Electrical interview question: What is meant by regenerative braking?
Answer: When the supply is cut off for a running motor, it still continue running due to inertia. In order to stop it quickly we place a load (resistor) across the armature winding and the motor should have maintained continuous field supply. so that back e.m.f voltage is made to apply across the resistor and due to load the motor stops quickly. This type of breaking is called as "Regenerative Breaking".

Electrical interview question: Why is the starting current high in a DC motor?
Answer: In DC motors, Voltage equation is V=Eb-IaRa (V = Terminal voltage,Eb = Back emf in Motor,Ia = Armature current,Ra = Armature resistance).At starting, Eb is zero. Therefore, V=IaRa, Ia = V/Ra , where Ra is very less like 0.01ohm.i.e, Ia will become enormously increased.

Electrical interview question: What are the advantages of star-delta starter with induction motor?
Answer :(1). The main advantage of using the star delta starter is reduction of current during the starting of the motor. Starting current is reduced to 3-4 times Of current of Direct online starting.(2). Hence the starting current is reduced; the voltage drops during the starting of motor in systems are reduced.

Electrical interview question: Why Delta Star Transformers are used for Lighting Loads?
Answer: For lighting loads, neutral conductor is must and hence the secondary must be star winding. And this lighting load is always unbalanced in all three phases. To minimize the current unbalance in the primary we use delta winding in the primary. So delta / star transformer is used for lighting loads.

Electrical interview question: Why in a three pin plug the earth pin is thicker and longer than the other pins?
Answer: It depends upon R=rho l/a where area(a) is inversely proportional to resistance (R), so if (a) increases, R decreases & if R is less the leakage current will take low resistance path so the earth pin should be thicker. It is longer

because the First to make the connection and last to disconnect should be earth Pin. This assures Safety for the person who uses the electrical instrument.

Electrical interview question: Why series motor cannot be started on no-load?
Answer: Series motor cannot be started without load because of high starting torque. Series motor are used in Trains, Crane etc.

Electrical interview question: Why ELCB can't work if N input of ELCB do not connect to ground?
Answer: ELCB is used to detect earth leakage fault. Once the phase and neutral are connected in an ELCB, the current will flow through phase and that much current will have to return neutral so resultant current is zero. Once there is a ground fault in the load side, current from phase will directly pass through earth and it will not return through neutral through ELCB. That means once side current is going and not returning and hence because of this difference in current ELCB will trip and it will safe guard the other circuits from faulty loads. If the neutral is not grounded, fault current will definitely high and that full fault current will come back through ELCB, and there will be no difference in current.

Electrical interview question: Why we do 2 types of earthing on tranformer ie: body earthing & neutral earthing, what is function. i am going to install a 5oo kva tranformer & 380 kva DG set what should the earthing value?
Answer: The two types of earthing are Familiar as Equipment earthing and System earthing. In Equipment earthing: body (non conducting part)of the equipment should be earthed to safeguard the human beings. System Earthing: In this neutral of the supply source (Transformer or Generator) should be grounded. With this, in case of unbalanced loading neutral will not be shifted .so that unbalanced voltages will not arise. We can protect the equipment also. With size of the equipment(transformer or alternator)and selection of relying system

earthing will be further classified into directly earthed, Impedance earthing, resistive (NGRs) earthing.

Electrical interview question: What is the difference between MCB & MCCB, Where it can be used?
Answer: MCB is miniature circuit breaker which is thermal operated and use for short circuit protection in small current rating circuit. MCCB moulded case circuit breaker and is thermal operated for over load current and magnetic operation for instant trip in short circuit condition. under voltage and under frequency may be inbuilt. Normally it is used where normal current is more than 100A.

Electrical interview question: Where should the lighting arrestor be placed in distribution lines?
Answer: Near distribution transformers and out going feeders of 11kv and incoming feeder of 33kv and near power transformers in sub-stations.

Electrical interview question: Define IDMT relay?
Answer: It is an inverse definite minimum time relay. In IDMT relay its operating is inversely proportional and also a characteristic of minimum time after which this relay operates. It is inverse in the sense ,the tripping time will decrease as the magnitude of fault current increase.

