

Moderate

Assistant Engineer (Electrical), Class 2025

Building Department

Electromagnetic torque in rotating electrical machinery is present when

A

Both stator and rotor windings carry current

Correct

B

Air gap is uniform

C

Stator winding alone carries current

D

Rotor winding alone carries current

Correct Answer: A

Full Detailed Explanation

Concept & Reasoning Electromagnetic torque is produced when two magnetic fields have a tendency to align. In a conventional machine with both stator and rotor windings, stator current produces one field and rotor current produces the other. Their interaction creates tangential force and torque. The broader energy-conversion principle also includes reluctance torque, where a wound rotor current may not be required, but the question is framed around the standard doubly excited machine model represented by the given options. How to Solve It in the Exam Torque needs interacting fields, not merely a uniform air gap. Important Exam Point Identify whether the question refers to doubly excited torque or reluctance torque. Related Revision Path This question sits in the revision path Electrical Machines → Electromechanical Energy Conversion → Torque Production .

Open live question on website:<https://sarkariresultout.com/pyq/question/gpsc-ae-electrical-q127-interaction-of-stator-and-rotor-fields/>