques with a safety factor of 1.5, all threaded joints should be tightened to how many foot pounds?
Application	From page 5 of the AIM Manual, for best starting of 2-wire motors, the minimum generator sizing should be _____% higher than shown in the chart.
Application	Are most generators externally or internally regulated?
Application	Franklin submersible motors can be stored down to what temperature?
Application	The allowable voltage range for a Franklin submersible motor is plus or minus _____.
Application	Franklin Electric submersible motors should have a minimum run time of _____ minute(s).
Application	Franklin submersible motors require a voltage that is within what percentage of nameplate?
Application	Should voltage always be measured line-to-ground or line-to-line?
Application	PSC motors are NOT manufactured by Franklin Electric and contain what component in the motor?
Application	True or False? Amp draw is a reliable indication of power consumption.
Application	With a service factor of 1.6, the actual horsepower a 1/2 motor is capable of delivering is _____ .
Application	Franklin motors are built for continuous duty in water temperatures up to _____. (standard product)
Application	From page 13 of the AIM Manual, service factor on a 1/2 motor is _____.
Application	From page 5 of the AIM Manual, what size of externally-regulated generator is required for a 1 Hp motor?
Application	From page 45 of the AIM Manual, resistance of 500' of 6 AWG drop cable is _____.
Application	When different cable sizes are used, the order does not matter - True or False?
Application	Drop cable charts allow for what percent of voltage drop between the supply and the motor?
Application	From page 3 of the AIM Manual, the maximum number of starts per day for a 100 hp motor is _____.
Application	From page 13 of the AIM Manual, the main winding resistance on a 115V, 1/2 hp motor is _____.
Availability	Franklin Electric has how many warehouse locations in the United States: 4, 14, or 34?
Centrifugal pumps	If you know the TDH a pump is operating at, you can use the pump curve to determine the _____.
Centrifugal pumps	A centrifugal pump is not a self-priming pump; it requires that a _____ be installed in the suction line for priming purposes.

FRANKLIN CERTIFIED CONTRACTOR
MASTER QUESTION FILE - BASE LEVEL

Category	Question
Centrifugal pumps	The sum total of suction lift, discharge elevation, friction loss and operating PSI makes up _____ _____ _____.
Centrifugal pumps	If a centrifugal pump sounds like it's pumping gravel, it's probably experiencing _____.
Centrifugal pumps	An inch of mercury (vacuum) is equivalent to _____ feet of head.
Centrifugal pumps	What is the maximum practical lift for an end suction centrifugal pump?
Centrifugal pumps	Breaking suction, or large amounts of air in the suction line can lead to _____ ___ _____.
Centrifugal pumps	What is the natural force which enables a centrifugal pump to lift water?
Centrifugal pumps	A vacuum gauge is an effective tool for measuring _____.
Centrifugal pumps	Over pumping, excessive suction lift or obstruction in the suction line can all lead to _____.
Centrifugal pumps	The suction line of a centrifugal pump needs to be properly sealed and submerged to avoid _____ _____.
Centrifugal pumps	What does NPSH stand for?
Centrifugal pumps	A pressure gauge and gate or ball valve on the discharge of a pump are an effective means of setting the _____ _____.
Control boxes	The CRC Box increases what 2 electrical parameters?
Control boxes	Which Integral Control Box is not offered as a Deluxe Control Box?
Control boxes	QD control boxes are not backward compatible - True or False?
Control boxes	The 3-wire CRC Box contains what component that the standard box does not contain?
Control boxes	What color is the QD Relay?
Control boxes	A Deluxe Control Box has what additional component that a standard control box does not?
Control boxes	What Integral Control Box is only offered as a Deluxe Control Box?
Control boxes	The QD in QD Control Box stands for _____.
Control boxes	The CRC in the CRC Control Box stands for what?
Control boxes	What is the benefit of the magnetic contactor in the Deluxe Control Box?
Electricity	The formula for 3-phase electrical power is _____.
Electricity	The electrical system equivalent to water pressure is _____.
Electricity	Current (amps) is measured with what device?
Electricity	The electrical system equivalent to GPM is _____.
Electricity	A breakdown in an electrical system's insulation is called a _____ _____.
Electricity	Electrical resistance is measured with what device?
Electricity	In a single-phase system, the formula for power is _____.
Electricity	The symbol for voltage is _____.
Electricity	The symbol for electrical resistance is _____.
Electricity	The electrical system equivalent to flow in a water system is _____.
Electricity	Power factor is the phase relationship between _____ and _____.

