AC GENERATOR PROJECT REPORT pdf

1: physics project on ac generator for class 12 pdf

Project report on physics A.C. Generator Physics Project A.C. Generator - Introduction A.C. Generator is a device which is used to convert the mechanical energy in to electrical energy is called electric generator.

Some web resources The schematics shown here are idealised, to make the principles obvious. For example, the animation at right has just one loop of wire, no bearings and a very simple geometry. Real motors use the same principles, but their geometry is usually complicated. If you already understand the basic principles of the various types of motors, you may want to go straight to the more complex and subtle cases described in How real electric motors work , by Prof John Storey. DC motors A simple DC motor has a coil of wire that can rotate in a magnetic field. The current in the coil is supplied via two brushes that make moving contact with a split ring. The coil lies in a steady magnetic field. The forces exerted on the current-carrying wires create a torque on the coil. The two forces shown here are equal and opposite, but they are displaced vertically, so they exert a torque. The forces on the other two sides of the coil act along the same line and so exert no torque. Some use the right hand, some the left. For students who know vector multiplication , it is easy to use the Lorentz force directly: That is the origin of the diagram shown here. The coil can also be considered as a magnetic dipole, or a little electromagnet, as indicated by the arrow SN: In the sketch at right, the electromagnet formed by the coil of the rotor is represented as a permanent magnet, and the same torque North attracts South is seen to be that acting to align the central magnet. Throughout, we use blue for the North pole and red for the South. This is just a convention to make the orientation clear: Note the effect of the brushes on the split ring. When the plane of the rotating coil reaches horizontal, the brushes will break contact not much is lost, because this is the point of zero torque anyway â€" the forces act inwards. The angular momentum of the coil carries it past this break point and the current then flows in the opposite direction, which reverses the magnetic dipole. So, after passing the break point, the rotor continues to turn anticlockwise and starts to align in the opposite direction. The torque generated over a cycle varies with the vertical separation of the two forces. It therefore depends on the sine of the angle between the axis of the coil and field. However, because of the split ring, it is always in the same sense. The animation below shows its variation in time, and you can stop it at any stage and check the direction by applying the right hand rule. Have a look at the next animation. The coil, split ring, brushes and magnet are exactly the same hardware as the motor above, but the coil is being turned, which generates an emf. The animation above would be called a DC generator. As in the DC motor, the ends of the coil connect to a split ring, whose two halves are contacted by the brushes. This is good news, because the split rings cause sparks, ozone, radio interference and extra wear. If you want DC, it is often better to use an alternator and rectify with diodes. In the next animation, the two brushes contact two continuous rings, so the two external terminals are always connected to the same ends of the coil. This is an AC generator. The advantages of AC and DC generators are compared in a section below. We saw above that a DC motor is also a DC generator. Similarly, an alternator is also an AC motor. However, it is a rather inflexible one. See How real electric motors work for more details. Back emf Now, as the first two animations show, DC motors and generators may be the same thing. For example, the motors of trains become generators when the train is slowing down: Recently, a few manufacturers have begun making motor cars rationally. In such cars, the electric motors used to drive the car are also used to charge the batteries when the car is stopped - it is called regenerative braking. So here is an interesting corollary. Every motor is a generator. This is true, in a sense, even when it functions as a motor. The emf that a motor generates is called the back emf. So, if the motor has no load, it turns very quickly and speeds up until the back emf, plus the voltage drop due to losses, equal the supply voltage. When the motor is loaded, then the phase of the voltage becomes closer to that of the current it starts to look resistive and this apparent resistance gives a voltage. So the back emf required is smaller, and the motor turns more slowly. To add the back emf, which is inductive, to the resistive component, you need to add voltages that are out of phase. Coils usually have cores In practice, and unlike the diagrams we have drawn , generators and DC motors often have a high permeability core inside the coil, so that large magnetic fields are produced by modest currents. This is shown at left in the figure below in which the stators the magnets which are stat-ionary are permanent magnets. The two stators are wound