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Q)In a shaded pole motor, the shading coil usually consist of--> **a single turn of heavy copper wire which is short-circuited and carries only**
Q)A capacitor-start single phase induction motor is switched on to supply with its capacitor replaced by an inductor of equivalent reactance value. It will--> **not start at all**
Q)Direction of rotation of a split phase motor can be reversed by reversing the connection of--> **either starting or running winding**
Q)The range of efficiency for shaded pole motors is--> **5% to 50%**
Q)The starting capacitor of a single phase motor is--> **Electrolytic capacitor**
Q)In a split phase motor--> **the starting winding is connected through a centrifugal switch**
Q)The torque developed by a single phase induction motor at starting is--> **zero**
Q)The starting winding of a single phase induction motor is placed in the--> **Stator**
Q)In a shaded pole single-phase motor, the revolving field is produced by the use of--> **shading coils**
Q)Which of the following motor will have relatively higher power factor ?--> **Capacitor run motor**
Q)A centrifugal switch is used to dis- connect 'starting winding when motor has--> **picked up about 50 to 70 per cent of rated speed**
Q)In a split phase motor, the running winding should have--> **low resistance and high inductance**
Q)In a single phase motor the centrifugal switch--> **disconnects auxiliary winding of the motor**
Q)The value of starting capacitor of a fractional horse power motor will be around--> **300 uF**
Q)In a capacitor start single-phase motor, when capacitor is replaced by a resistance--> **motor will continue to run in same direction**
Q)The power factor of a single-phase induction motor is usually--> **lagging**
Q)If the capacitor of a single-phase motor is short-circuited--> **the motor will not start**
Q)A single-phase induction motor is--> **inherently non-self-starting with low torque**
Q)In a two value capacitor motor, the capacitor used for running purposes is--> **paper spaced oil filled type**
Q)Which of the following single-phase induction motors is generally used in time phonographs ?--> **Shaded pole**
Q)In capacitor start single-phase motors--> **current in the starting winding leads the voltage**
Q)Which of the following motor will give relatively high starting torque ?--> **Capacitor start motor**
Q)In a capacitor start and run motors the function of the running capacitor in series with the auxiliary winding is to--> **improve power factor**
Q)In a capacitor start motor, the phase displacement between starting and running winding can be nearly--> **90**
Q)For ceiling f generally the single phase motor used is--> **permanent capacitor type**
Q)The capacitance of a small single phase motor will be of the order of--> **Micro or pico farads**
Q)In A.C. series motor compensating winding is employed to--> **reduce sparking at the brushes**
Q)The single-phase series motor can operate on--> **both a.c and d.c**
Q)In a split phase motor, the ratio of number of turns for starting winding to that for running winding is--> **less than 1.**
Q)Single phase motors are commercially manufactured up to--> **2H.P**

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Q)In case of a shaded pole motor the direction of rotation of the motor is**--> from main pole to shaded pole**

Q)The number of turns in the starting winding of a capacitor start motor as compared to that for split phase motor is**--> More**

Q)If starting winding of a single-phase induction motor is left in the circuit, it will**--> draw excessive current and overheat**

Q)The motor used for the compressors is**--> capacitor-start capacitor-run motor**

Q)In an a.c series motor armature coils are usually connected to commutator**--> through resistance**

Q)Centrifugal switch disconnects the auxiliary winding of the motor at about _____ percent of synchronous speed**--> 70 to 80**

Q)In capacitor-start induction motor, the angle between starting winding current and main wind current is**--> about 75^0**

Q)The capacitor in a capacitor-start induction- run ac motor is connected in series with _____winding.**--> compensating**

Q)The least expensive fractional horse power motor is_____ motor**--> shaded pole**

Q)A 50 Hz, 4-pole single-phase induction motor will have a synchronous speed of**--> 1500 rpm**

Q)In a shaded pole motor, shading coils are used to**--> produce rotating magnetic field**

Q)A capacitor selected for capacitor-run motor should be rated for**--> peak voltage**

Q)For how many poles is a split-phase motor wound if it operates at 1750 rpm at full load from a 60 Hz source ?**--> 4 poles**

Q)In a shaded pole motor, the locked rotor current is**--> slightly more than the full load current**