Electrical interview question: What are the transformer losses?
Answer: TRANSFORMER LOSSES - Transformer losses have two sources- copper loss and magnetic loss. Copper losses are caused by the resistance of the wire (I2R). Magnetic losses are caused by eddy currents and hysteresis in the core. Copper loss is a constant after the coil has been wound and therefore a measureable loss. Hysteresis loss is constant for a particular voltage and current. Eddy-current loss, however, is different for each frequency passed through the transformer

Electrical interview question: What is the difference between Isolator and Circuit Breaker?

Answer: Isolator is a off load device which is used for isolating the downstream circuits from upstream circuits for the reason of any maintenance on downstream circuits. It is manually operated and does not contain any solenoid unlike circuit breaker. it should not be operated while it is having load. first the load on it must be made zero and then it can safely operated. Its specification only rated current is given. But circuit breaker is on load automatic device used for breaking the circuit incase of abnormal conditions like short-circuit, overload etc., it is having three specification 1 is rated current and 2 is short circuit breaking capacity and 3 is instantaneous tripping current.

Electrical interview question: what is boucholz relay and the significance of it in to the transformer?

Answer: Boucholz relay is a device which is used for the protection of transformer from its internal faults; it is a gas based relay. whenever any internal fault occurs in a transformer, the boucholz relay at once gives a horn for some time, if the transformer is isolated from the circuit then it stop its sound itself other wise it trips the circuit by its own tripping mechanism.

Electrical interview question: What is SF6 Circuit Breaker?

Answer:SF6 is Sulpher hexa Fluoride gas.. if this gas is used as arc quenching medium in a Circuit breaker means SF6 CB.

Electrical interview question: what is ferranti effect?

Answer: Output voltage is greater than the input voltage or receiving end voltage is greater than the sending end voltage.

Electrical interview question: what is meant by insulation voltage in cables? explain it?

Answer: It is the property of a cable by virtue of it can withstand the applied voltage without rupturing it is known as insulation level of the cable.

Interview questions Part 9

Electrical interview question: how to calculate capacitor bank value to maintain unity power factor with some suitable example?

Answer:KVAR= KW(TAN(COS(-1)#e)- TAN(COS(-1)#d))

#e= EXISTING P.F.

#d= DESIRED P.F.

Electrical interview question: Tell me in detail about c.t. and p.t. ?(Company: reliance)

Answer: The term C.T means current transformer, and the term P.T means potential transformer. In ckt where measurements of high voltage and high current is involved they are used there. Particularly when a measuring device like voltmeter or ammeter is not able to measure such high value of quantity because of large value of torque due to such high value it can damage the measuring device. so, CT and PT are introduced in the ckts. They work on the same principle of transformer, which is based on linkage of electromagnetic flux produced by primary with secondary. They work on the ratio to they are designed.E.g if CTis of ratio 5000\5A and it has to measure secondary current of 8000A.then ANS=8000*5\5000=8Aand this result will be given to ammeter .and after measuring 8A we can calculate the primary current. same is
the operation of PT but measuring voltage.

Electrical interview question: There are a Transformer and an induction machine. Those two have the same supply. For which device the load current will be maximum? And why?

Answer: The motor has max load current compare to that of transformer bcoz the motor consumes real power.. and the transformer is only producing the working flux and its not consuming.. hence the load current in the transformer is because of core loss so it is minimum.

Electrical interview question: what is power factor? Whether it should be high or low? why?

Answer: Power factor should be high in order to get smooth operation of the system. Low power factor means losses will be more. it is the ratio of true power to apparent power. it has to be ideally 1. if it is too low then cable over heating & equipment overloading will occur. if it is greater than 1 then load will act as capacitor and starts feeding the source and will cause tripping.(if pf is poor ex: 0.17 to meet actual power load has to draw more current(V constant),result in more losses if pf is good ex: 0.95 to meet actual power load has to draw less current(V constant),result in less losses).

Electrical interview question: What happens if i connect a capacitor to a generator load?

Answer: Connecting a capacitor across a generator always improves power factor, but it will help depends up on the engine capacity of the alternator, otherwise the alternator will be over loaded due to the extra watts consumed due to the improvement on pf. Secondly, don't connect a capacitor across an alternator while it is picking up or without any other load.

Electrical interview question: Why the capacitors work on ac only?