in the same direction so as to give a field in the same direction and the rotor has a field which reverses twice per cycle because it is connected to brushes, which are omitted here. One advantage of having wound stators in a motor is that one can make a motor that runs on AC or DC, a so called universal motor. When you drive such a motor with AC, the current in the coil changes twice in each cycle in addition to changes from the brushes , but the polarity of the stators changes at the same time, so these changes cancel out. For advantages and disadvantages of permanent magnet versus wound stators, see below. Also see more on universal motors. Build a simple motor To build this simple but strange motor, you need two fairly strong magnets rare earth magnets about 10 mm diameter would be fine, as would larger bar magnets , some stiff copper wire at least 50 cm , two wires with crocodile clips on either end, a six volt lantern battery, two soft drink cans, two blocks of wood, some sticky tape and a sharp nail. Wind 5 to 20 turns in a circle about 20 mm in diameter, and have the two ends point radially outwards in opposite directions. These ends will be both the axle and the contacts. If the wire has lacquer or plastic insulation, strip it off at the ends. The supports for the axle can be made of aluminium, so that they make electrical contact. For example poke holes in a soft drink cans with a nail as shown. Position the two magnets, north to south, so that the magnetic field passes through the coil at right angles to the axles. Tape or glue the magnets onto the wooden blocks not shown in the diagram to keep them at the right height, then move the blocks to put them in position, rather close to the coil. Rotate the coil initially so that the magnetic flux through the coil is zero, as shown in the diagram. Now get a battery, and two wires with crocodile clips. Connect the two terminals of the battery to the two metal supports for the coil and it should turn. It often stops at the position where there is no torque on the coil. The optimum number of turns in the coil depends on the internal resistance of the battery, the quality of the support contacts and the type of wire, so you should experiment with different values. As mentioned above, this is also a generator, but it is a very inefficient one. To make a larger emf, use more turns you may need to use finer wire and a frame upon which to wind it. You could use eg an electric drill to turn it quickly, as shown in the sketch above. Use an oscilloscope to look at the emf generated. Is it AC or DC? This motor has no split ring, so why does it work on DC? However, if the current is slightly less in one half cycle than the other, then the average torque will not be zero and, because it spins reasonably rapidly, the angular momentum acquired during the half cycle with greater current carries it through the half cycle when the torque is in the opposite direction. At least two effects can cause an asymmetry. Even if the wires are perfectly stripped and the wires clean, the contact resistance is unlikely to be exactly equal, even at rest. Also, the rotation itself causes the contact to be intermittent so, if there are longer bounces during one phase, this asymmetry is sufficient. In principle, you could partially strip the wires in such a way that the current would be zero in one half cycle. An alternative relisation of the simple motor, by James Taylor. An even simpler motor one that is also much simpler to understand! AC motors With AC currents, we can reverse field directions without having to use brushes. This is good news, because we can avoid the arcing, the ozone production and the ohmic loss of energy that brushes can entail. Further, because brushes make contact between moving surfaces, they wear out. The first thing to do in an AC motor is to create a rotating field. With single phase AC, one can produce a rotating field by generating two currents that are out of phase using for example a capacitor. This gives a field rotating counterclockwise. In a capacitor, the voltage is a maximum when the charge has finished flowing onto the capacitor, and is about to start flowing off. Thus the voltage is behind the current. In a purely inductive coil, the voltage drop is greatest when the current is changing most rapidly, which is also when the current is zero. The voltage drop is ahead of the current. In this animation, the graphs show the variation in time of the currents in the vertical and horizontal coils. The plot of the field components Bx and By shows that the vector sum of these two fields is a rotating field. The main picture shows the rotating field. It also shows the polarity of the magnets: If we put a permanent magnet in this area of rotating field, or if we put in a coil whose current always runs in the same direction, then this becomes a synchronous motor. Under a wide range of conditions, the motor will turn at the speed of the magnetic field.

2: CBSE AC Generator or Dynamo

An ac generator, or 'alternator', is used to produce ac voltages for transmission via the grid system or, locally, as portable generators. 4. All of our household appliances runs on ac current.

