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**ANSWERS**

1. The power factor of a synchronous engine is changed with an adjustment in the excitation. At the point when the excitation of the engine is expanded, the force factor changes from slacking to solidarity and afterward to a main force factor. This property of the engine is used to improve the force factor of the leads, having a low slacking power factor. Regularly, when the engine is used along these lines to improve the factor, the synchronous engine is run with no mechanical burden. The excitation is balanced in such a way, that it works at a main force factor. The synchronous engine is then alluded to a synchronous condenser.
2. That implies that the three-stage current entering the stator winding has a point distinction with the voltage

The reason for utilizing synchronous engines is to utilize it in driving force factor by controlling the field current in the rotor

1. An over-energized synchronous engine has a main force factor. This makes it valuable for power factor remedy of mechanical burdens. The two transformers and enlistment engines draw slacking (polarizing) flows from the line. ... This improves the plant power factor and decreases the receptive current required from the matrix.
2. A synchronous engine has better force factor when contrasted with that of an equal enlistment engine. This is fundamentally in light of the fact that

A. synchronous engine has no slip

B. stator supply isn't required to deliver attractive field

C. mechanical burden on the rotor stays steady

D. synchronous engine has enormous airgap

1. Synchronous engines are utilized for the force factor revision Now, since the arrangement of the attractive motion (which can be considered as the responsive force segment) inside the engine is finished by the dc excitation gave on the rotor terminals, the force factor can likewise be constrained by controlling this dc excitation.
2. A synchronous engine running on no-heap with driving force factor-will go about as synchronous condenser.

A similar engine when worked with slacking power factor on no-heap will draw a responsive current from the framework relying on the framework voltage.

1. Like an enlistment machine, an under energized synchronous machine too will expend responsive force; an appropriately energized synchronous machine neither devours nor produces receptive force; An over energized synchronous machine can create receptive force.
2. Efficiency is higher than of an acceptance engine of a similar yield and voltage rating on the grounds that there are neither misfortunes identified with slip nor the extra misfortunes due to charging current. With synchronous engines, there is no distinction of speed between air hole turning attractive field and rotor.
3. Power factor of acceptance engine relies upon burden and speed, power factor of a synchronous may be fixed, normally such engines are enormous and in this way their receptive force causes tremendous misfortunes
4. The genuine force is nothing to do with it. The genuine force will be corresponding to the mechanical burden. On the off chance that the engine is uncoupled it will be (near) zero, paying little mind to the receptive circumstance. In the event that the heap is expending power, the engine will take it from the inventory to pass on. In the event that the heap is providing power the opposite will apply.
5. This an extreme activity on your hands. Enormous synchronous engines have customizable force factor. They can even have driving force factor. They are regularly set along these lines make up for the various enlistment engines. This can influence the productivity of the engine relying upon load. With the framework tuned to approach solidarity the whole dispersion framework benefits. It is a decent approach. There isn't only one kind of synchronous engine however they regularly show improvement over standard enlistment engines.
6. Synchronous engine consistently turns with synchronous speed, regardless of the stacking conditions. In this way, the viable yield isn't diminished, contrasted with acceptance engine. Along these lines, more proficiency is seen for this situation. Likewise, the working force factor is steady in synchronous engines. It is additionally a doubly energized machine, not at all like enlistment engine.
7. synchronous machines have separate DC excitation which diminishes machine's excitation reliance on primary stock, henceforth better PF. Though IM have no such arrangements, consequently low PF.
8. Power factor is a number which in little length educates us regarding the productivity of an AC machine like acceptance engine. As we probably am aware, in an inductive burden current slacks the voltage by a specific edge. Higher the slack, lesser will be the force factor. Cosine of the edge among Voltage and Current is called power factor.
9. An over-energized synchronous engine has a main force factor. This makes it valuable for power factor revision of modern burdens. The two transformers and acceptance engines draw slacking (polarizing) flows from the line. This improves the plant power factor and lessens the receptive current required from the lattice.