Moderate | Assistant Engineer (Electrical), Clas | 2025 | Building Department

A single phase motor is connected to 400V, 50Hz supply. The motor draws a current of 31.7A at a power factor 0.7 lag. The additional reactive power (in VAR)

A 4756

B 4873

C 4299

D **9055.3** Correct

Correct Answer: D

Full Detailed Explanation

Concept & ReasoningPower factor 0.7 lag means the motor absorbs inductive reactive power. A shunt capacitor supplies equal leading VARs if the target is unity power factor. Compute either Q=P tan or Q=S sin . The problem does not state a different target power factor, so the final key implies complete compensation.How to Solve It in the ExamFor unity correction, capacitor kVAR = original inductive kVAR.Important Exam PointState the target power factor; here the final answer assumes unity.Editorial / Answer-Key NoteThe official GPSC final answer key revised the provisional outcome for this question from A to D.Related Revision PathThis question sits in the revision path Power System Power Factor Correction Capacitor Banks .

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