Requires 2 AA batteries A science fair project: Electric motor generator kit may be used for a science project, technology project, display project, or an engineering project for your science fair. Your completed project will also be an educational tool for yourself and your classmates who need to understand simple electric circuits, production of electricity and the conversion of energy. Cut a length of plastic tube long enough to connect both shafts together while being straight and covering both shafts. Mount the battery holder using two screws or hook and loop tape on the left, near the other motor generator. Connect the black wire of the battery holder directly to one of the metal contacts of the motor on the left. These two screws will form a switch, so one of them will hold the switch plate. Connect the red wire of the battery holder to one of the screws of the switch. Insert the batteries, screw a lamp in the lampholder and then push the switch to close the circuit in the left. The generator on the right will turn on the light bulb. The generator produces electricity that will light up the light bulb. Get ready for scientific observations: Before you continue with the observation and reporting, you must learn how to use your multimeter to measure the electrical voltage between two points. Understand the difference between DC voltage and AC voltage. Question for your Science Project: I hypothesize that the voltage on the motor side is more than the voltage on the generator side. Observation and Reporting Connect the probes of the multimeter to the wires coming out of the battery holder. Read and record the DC voltage while the motor is nor running. Push the button close the switch and repeat your measurement while the motor is running. Connect the probes of the multimeter to the metal contacts of the generator and measure the AC voltage while the generator is running and the lamp is turned on. Open the circuit by unscrewing the lamp and then connect the probes of the multimeter to the metal contacts of the generator and measure the AC voltage while the generator is running. Record your readings in a data table like this:

3: How to Make a Simple Electric Generator: 10 Steps (with Pictures)

Project report on physics - A.C. Generator A.C. Generator - Introduction A.C. Generator is a device which is used to convert the mechanical energy in to electrical energy is called electric generator.

All pictures are copyright of MiniScience. Grades 8 to 12 Introduction: Initial Observation Making an electric generator is a good way of learning the principles of generators. It also is an exciting science project. As an experimental project, you need to come up with questions about the factors that may affect the rate of production of electricity. With this modification you have choice to purchase all material separately and construct your generator from the ground up. Gather information about your project. If you are a basic or advanced member of ScienceProject. In any case it is necessary for you to read additional books, magazines or ask professionals who might know in order to learn more about the subject of your research. Keep track of where you got your information from. Electric Generator When a conductor such as a copper wire cross magnetic fields, an electric force is created in the wire. Almost all electric generators have a rotor and a stator. Rotor is the magnet that rotates inside stator. Stator is made of one or more coils of wire. What do you want to find out? Write a statement that describes what you want to do. Use your observations and questions to write the statement. The purpose of this project is to build a simple electric generator. If you want to build an electric generator as a display project, you will not need any question. If you want to do this as an experimental project, following are some suggested questions: How does the speed of turning rotor affect the production of electricity? How does the diameter of wire coil affect the amount of electricity? How does the number of loops of wire in the coil affect the amount of electricity? How does the diameter of coil wire affect the electric current? How do the material used in the construction of an electric generator affect the production of electricity? When you think you know what variables may be involved, think about ways to change one at a time. If you change more than one at a time, you will not know what variable is causing your observation. Sometimes variables are linked and work together to cause something. At first, try to choose variables that you think act independently of each other. Dependent and Independent Variables The factor that you are testing is your independent variable. For example the speed of turning and diameter of wire are samples of independent variables. The rate of production of electricity is the dependent variable. Based on your gathered information, make an educated guess about the answer to your question or the result of your experiment. Depending on the question that you select, you may predict an answer. That is called your hypothesis. Design an experiment to test each hypothesis. Make a step-by-step list of what you will do to answer each question. This list is called an experimental procedure. For an experiment to give answers you can trust, it must have a "control. It is a separate experiment, done exactly like the others. The only difference is that no experimental variables are changed. A control is a neutral "reference point" for comparison that allows you to see what changing a variable does by comparing it to not changing anything. Dependable controls are sometimes very hard to develop. They can be the hardest part of a project. Without a control you cannot be sure that changing the variable causes your observations. A series of experiments that includes a control is called a "controlled experiment. If you are buying a kit, all the wooden parts are included and they are already cut to the size. So you just need to connect them. Cut two square pieces from the balsa wood 3. Make another hole with the diameter of your rod magnet in the center of the larger wood dowel piece for the magnet to go through. Wood dowels after completing the step 4 Wood dowels after completing the step 5 Adult supervision and professional help is required for all cuttings and hole makings. Insert the magnet in the hole of the wood dowel. Center it and use some glue to secure it. Use one large square balsa wood and four smaller rectangular balsa woods to make a box. Insert your wood dowel into the hole in the center of the box. At this time the magnet is inside the box. Place the other large square to complete the box. Apply some glue to the edges and wait for the glue to dry. By now, you have a box and inside the box you have a magnet that can spin when you spin the wood dowel. Wrap turns of copper wire around the box and use masking tape to secure it. Remove the insulation from the ends of the wire and connect it to the screws of the bulb holder or base. Insert the light bulb Spin the wood dowel fast to get the light. Following are the material that you need in order to construct a wooden electric generator.

