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Exam : **CEM**

Title : Certified Energy Manager (CEM)

Version : DEMO

1.According to ISO 50001. when performing internal audits on the energy management system in an organization the internal auditor should do which of the following? SELECT THE CORRECT ANSWER
A. Focus on the areas of significant energy use
B. Review the written procedures related to the area under audit
C. Assess actual activities as practiced against what the written procedures state
D. Look for opportunities for energy improvement and to minimize bureaucracy in the energy management system
E. All of the above
Answer: E
Explanation:
When conducting internal audits of an Energy Management System (EnMS) in accordance with ISO 50001, auditors are expected to perform several key activities to ensure the system's effectiveness and continual improvement.
These activities include:
By encompassing all these activities, internal auditors ensure a comprehensive evaluation of the EnMS, leading to effective energy management and continual improvement. Therefore, the correct answer is E. All of the above.

2.What is the purpose of monitoring energy consumption? SELECT THE CORRECT ANSWER
A. To establish a basis of management control
B. To establish when and why there is a deviation in energy consumption patterns
C. To support analysis of energy information
D. All of the above
Answer: D
Explanation:
Monitoring energy consumption is a critical component of effective energy management. It serves multiple purposes that collectively enhance an organization's ability to control energy use, identify inefficiencies, and implement improvements. These purposes include: Given that monitoring energy consumption fulfills all the above functions, the correct answer is D. All of the above.

3.According to the institute of Electrical and Electronic Engineers (IEEE) standard 519. "Recommended Practices and Requirements for Harmonic Control in Electrical Power Systems." the maximum total harmonic distortion (THD) for general low voltage systems less than 600 votts) should be: SELECT THE CORRECT ANSWER
A. Less than 20%
B. Less than 10%
C. Less than 5%
D. Less than 1%
E. Greater than 1%
Answer: C
Explanation:
The Institute of Electrical and Electronics Engineers (IEEE) Standard 519, titled "Recommended Practices and Requirements for Harmonic Control in Electrical Power Systems," sets forth guidelines to maintain the quality of electrical power by limiting harmonic distortions. According to IEEE 519, for

general low-voltage systems (defined as systems with a voltage less than 600 volts), the Total Harmonic Distortion (THD) of the voltage waveform should not exceed 5%. This threshold ensures the reliable operation of electrical equipment and minimizes potential issues such as overheating or malfunctioning caused by excessive harmonics. Therefore, the correct answer is C. Less than 5%.

4.Why do electric utility companies transmit power at high voltages? SELECT THE CORRECT ANSWER
A. Higher voltages are more stable
B. Higher voltages are safer
C. Transmission power losses (12R) are less
D. Electrical frequency is more stable
Answer: C
Explanation:
Electric utility companies transmit power at high voltages primarily to reduce transmission power losses, which are proportional to the square of the current (I^2) multiplied by the resistance (R) of the transmission lines. This relationship is expressed by the formula for power loss: $P_loss = I^2R$.
Key Points:
Conclusion:
Transmitting power at high voltages minimizes transmission losses, making it the most efficient method for long-distance electrical power delivery. Therefore, the correct answer is C.
Transmission power losses (I^2R) are less.

5.Which of the following statements regarding refrigerants is NOT correct?
5ELECT THE CORRECT ANSWER
A. R-407C is a blended Hydro Fluoro Carbon or near Azeotropic mixture, and can be used as a replacement for R-22 in commercial applications
B. R-11 and R-12 are Chloro Fluoro Carbons with significant ozone depleting potential
C. R-1234yf is a Hydro Fluoro Olefin with zero ozone depleting potential, and little global warming potential
D. R-22 is a Hydro Chloro Carbon with significant ozone depleting potential and significant global warming impact
E. R-32 and R-134a are Hydro Fluoro Carbons with zero ozone depleting potential, and significant global warming impact
Answer: D
Explanation:
Understanding the environmental impacts of various refrigerants is crucial for energy managers. Let's analyze each statement: en.wikipedia.org
A. R-407C is a blended Hydro Fluoro Carbon or near Azeotropic mixture, and can be used as a replacement for R-22 in commercial applications:
This statement is correct. R-407C is a blend of HFCs designed to replace R-22 in air conditioning systems.
B. R-11 and R-12 are Chloro Fluoro Carbons with significant ozone depleting potential:
This is correct. R-11 and R-12 are CFCs known for their high ozone depletion potential.
C. R-1234yf is a Hydro Fluoro Olefin with zero ozone depleting potential, and little global warming potential:

Correct. R-1234yf is an HFO with negligible ozone depletion and low global warming potential. D.
R-22 is a Hydro Chloro Carbon with significant ozone depleting potential and significant global warming impact:
This statement is incorrect. R-22 is a Hydrochlorofluorocarbon (HCFC), not a Hydro Chloro Carbon. While it does have ozone-depleting potential, its global warming potential is considered moderate, not significant.
E.
R-32 and R-134a are Hydro Fluoro Carbons with zero ozone depleting potential, and significant global warming impact:
This is correct. Both R-32 and R-134a are HFCs with no ozone depletion potential but have considerable global warming potential.
Conclusion:
The incorrect statement is D. R-22 is a Hydro Chloro Carbon with significant ozone depleting potential and significant global warming impact. Therefore, the correct answer is D.