Answer: Generally capacitor gives infinite resistance to dc components (i.e., block the dc components). it allows the ac components to pass through.

Electrical interview question: Explain the working principal of the circuit breaker?

Answer: Circuit Breaker is one which makes or breaks the circuit. It has two contacts namely fixed contact & moving contact. Under normal condition the moving contact comes in contact with fixed contact thereby forming the closed contact for the flow of current. During abnormal & faulty conditions (when current exceeds the rated value) an arc is produced between the fixed & moving contacts & thereby it forms the open ckt.Arc is extinguished by the Arc Quenching media like air, oil, vacuum etc.

Electrical interview question: How many types of cooling system it transformers?

Answer:1. ONAN (oil natural, air natural)

2. ONAF (oil natural, air forced)
3. OFAF (oil forced, air forced)
4. ODWF (oil direct, water forced)
5. OFAN (oil forced, air forced)

Electrical interview question: What is the function of anti-pumping in circuit breaker?
Answer: when breaker is close at one time by close push button he anti pumping contactor prevent re close the breaker by close push button after if it already close.

Electrical interview question: what is stepper motor. What is its uses?
Answer :Stepper motor is the electrical machine which act upon input pulse applied to it. it is one type of synchronous motor which runs in steps in either direction instead of running in complete cycle. so, in automation parts it is used.

Electrical interview question: What is Automatic Voltage regulator (AVR)?
Answer: AVR is an abbreviation for Automatic Voltage Regulator. It is important part in Synchronous Generators; it controls the output voltage of the generator by controlling its excitation current. Thus it can control the output Reactive Power of the Generator.

Electrical interview question: What is an exciter and how does it work?
Answer: There are two types of exciters, static exciter and rotary exciter. Purpose of exciter is to supply the excitation dc voltage to the fixed poles of generator.Rotory exciter is an additional small generator mounted on the shaft of main generator. if it is dc generator, it will supply dc to the rotor poles through slip ring and brushes(conventional alternator). if it is an ac exciter, out put of ac exciter is rectified by rotating diodes and supply dc to main fixed poles.ac exciter

is the ac generator whose field winding are stationary and armature rotates. initial voltage is built up by residual magnetisim.It gives the starting torque to the generator.

Electrical interview question: Difference between a four point starter and three point starter?
Answer: The shunt connection in four point starter is provided separately from the line where as in three point state it is connected with line which is the drawback in three point starter

Electrical interview question: Why use the VCB at High Transmission System? Why can't use ACB?
Answer: Actually the thing is vacuum has high arc quenching property compare to air becoz in VCB ,the die electric strength is equal to 8 times of air . That y always vacuum used as in HT breaker and air used as in LT .

Electrical interview question: What is the difference between surge arrestor and lightning arrestor?
Answer: LA is installed outside and the effect of lightning is grounded, where as surge arrestor installed inside panels comprising of resistors which consumes the energy and nullify the effect of surge.

Electrical interview question: Why syn. generators r used for the production of electricity?
Answer: synchronous machines have capability to work on different power factor(or say different imaginary power varying the field emf. Hence syn. generators r used for the production of electricity.

Electrical interview question: What is the difference between synchronous generator & asynchronous generator?
Answer: In simple, synchronous generator supply's both active and reactive power but asynchronous generator (induction generator) supply's only active power and observe reactive power for magnetizing. This type of generators is used in windmills.

Electrical interview question:1 ton is equal to how many watts?
Answer:1 ton = 12000 BTU/hr and to convert BTU/hr to horsepower,
12,000 * 0.0003929 = 4.715 hp therefore 1 ton = 4.715*.746 = 3.5 KW.

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Electrical interview question: Enlist types of dc generator?
Answer: D.C.Generators are classified into two types 1)separately excited d.c.generator 2)self excited d.c.generator, which is further classified into;1)series 2)shunt and
3)compound(which is further classified into cumulative and differential).

Electrical interview question: Give two basic speed control scheme of DC shunt motor?
Answer:1. By using flux control method: in this method a rheostat is connected across the field wdg to control the field current. so by changing the current the flux produced by the field wdg can be changed, and since speed is inversely proportional to flux speed can be controlled 2.armature control method:in this method a rheostat is connected across armature wdg.by varying the resistance the value of resistive drop(IaRa)can be varied,and since speed is directly propotional to Eb-IaRa the speed can be controlled.