Q)A single phase self-starting motor has two stator windings**--> which are placed at $90^0$and fed out of phase**

Q)Normally, the auxiliary winding in a single phase induction motor is cut off when the motor reaches a certain speed except in case of**--> capacitor start, capacitor run motor**

Q)The torque developed by a split phase motor is proportional to**--> Sine of angle between $I_m$and I_s**

Q)The resistance representing mechanical output in the equivalent circuit of an induction motor as seen from the stator is**--> $r_2^1((1/s)-1)$**

Q)For eliminating 7th harmonic from the e.m.f. wave of an alternator, the fractional-pitch must be**--> 6/7**

Q)The frequency of voltage generated by an alternator having 4-poles and rotating at 1800 r.p.m. is ..... hertz**--> 60**

Q)If, in an alternator, chording angle for fundamental flux wave is α, its value for 5th harmonic is**--> 5α**

Q)Which kind of rotor is most suitable for turbo alternators which arc designed to run at high speed?**--> Non-Salient pole type**

Q)Three-phase alternators are invariably star-connected because**--> higher terminal voltage is obtained.**

Q)If an alternator winding has a fractional pitch of 5/6, the coil span is ..... degrees.**--> 150**

Q)Which of the following is the most economical method of starting a single phase motor?**--> Capacitance start method**

Q)A three phase alternator has a phase sequence of RYB for its three output voltages. In case

the field current is reversed, the phase sequence will become--> **RYB**
Q)The armature reaction of an alternator influences--> **generated voltage per phase**
Q)In an alternator, at lagging power factor, the generated voltage per phase, as compared to that at unity power factor--> **must be more than the terminal voltage**
Q)An alternator is generating power at 210 V per phase while running at 1500 rpm. If the need of the alternator drops to 1000 rpm, the generated voltage per phase will be--> **140 V**
Q)Fleming 's left hand rule may be applied to an electric generator to find out--> **direction of induced emf**
Q)The main disadvantage of using short-pitch winding in alternators is that it--> **reduces the total voltage around the armature coils**
Q)Salient poles are generally used on--> **low and medium speed prime movers**
Q)The number of electrical degrees passed through in one revolution of a six pole synchronous alternator is--> **1080**
Q)When speed of an alternator is changed from 3600 r.p.m. to 1800 r.p.m., the generated e.m.f./phases will become--> **one-half**
Q)The harmonic which would be totally eliminated from the alternator e.m.f. using a fractional pitch of 4/5 is--> **5th**
Q)The effect of cross magnetization in an alternator field is to make the output--> **non-sinusoidal**
Q)The emf generated due to nth harmonic component of flux in an alternator will be--> **less than the value of fundamental emf.**
Q)At lagging loads, armature reaction in an alternator is--> **demagnetising**
Q)As load p.f. of an alternator becomes more leading, the value of generated voltage required to give rated terminal voltage--> **decreases**
Q)Drop in terminal voltage of an alternator due to armature reaction is countered by--> **automatic voltage regulator**
Q)At leading p.f., the armature flux in an alternator ..... the rotor flux.--> **aids**
Q)For the same power rating, an alternator operating at lower voltage will be--> **larger in size**
Q)The advantage of using short pitched windings in an alternator is that it--> **reduces the total voltage around the armature coils**
Q)In a synchronous machine, the field flux axis is ahead of the armature field axis in the direction of rotation, the machine is working as--> **synchronous generator**
Q)In a synchronous generator operating at zero pf lagging, the effect of armature reaction is--> **demagnetizing**
Q)In synchronous alternator, which of the following coils will have emf closer to sine waveform ?--> **distributed winding in short pitch coils.**
Q)Salient pole type rotors as compared to cylindrical pole type are--> **larger in diameter and smaller in axial length**
Q)In an alternator, the use of short pitch coils of 160 will indicate the absence of--> **ninth harmonic**
Q)The armature reaction of an alternator will be completely magnetizing in case the load power factor is--> **zero leading**
Q)In a synchronous generator, a divided winding rotor is preferable to a conventional winding rotor because of--> **increased steady state stability limit**