FRANKLIN CERTIFIED CONTRACTOR
MASTER QUESTION FILE - BASE LEVEL

Category	Question
Electricity	Voltage is measured with what device?
Electricity	The symbol for current (amps) is _____.
Electricity	A "leak" in an electrical system is called a _____ _____.
Electricity	The electrical system equivalent to psi in a water system is _____.
Electricity	The electrical equivalent to head loss in a water system is _____.
Franklin Electric	Franklin Electric's constant pressure website address is _____.com
Franklin Electric	Franklin Electric's website address is _____.com
Franklin Electric	Franklin Electric introduced the first practical, water-lubricated, residential submersible motor in 1940, 1950, or 1961?
Franklin Electric	Franklin Electric was founded in 1924, 1974, or 1944?
General	What percentage of the earth's freshwater is groundwater?
General	How many homes in the United States have a private water system (well)?
Installation	From page 41 of the AIM Manual, 6" shaft free end play is _____ to _____.
Installation	Franklin Control Boxes can be updated by a Franklin Field Service Engineer - True or False?
Installation	Franklin Electric motors can be updated how many times?
Installation	From page 41 of the AIM Manual, 4" shaft free end play is _____ to _____?
Installation	Franklin Electric motors can be updated within how many years by a Franklin Field Service Engineer?
Leads	The standard motor lead on Franklin submersibles is made of what material?
Motor construction	The epoxy fill used to encapsulate a Franklin motor provides what 3 properties?
Motor construction	Three-phase motors are available in what Hp ratings?
Motor construction	Which motors have built-in lightning arrestors?
Motor construction	The run winding is sometimes also called the _____ winding.
Motor construction	A 2-wire, single-phase motor will typically have how much more starting torque than running torque?
Motor construction	Franklin motors utilize what type of thrust bearing?
Motor construction	SandFighter motors feature what type of mechanical seal?
Motor construction	In an cap start, cap run motor, the start winding is called the _____ winding.
Motor construction	Franklin submersible motors use what for internal lubrication?
Motor construction	A 3-wire, single-phase motor will typically have how much more starting torque than running torque?
Motors	What is the formula for the horsepower delivered by a motor?
Motors	Thrust bearings are factory-tested at 50%, 100%, or 150% of the bearing's rating?
Motors	All SandFighter motors contain what type of protection component?
Motors	In a single-phase, 3-wire motor, the yellow lead is called the _____.
Motors	Starting amps are generally how much higher than running amps?

FRANKLIN CERTIFIED CONTRACTOR
MASTER QUESTION FILE - BASE LEVEL

Category	Question
Motors	Overloads are provided for all Franklin Electric submersible motors - True or False
Motors	4-Inch Super Stainless motors are tested at what pressure for how long?
Motors	A triac, found in the BIAC switch and the QD Relay, is a type of _____ switch?
Motors	Starting torque and starting amps are also called _____ _____ torque and amps.
Pumps	The 2 parts of a centrifugal pump end are the _____ and the _____.
Pumps	The thickness of the pump impeller vane determines flow or head?
Pumps	Franklin 4" pumps have what type of check valve built-in?
Pumptec	QD Pumptec can be installed in what horsepower QD Control Boxes?
Pumptec	True or false? Pumptec can be used with a CRC Control Box.
Pumptec	Pumptec Plus uses what parameter to determine is an underload / overload condition exists?
Pumptec	After calibration, Pumptec Plus will trip on underload / overload at what power loading?
Pumptec	Pumptec Plus will trip on over / under voltage at what values?
Pumptec	A steady yellow indicates what on a Pumptec Plus?
Pumptec	Pumptec and QD Pumptec protect against what type of condition?
Pumptec	A flashing yellow indicates what on a Pumptec Plus?
Pumptec	Both Pumptec and QD Pumptec measure what electrical parameter?
Pumptec	A flashing red indicates what on a Pumptec Plus?
Pumptec	A steady red indicates what on a Pumptec Plus?
Pumptec	Pumptec can be used on which Franklin motors?
Service	From the back cover of the AIM Manual, the Hotline Number is (800) xxx-xxxx.
SubDrive	The MonoDrive XT covers which Hp ratings?
SubDrive	SubDrive 300 utilizes what Hp pump curve? (standard configuration)
SubDrive	SubDrive 150 utilizes what Hp pump curve? (standard configuration)
SubDrive	The allowed input voltage range to SubDrive / MonoDrive is _____ to _____?
SubDrive	How can the output frequency of SubDrive / MonoDrive can be determined?
SubDrive	MonoDrive can be used with what horsepower ratings of 3-wire, 230V, single-phase installations?
SubDrive	SubDrive cable sizing is located where?
SubDrive	What is the output frequency range on MonoDrive?
SubDrive	The SubDrive product line offers constant pressure over what range of pressure settings?
SubDrive	SubDrive 75 utilizes what horsepower pump curve? (standard configuration)
SubDrive	On a SubDrive, you counted 12 flashes of the green light in 15 seconds. Approximately how fast is the motor running?
SubMonitor	SubMonitor continuously monitors what 3 parameters?