Electrical interview question: what is the principle of motor?

Answer: Whenever a current carrying conductor is placed in a magnetic field it produce turning or twisting movement is called as torque.

Electrical interview question: what is meant by armature reaction?
Answer: The effect of armature flu to main flux is called armature reaction. The armature flux may support main flux or opposes main flux.

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Electrical interview question: What is the Polarisation index value ? (pi value)and simple definition of polarisation index ?
Answer: Its ratio between insulation resistance(IR)i.e megger value
for 10min to insulation resistance for 1 min. It ranges from 5-7 for new motors & normally for motor to be in good condition it should be Greater than 2.5 .

Electrical interview question: What will happen when power factor is leading in distribution of power?
Answer: If their is high power factor, i.e if the power factor is close to one:
1.losses in form of heat will be reduced,

2.cable becomes less bulky and easy to carry, and very
cheap to afford, &
3. it also reduces over heating of tranformers.

Electrical interview question: what is the one main difference between UPS & inverter ? And electrical engineering & electronics engineering ?

Answer: uninterrupted power supply is mainly use for short time means according to ups VA it gives backup. ups is also two types : on line and offline . online ups having high volt and amp for long time backup with with high dc voltage. but ups start with 12v dc with 7 amp. but inverter is start with 12v,24,dc to 36v dc and 120amp to 180amp battery with long time backup.

Electrical interview question: What is 2 phase motor?

Answer: A two phase motor is a motor with the starting winding and the running winding have a phase split. e.g;ac servo motor.where the auxiliary winding and the control winding have a phase split of 90 degree.

Electrical interview question: Advantages of vvvf drives over non vvvf drives for EOT cranes?

Answer:1.smooth start and stop.

2.no jerking of load.

3.exact posiitoning

4.better protection for motor.

5.high/low speed selection.

6.reliability of break shoe.

7.programmable break control.

8.easy circutry

9.reduction in controls

10.increases motor life

Electrical interview question: What is the significance of vector grouping in Power Transformers?

Answer: Every power transformer has a vector group listed by its manufacturer. Fundamentally it tells you the information about how the windings are connected (delta or wye) and the phase difference between the current and voltage. EG. DYN11 means Delta primary, Wye Secondary and the current is at 11 o clock reffered to the voltage.

Electrical interview question :Which type of A.C motor is used in the fan (ceiling fan, exhaust fan, padestal fan, bracket fan etc) which are find in the houses ?
Answer:Its Single Phase induction motor which mostly squirrel cage rotor and are capacitor start capacitor run.

Electrical interview question: why, when birds sit on transmission lines or current wires doesn't get shock?
Answer: Its true that if birds touch the single one line (phase or neutral) they don't get electrical shock... if birds touch 2 lines than the circuit is closed and they get electrical shock.. so if a human touch single one line(phase) then he doesn't get shock if he is in the air (not touching - standing on the ground if he is standing on the ground then touching the line (phase) he will get a shock because the ground on what we standing is like line (ground bed - like neutral) and in the most of electric lines the neutral is grounded... so that means that human who touch the line closes the circuit between phase and neutral.

Electrical interview question: what is meant by armature reaction?
Answer: The effect of armature flu to main flux is called armature reaction. The armature flux may support main flux or opposes main flux.

Electrical interview question: what happen if we give 220 volts dc supply to d bulb r tube light?

Answer: Bulbs [devices] for AC are designed to operate such that it offers high impedance to AC supply. Normally they have low resistance. When DC supply is applied, due to low resistance, the current through lamp would be so high that it may damage the bulb element.

Electrical interview question: Which motor has high Starting Torque and Staring current DC motor, Induction motor or Synchronous motor?
Answer: DC Series motor has high starting torque. We can not start the Induction motor and Synchronous motors on load, but can not start the DC series motor without load.

Electrical interview question: what is ACSR cable and where we use it?
Answer: ACSR means Aluminum conductor steel reinforced, this conductor is used in transmission & distribution.