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Q)Distributed winding is preferred over concentrated winding as it**--> improves the generated emf waveform and adds rigidity and mechanical strength to**

Q)The stator winding of an alternator is normally connected in star to eliminate the _____ harmonic component of the voltage waveform**--> third**

Q)Distributed winding and short chording employed in ac machines will result in**--> reduction in both emf and harmonics**

Q)It is desirable to eliminate 5^{th} harmonic voltage from the phase voltage of an alternator. The coils should be short pitched by an electrical angle of**--> 36^0**

Q)In an alternator, which of the following coils will have emf closer to sine waveform**--> Distributed winding in short pitch coils**

Q)Hydro generators are generally employed to run at _____ rpm**--> 500**

Q)Skew of rotor bar eliminates**--> the effect of space harmonics**

Q)In a salient pole field structure, the pole shoes cover about_____ of pole pitch**--> two-third**

Q)Armature winding is one in which**--> emf is induced by the main flux**

Q)In a synchronous machine, the stator frame is made of**--> cast iron or welded steel plates**

Q)The stator of modern alternators are wound for _____ phase groups.**--> 60^0**

Q)In an alternator, the armature reaction is considered to be equivalent to a fictitious**--> reactance**

Q)In a cylindrical rotor synchronous machine the phasor addition of stator and rotor mmfs is possible because of**--> two mmfs are stationary with respect to each other**

Q)In a salient pole synchronous machine, the air gap is**--> least under the middle of the pole shoe & increases outwards**

Q)The regulation of an alternator is likely to be negative in case of**--> leading power factor of the load**

Q)In the Potier 's triangle, the Potier reactance drop per phase is 22 volts per phase at 88 amperes per phase. The Potier 's reactance per phase is**--> 0.25**

Q)The power output of an alternators is 100 kW. In order that the tangent of pf angle may be 0.8 lagging, the KVAR rating must be**--> -80 KVAR**

Q)An alternator has full load regulation of 4% when the power factor of the load is 0.8 lagging while alternator runs at 1500 rpm. The full load regulation of 1400 rpm for 0.8 pf lagging load will be**--> 4 percent**

Q)The Potier 's triangle separates the**--> armature leakage reactance and armature reaction mmf**

Q)The power output of an alternator is 40 kW and KVAR component is - 25. What will be the value of tanΦ (Φ being the power factor angle) ?**--> 0.625 leading**

Q)Magnetisation curves for no load and full load unity power factor are shown in figure below. Which is the magnetisation curve for full load 0.8 power factor? **--> curve D**

Q)The synchronous reactance of the synchronous machine is _____.**--> Ratio between open circuit voltage and short circuit current at constant field**

Q)In a 50 kVA, star connected 440 V, 4-phase 50 Hz alternator, the effective armature resistance is 0.25 ohm per phase. The synchronous reactance is 3.2 ohm per phase and leakage reactance is 0.5 ohm per phase, Percentage regulation of the alternator at UPF is approximately**--> 25%**

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Q)An alternator is delivering rated current at rated voltage and 0.8 power-factor lagging case. If it is required to deliver rated current at rated voltage and 0.8 power-factor leading, the required excitation will be**--> more**

Q)Which of the following method is likely to give the voltage regulation more than the actual value?**--> Synchronous reactance method**

Q)A 500 kVA ,2300 volt three phase star connected alternator has a full load armature-resistance drop per phase of 50 volts and a combined armature reactance plus armature-reaction drop of 500 volts per phase then the percent regulation of the alternator at unity power factor is**--> 10.5**

Q)The following figure shows the characteristics of an alternator. Which curve represents

synchronous impedance? **--> curve A**

Q)The following figure shows the characteristics of an alternator. Which curve represents open

circuit voltage? **--> curve D**

Q)The short-circuit ratio of a typical synchronous machine is obtained from the OCC and SCC

curves of the figure as **--> oa/ob**

Q)The leakage reactance of a three phase alternator is determined by performing**--> open circuit and zero power factor tests**

Q)A 500 kVA ,2300 volt three phase star connected alternator has a full load armature-resistance drop per phase of 50 volts and a combined armature reactance plus armature-reaction drop of 500 volts per phase then the percent regulation of the alternator at 0.8 power factor leading is**--> -13.2**