4: Create a visual report of Project data in Excel or Visio - Office Support

physics projects for class 12 prism holow, project of investigayion from physics about angle of daveation on angle of incidence using hollow prism pdf download, physics projects for class 12th on hollow prism, prism experiment of class 12, physics project for class 11, physics prism project class 12, cbse class 12 physics hollow prism project.

Whatever may be the types of generators, it always converts mechanical power to electrical power. An AC generator produces alternating power. A DC generator produces direct power. According to this law, when a conductor moves in a magnetic field it cuts magnetic lines of force, due to which an emf is induced in the conductor. The magnitude of this induced emf depends upon the rate of change of flux magnetic line force linkage with the conductor. This emf will cause a current to flow if the conductor circuit is closed. Hence the most basic tow essential parts of a generator are a magnetic field conductors which move inside that magnetic field. Now we will go through the working principle of DC generator. As the working principle of an AC generator is not in the scope of our discussion in this section. Single Loop DC Generator In the figure above, a single loop of conductor of rectangular shape is placed between two opposite poles of magnet. When the loop rotates from its vertical position to its horizontal position, it cuts the flux lines of the field. As during this movement two sides, i. As the loop gets closed there will be a current circulating through the loop. This rule says that if you stretch thumb, index finger and middle finger of your right-hand perpendicular to each other, then thumbs indicates the direction of motion of the conductor , index finger indicates the direction of magnetic field , i. Now if we apply this right-hand rule, we will see at this horizontal position of the loop, current will flow from point A to B and on the other side of the loop current will flow from point C to D. Now if we allow the loop to move further, it will come again to its vertical position, but now the upper side of the loop will be CD, and lower side will be AB just opposite of the previous vertical position. At this position, the tangential motion of the sides of the loop is parallel to the flux lines of the field. Hence there will be no question of flux cutting, and consequently, there will be no current in the loop. If the loop rotates further, it comes to again in a horizontal position. Now if the loop is continued to rotate about its axis. Again, when it comes in front of N pole, the current flows from B to A. If we observe this phenomenon differently, we can conclude, that each side of the loop comes in front of N pole, the current will flow through that side in the same direction, i. Similarly, each side of the loop comes in front of S pole, the current through it flows in the same direction, i. From this, we will come to the topic of the principle of DC generator. Now the loop is opened and connected it with a split ring as shown in the figure below. Split rings, made of a conducting cylinder, gets cut into two halves or segments insulated from each other. We connect the external load terminals with two carbon brushes which rest on these split slip ring segments. In the next half revolution, in the figure, the direction of the induced current in the coil is reversed. But at the same time the position of the segments a and b are also reversed which results that brush no 1 comes in touch with the segment b. Hence, the current in the load resistance again flows from L to M. The waveform of the current through the load circuit is as shown in the figure. This current is unidirectional. The above content is the basic working principle of DC generator, explained by single loop generator model. The positions of the brushes of DC generator are so that the change over of the segments a and b from one brush to other takes place when the plane of rotating coil is at a right angle to the plane of the lines of force. It is to become in that position, the induced emf in the coil is zero.