FRANKLIN CERTIFIED CONTRACTOR
MASTER QUESTION FILE - BASE LEVEL

Category	Question
SubMonitor	SubMonitor is designed to protect 3-phase installations from __ horsepower to __ horsepower?
Troubleshooting	If the voltage can not be corrected, what type of transformer can used to compensate?
Troubleshooting	Amp draw can be used to indicate what, in terms of the motor?
Troubleshooting	During operation, what should the current be in the red lead on a 3-wire motor with no run capacitor in the control box?
Troubleshooting	True or False? Allowable insulation resistance varies with the motor horsepower rating.
Troubleshooting	The minimum insulation resistance under any circumstances is _____ ohms.
Troubleshooting	From page 13 of the AIM Manual, the winding resistance of a 1/2 Hp, 230V, 2-wire motor should be _____ ohms.
Troubleshooting	In a 230V system, acceptable voltage limits are _____ to _____.
Troubleshooting	From page 13 of the AIM Manual, service factor maximum amps for a 1 Hp, 3-wire motor (no CRC) should be _____.
Troubleshooting	In a single-phase, 3-wire motor, the main winding resistance is measured between which 2 leads?
Troubleshooting	As the load on the motor decreases, current (amps) increase or decrease?
Troubleshooting	If a pump is operating on the far right of the pump curve, one would expect the amp draw to be more or less than service factor?
Troubleshooting	After start-up in a single-phase, 3-wire motor without a run capacitor, current in the red lead (start winding) should be _____.
Troubleshooting	As the load on the motor increases, current (amps) increase or decrease?
Troubleshooting	What 4 instruments are used to troubleshoot a submersible installation?
Troubleshooting	When a single-phase, 3-wire motor without a run capacitor is operating, the current in the yellow and black lead should be _____.
Troubleshooting	In a single-phase, 3-wire motor, the start winding resistance is measured between which 2 leads?
Troubleshooting	From page 47 of the AIM Manual, resistance between the L1 and B terminals of a QD Relay should be _____?
Troubleshooting	If a pump is operating on the far left of the pump curve, one would expect the amp draw to be more or less than service factor?
Turbines	In the turbine model number 225ST25D8B, 225 stands for _____.
Turbines	A performance curve is generated and packed with each Franklin Electric turbine - True or False?
Turbines	6" and 8" ST Series Turbine bowls are made of what material?
Turbines	8" ST Series Turbines are offered what GPM ratings?
Turbines	In the turbine model number 225ST25D8B, 25 stands for _____.
Turbines	6" and 8" ST Series Turbine pump impellers are made of what material?
Turbines	Franklin Electric Turbines are 100% wet-tested - True or False?
VFD	In terms of a VFD, what does PWM stand for?
VFD	When using a VFD, the maximum ramp time between 0 and 30 Hz is _____.
VFD	In a 2-pole motor, what is the formula for RPM?
VFD	When using a VFD, the minimum speed is _____.
Water systems	What is the formula for horsepower in a water system?
Water systems	Submersible pumps should be operated within ____% of their design point in terms of GPM.

FRANKLIN CERTIFIED CONTRACTOR
MASTER QUESTION FILE - BASE LEVEL

Category	Question
Water systems	Friction, or head loss, is determined by what 4 pipe conditions?
Water systems	The number of stages in a pump determines the amount of what produced?
Water systems	100 feet of head is equivalent to how much pressure?
Water systems	A 10 GPM submersible pump should be operated between _____ GPM and _____ GPM.
Water systems	1 psi is equivalent to how many feet of water?
Water systems	50 psi is equivalent to how many feet of head?
Water systems	On a pump curve, _____ is plotted on the vertical axis.
Water systems	1 foot of water equals how many psi?
Water systems	To calculate friction loss in a system, what 5 things much be known?
Water systems	On a pump curve, _____ is plotted on the horizontal axis.
Water systems	A centrifugal pump consists of what 2 parts?
Water systems	Water pressure that is lost due to the friction of the water inside the pipe is call _____ _____.
Water systems	As the diameter of a pipe increases, friction loss increases or decreases?
Water systems	To convert gallons per minute (GPM) to gallons per hour (GPH), multiply by _____.
Water systems	It's usually best to significantly oversize a water system. True or False?
Water systems	One sizing "rule of thumb" is to provide a GPM capacity that is equal to the number of _____ in the home.
Water systems	The 2 methods of sizing a water system are the _____ method and the _____ _____ method.
Water systems	In the Fixture Method of sizing, GPM capacity is provided that is equal to the number of _____ in the home.
Water systems	In the Peak Demand Method of sizing, the # of fixtures that will used at the same time is multiplied by _____ to determine capacity.
Water systems	A home has a total of 12 fixtures. Using the Fixture Method, what capacity should be provided in GPM?
Water systems	During peak demand, a home will have 3 water fixtures in use. Using the Peak Demand Method, what capacity should be provided in GPM?
Water systems	When the Peak Demand and Fixture Method call for different capacities, use the one that is lower or higher?
Water systems	The 3 factors need to determine pressure requirements are _____,_____, and _____.
Water systems	Friction loss is 32 psi in a system. How many feet of head is that?
Water systems	A "rule of thumb" is that each person requires _____ gallons of water per day.
Water systems	As the velocity of water increases, friction loss increases or decreases?