Q)Zero power factor method of an alternator is used to find its**--> voltage regulation**

Q)A 500 kVA ,2300 volt three phase star connected alternator has a full load armature-resistance drop per phase of 50 volts and a combined armature reactance plus armature-reaction drop of 500 volts per phase then the percent regulation of the alternator at 0.866 power factor lagging is**--> 26.3**

Q)The imaginary or fictitious part of synchronous reactance takes care of**--> armature reaction**

Q)A magnetisation curve represents the relationship between**--> exciting currents and terminal voltage**

Q)A leading pf load on an alternator on an alternator implies that its voltage regulation**--> any one of the above**

Q)As the leading power factor of the load of an alternator decreases, the magnitude of generated voltage required to give rated terminal voltage**--> decreases**

Q)Which one of the following method gives more accurate result for determination of voltage regulation of an alternator?**--> Potier triangle method**

Q)The short circuit characteristics of an alternator is**--> always linear**

Q)Regulation of an alternator supplying resistive or inductive load is**--> always positive**

Q)Armature reaction mmf and leakage reactance of a synchronous machine are determined by**-> open circuit and zpf tests**

Q)Modern alternators are designed to have poor regulation as it**--> limits the value of short**

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circuit current

Q)The synchronous reactance of an alternator is generally ____ armature resistance--> **10 to 20 times greater than**

Q)A 500 kVA, 1100 V, 50 Hz star connected three phase alternator has armature resistance of 0.1 ohms per phase and synchronous reactance of 1.5 ohms per phase then the voltage regulation at 0.9 pf lagging load is--> **41.4%**

Q)A field current of 20A in a certain alternator results in an armature current of 400A in short circuit and a terminal voltage of 2000V on open circuit. The magnitude of the internal voltage drop within the machine at a load current of 200A is--> **1000 V**

Q)When the inductive load is suddenly thrown off, the terminal voltage will--> **increase**

Q)What does the SCR of an alternator yield?--> **Reciprocal of X_s(adjusted) pu**

Q)A 100 kVA , 6.6 kV, a three phase star connected cylindrical pole alternator has a synchronous reactance of 20 ohms, neglect armature resistance, at FL,UPF, the induced emf is close to--> **7.2 kV**

Q)The regulation obtained by synchronous impedance method is always higher than the actual value because--> **synchronous reactance is assumed constant while it is not.**

Q)A single phase 2000V alternator has armature resistance and reactance of 0.8 ohms and 4.94 ohms respectively. The voltage regulation of an alternator at 100A load at 0.8 leading pf is--> **-8.9%**

Q)The calculation of voltage regulation of a three phase alternator of different methods are in the order of--> **EMF method > saturated synchronous reactance method > ASA method > MMF**

Q)The voltage regulation of an alternator having 0.75 leading pf load, no load induced emf of 2400 V and rated terminal voltage of 3000 V is ____ %--> **-20**

Q)In an alternator, a field current of 50A produces a full load armature current of 200A on short circuit and 1730 V on open circuit, then its synchronous impedance is _____ ohms--> **5**

Q)The power factor on which an alternator operates depends on the--> **nature of load being supplied**

Q)A 100 kVA, 415 V star connected synchronous machine generates rated open circuit voltage of 415 V at a filed current of 15A. The short circuit armature current at a filed current of 10A is equal to the rated armature current. The per unit saturated synchronous reactance is--> **1.731**

Q)The phasor diagram by ASA method gives--> **reliable result for regulation only**

Q)In a synchronous generator delivering lagging power factor load--> **the excitation emf leads terminal voltage by the power angle**

Q)The zero power factor characteristic for the potier diagram can be obtained by loading the alternator using--> **synchronous motor**

Q)The saturated synchronous reactance of an alternator is _____ its unsaturated synchronous reactance.--> **less than**

Q)Under short-circuit conditions, the power factor of an alternator is--> **almost zero lagging**

Q)The synchronous impedance method of finding the voltage regulation of a cylindrical rotor alternator is generally considered as--> **a pessimistic method because saturation is not considered**

Q)The effect of leading power factor on the voltage regulation of an alternator is--> **decreasing in nature**