5: project on ac generator for class 12 pdf

Class 12 Biology Project on Ebola CBSE (Brief Report on Ebola) An ac generator, or 'alternator', is used to produce ac Documents Similar To AC Generator New.

The rotating part of an electrical machine Stator: The stationary part of an electrical machine, which surrounds the rotor One of these parts generates a magnetic field, the other has a wire winding in which the changing field induces an electric current Field winding or field magnets PMs: The magnetic field producing component of an electrical machine. The magnetic field of the dynamo or alternator can be provided by either wire windings called field coils or permanent magnets. Electrically excited generators includes an excitation system to control the field winding flux. A generator using permanent magnets PMs is sometimes called a magneto , or permanent magnet synchronous generators PMSMs. The power-producing component of an electrical machine. In a generator, alternator, or dynamo the armature windings generate the electric current, which provides power to an external circuit. The armature can be on either the rotor or the stator, depending on the design, with the field coil or magnet on the other part. History[edit] Before the connection between magnetism and electricity was discovered, electrostatic generators were invented. They operated on electrostatic principles, by using moving electrically charged belts, plates, and disks that carried charge to a high potential electrode. The charge was generated using either of two mechanisms: Such generators generated very high voltage and low current. Because of their inefficiency and the difficulty of insulating machines that produced very high voltages, electrostatic generators had low power ratings, and were never used for generation of commercially significant quantities of electric power. Their only practical applications were to power early X-ray tubes , and later in some atomic particle accelerators. Faraday disk generator[edit] The Faraday disk was the first electric generator. The horseshoe-shaped magnet A created a magnetic field through the disk D. When the disk was turned, this induced an electric current radially outward from the center toward the rim. The current flowed out through the sliding spring contact m, through the external circuit, and back into the center of the disk through the axle. Homopolar generator The operating principle of electromagnetic generators was discovered in the years of â€” by Michael Faraday. He also built the first electromagnetic generator, called the Faraday disk ; a type of homopolar generator , using a copper disc rotating between the poles of a horseshoe magnet. It produced a small DC voltage. This design was inefficient, due to self-cancelling counterflows of current in regions of the disk that were not under the influence of the magnetic field. While current was induced directly underneath the magnet, the current would circulate backwards in regions that were outside the influence of the magnetic field. This counterflow limited the power output to the pickup wires, and induced waste heating of the copper disc. Later homopolar generators would solve this problem by using an array of magnets arranged around the disc perimeter to maintain a steady field effect in one current-flow direction. Another disadvantage was that the output voltage was very low, due to the single current path through the magnetic flux. Experimenters found that using multiple turns of wire in a coil could produce higher, more useful voltages. Since the output voltage is proportional to the number of turns, generators could be easily designed to produce any desired voltage by varying the number of turns. Wire windings became a basic feature of all subsequent generator designs. In the prototype of the single-pole electric starter finished between and both the stationary and the revolving parts were electromagnetic. It was also the discovery of the principle of dynamo self-excitation , [2] which replaced permanent magnet designs. The commutator is located on the shaft below the spinning magnet. This large belt-driven high-current dynamo produced amperes at 7 volts. Dynamos are no longer used due to the size and complexity of the commutator needed for high power applications. However many early uses of electricity required direct current DC. In the first practical electric generators, called dynamos , the AC was converted into DC with a commutator , a set of rotating switch contacts on the armature shaft. One of the first dynamos was built by Hippolyte Pixii in The dynamo was the first electrical generator capable of delivering power for industry. The Woolrich Electrical Generator of , now in Thinktank, Birmingham Science Museum , is the earliest electrical generator used in an industrial process. Varley took out a patent on 24 December , while Siemens and