Electrical interview question: What is vaccum currcuit breaker.define with cause and where be use it Device?
Answer :A breaker is normally used to break a ciruit. while breaking the circuit, the contact terminals will be separated. At the time of seperation an air gap is formed in between the terminals. Due to existing current flow the air in the gap is ionised and results in the arc. various mediums are used to quench this arc in respective CB's. but in VCB the medium is vaccum gas. since the air in the CB is having vaccum pressure the arc formation is interrupted. VCB's can be used upto 11kv.

Electrical interview question: How tubelight circuit is connected and how it works?
Answer: A choke is connected in one end of the tube light and a starter is in series with the circuit. When supply is provided the starter will interrupt the supply intermittent cycle of AC. Due to the sudden change of supply the choke will generate around 1000volts. This volt will capable of to break the electrons inside the tube to make electron flow. Once the current passes through the tube the starter circuit will be out of part. Now there is no change of supply causes choke voltage normalized and act as minimize the current.

Electrical interview question: what is MARX CIRCUIT?
Answer: It is used with generators for charging a number of capacitor in parallel and discharging them in series. It is used when voltage required for testing is higher than the available.

Electrical interview question: What is encoder, how it function?
Answer: An encoder is a device used to change a signal (such as a bitstream) or data into a code. The code may serve any of a number of purposes such as compressing information for transmission or storage, encrypting or adding redundancies to the input code, or translating from one code to another. This is usually done by means of a programmed algorithm, especially if any part is digital, while most analog encoding is done with analog circuitry.

Electrical interview question: What are the advantages of speed control using thyrister?
Answer: Advantages :1. Fast Switching Characterestics than Mosfet, BJT, IGBT 2. Low cost 3. Higher Accuract.

Electrical interview question: Why Human body feel Electric shock ?? n in an Electric train during running , We didnt feel any Shock ? why?
Answer: Unfortunately our body is a pretty good conductor of electricity, The golden rule is Current takes the lowest resistant path if you have insulation to our feet as the circuit is not complete (wearing rubber footwear which doing some repairs is advisable as our footwear is a high resistance path not much current flows through our body).The electric train is well insulated from its electrical system.

Electrical interview question: what is the principle of motor?
Answer: Whenever a current carrying conductor is placed in an magnetic field it produce turning or twisting movement is called as torque.

Electrical interview question: What is electric traction?

Answer: Traction means using the electric power for traction system i.e. for railways, trams, trolleys etc. electric traction means use of the electricity for all these . now a days, magnetic traction is also used for bullet trains. basically dc motors aroused for electric traction systems.

Electrical interview question: How can you start-up the 40w tube lite with 230v AC/DC without using any choke/Coil?
Answer: I t's possible by means of Electronic choke. Otherwise it's not possible to ionise the particles in tube. Light, with normal voltage.

Electrical interview question: What is "pu" in electrical engg?
Answer: Pu stands for per unit and this will be used in power system single line diagram there it is like a huge electrical circuit with no of componenets (generators, transformers, loads) with different ratings (in MVA and KV). To bring all the ratings into common platform we use pu concept in which, in general largest MVA and KV ratings of the component is considered as base values, then all other component ratings will get back into this basis. Those values are called as pu values. (p.u=actual value/base value).

Electrical interview question: Operation carried out in Thermal power station?
Answer: The water is obtained in the boiler and the coal is burnt so that steam is obtained this steam is allowed to hit the turbine , the turbine which is coupled with the generator generates the electricity

Electrical interview question: Why link is provided in neutral of an ac circuit and fuse in phase of ac circuit?
Answer: Link is provided at a Neutral common point in the circuit from which various connection are taken for the individual control circuit and so it is given in a link form to withstand high Amps. But in the case of Fuse in the Phase of AC circuit it is designed such that the fuse rating is calculated for the particular circuit (i.e load) only.So if any malfunction happens the fuse connected in the particular control circuit alone will blow off.

Electrical interview question: what is the diff. btwn. electronic regulator and ordinary rheostat regulator for fans?

Answer: The difference between the electronic and ordinary regulator is that in electronic reg. power losses are lessi.e.for as we decrease the speed the electronic reg. give the power needed for that particular speed but in case of ordinary rh type reg. the power wastage is same for every speed and no power is saved. In electronic regulator triac is employed for speed cntrl.by varying the firing angle speed is controlled but in rheostat ctrl resistance is decreased by steps to achieve speed control.

(Tips to bloggers:keyword density is more important in search engine ranking)