

Easy

Deputy Executive Engineer (Electrician) 2026

Sports Authority of Gujarat / Assistant Engineer (Electrical)

Consider the following regarding Compressed Air Systems:

1. Reducing the delivery pressure of the compressor saves energy.
2. Leakages in the compressed air piping

A

1 only

B

2 and 3 only

C

1 and 2 only

Correct

D

1, 2 and 3

Correct Answer: C

Full Detailed Explanation

Correct Answer: C - 1 and 2 only

Quick Concept Explanation

Reducing unnecessary delivery pressure and fixing leaks saves energy. Cooler, clean intake air improves density and compressor capacity; hot humid intake does not improve volumetric efficiency. Key relation: Compressor power generally rises with pressure ratio; leakage flow also rises with pressure.

Exam focus: Find and repair leaks before adding compressor capacity. Common trap: Hot intake air reduces air density and volumetric performance.

Statement-wise Verification

Statement 1 - Correct. Reducing the delivery pressure of the compressor saves energy. Reducing unnecessary delivery pressure and fixing leaks saves energy.

Statement 2 - Correct. Leakages in the compressed air piping can account for up to 30% of energy waste. Compressed air is an expensive utility because compression converts substantial electrical input into heat.

Statement 3 - Incorrect. Air intake for the compressor should be from a hot and humid area to improve volumetric efficiency. Cooler intake air is denser and improves compressor volumetric performance.

Core Concept Compressed air is an expensive utility because compression converts substantial electrical input into heat. Reducing unnecessary delivery pressure and fixing leaks saves energy. Cooler, clean intake air improves density and compressor capacity; hot humid intake does not improve volumetric efficiency.