Wheatstone both announced their discoveries on 17 January , the latter delivering a paper on his discovery to the Royal Society. The "dynamo-electric machine" employed self-powering electromagnetic field coils rather than permanent magnets to create the stator field. This invention led directly to the first major industrial uses of electricity. For example, in the s Siemens used electromagnetic dynamos to power electric arc furnaces for the production of metals and other materials. The dynamo machine that was developed consisted of a stationary structure, which provides the magnetic field, and a set of rotating windings which turn within that field. On larger machines the constant magnetic field is provided by one or more electromagnets, which are usually called field coils. Large power generation dynamos are now rarely seen due to the now nearly universal use of alternating current for power distribution. Before the adoption of AC, very large direct-current dynamos were the only means of power generation and distribution. AC has come to dominate due to the ability of AC to be easily transformed to and from very high voltages to permit low losses over large distances. Synchronous Generators Alternating current generators [edit] Ferranti alternating current generator , c. Through a series of discoveries, the dynamo was succeeded by many later inventions, especially the AC alternator , which was capable of generating alternating current. It is commonly known to be the Synchronous Generators SGs. The synchronous machines are directly connected to the grid and need to be properly synchronized during startup [10]. Moreover, they are excited with special control to enhance the stability of the power system [11]. Faraday himself built an early alternator. His machine was a "rotating rectangle", whose operation was heteropolar - each active conductor passed successively through regions where the magnetic field was in opposite directions. Gordon , in The first public demonstration of an "alternator system" was given by William Stanley, Jr. Ferranti went on to design the Deptford Power Station for the London Electric Supply Corporation in using an alternating current system. On its completion in , it was the first truly modern power station, supplying high-voltage AC power that was then "stepped down" for consumer use on each street. This basic system remains in use today around the world. A small early s 75 kVA direct-driven power station AC alternator, with a separate belt-driven exciter generator. After , polyphase alternators were introduced to supply currents of multiple differing phases. Excitation magnetic As the requirements for larger scale power generation increased, a new limitation rose: Diverting a small amount of the power generated by the generator to an electromagnetic field coil allowed the generator to produce substantially more power. This concept was dubbed self-excitation. The field coils are connected in series or parallel with the armature winding. When the generator first starts to turn, the small amount of remanent magnetism present in the iron core provides a magnetic field to get it started, generating a small current in the armature. This flows through the field coils, creating a larger magnetic field which generates a larger armature current. This "bootstrap" process continues until the magnetic field in the core levels off due to saturation and the generator reaches a steady state power output. Very large power station generators often utilize a separate smaller generator to excite the field coils of the larger. In the event of a severe widespread power outage where islanding of power stations has occurred, the stations may need to perform a black start to excite the fields of their largest generators, in order to restore customer power service. Other types of DC generator use a separate source of direct current to energize their field magnets. Homopolar generator A homopolar generator is a DC electrical generator comprising an electrically conductive disc or cylinder rotating in a plane perpendicular to a uniform static magnetic field. A potential difference is created between the center of the disc and the rim or ends of the cylinder , the electrical polarity depending on the direction of rotation and the orientation of the field. It is also known as a unipolar generator, acyclic generator, disk dynamo, or Faraday disc. The voltage is typically low, on the order of a few volts in the case of small demonstration models, but large research generators can produce hundreds of volts, and some systems have multiple generators in series to produce an even larger voltage. MHD generator A magnetohydrodynamic generator directly extracts electric power from moving hot gases through a magnetic field, without the use of rotating electromagnetic machinery. MHD generators were originally developed because the output of a plasma MHD generator is a flame, well able to heat the boilers of a steam power plant. Alternating current AC [edit] Main article: Induction generator Induction AC motors may be used as generators, turning mechanical energy into electric current. Induction generators operate by mechanically turning their rotor faster than the synchronous speed, giving negative slip. A regular AC asynchronous motor usually can be used as a generator, without any internal modifications. Induction generators are useful in applications such as minihydro power plants, wind turbines, or in reducing high-pressure gas streams to lower pressure, because they can recover energy with relatively simple controls. They do not require an exciter circuit because the rotating magnetic field is provided by induction from the stator circuit. They also do not require speed governor equipment as they inherently operate at the connected grid frequency. To operate, an induction generator must be excited with a leading voltage; this is usually done by connection to an electrical grid, or sometimes they are self-excited by using phase correcting capacitors. Linear electric generator[edit] Main article: Linear alternator In the simplest form of linear electric generator, a sliding magnet moves back and forth through a solenoid - a spool of copper wire. This type of generator is used in the Faraday flashlight. Larger linear electricity generators are used in wave power schemes. Variable speed constant frequency generators[edit] Many renewable energy efforts attempt to harvest natural sources of mechanical energy wind, tides, etc. Because these sources fluctuate in power applied, standard generators using permanent magnets and fixed windings would deliver unregulated voltage and frequency. The overhead of regulation whether before the generator via gear reduction or after generation by electrical means is high in proportion to the naturally-derived energy available. New generator designs such as the asynchronous or induction singly-fed generator , the doubly fed generator , or the brushless wound-rotor doubly fed generator are seeing success in variable speed constant frequency applications, such as wind turbines or other renewable energy technologies. These systems thus offer cost, reliability and efficiency benefits in certain use cases. Common use cases[edit].

6: Motor Generator Kit

Project Report on Earthquake Detector Which is the inverse of an AC Generator. the commutator segment containing the outward-going current is always against the.

Critical Tasks Status Report Visio Use this report to view a diagram showing the work and remaining work for both critical and non-critical tasks. The data bar indicates the percent of work complete. Task Summary Task Status Report Visio Use this report to view a diagram of the work and percent of work complete for tasks in your project, with symbols indicating when baseline work exceeds work, when baseline work equals work, and when work exceeds baseline work. Resource Summary Resource Remaining Work Report Excel Use this report to view a bar graph with remaining work and actual work for each work resource, illustrated in work units. The percent of work complete is indicated by the shading in each of the boxes on the diagram. The shading gets darker as the resource nears completion of the assigned work. Create a visual report by using a template On the View tab, in the Reports group, click Visual Reports. In the Visual Reports dialog box, on the All tab, click the report that you want to create. If the report that you want to create is not listed, select the Include report templates from check box, and then click Modify to browse to the location that contains your report. If you only want to list reports that open in either Excel or Visio, select or clear the Microsoft Excel or Microsoft Visio check box. To change the level of usage data included in the report, select Years, Quarters, Months, Weeks, or Days from the Select level of usage data to include in the report list. For most projects, this will be weeks. If you choose to include data at a more detailed level, report performance may be decreased. For best performance, if you are viewing multiple reports for the same project at one time, refrain from changing the data level. If you change the data level, the temporary reporting database stored locally must be recreated. Click View to generate the report and open it in Excel or Visio. In the Visual Reports dialog box, on the All tab, click the report that you want to edit. If you only want to list reports that open in either Excel or Visio, select or clear the Microsoft Excel or Microsoft Visio check boxes. Click Edit Template to create the report with the modified list of fields. On the Visual Reports - Field Picker dialog box, some fields are identified as dimensions. It is important to select fewer than six dimensions for your report. If you select more than six dimensions, report performance is significantly decreased. Not all fields are available in all reports. Some fields are only available in Visio reports, but not in Excel reports. If you are unable to locate the field you want to include on the Visual Reports - Field Picker dialog box, it may be stored in a different category of data. For example, many fields that you might think of as Task Summary fields are actually Assignment Summary fields. In the Visual Reports dialog box, click New Template. In the Select Data Type section, select the type of data that you want to use in the report. Click Add to move them to the Selected Fields box. Click Add to move them to the Selected Custom Fields box. If you have the English version of Office Project installed, you have the option to create a Visio template that uses U. Some fields are only available in Visio reports, and not in Excel reports. When you have finished creating your visual report, you can choose to save it to the default template location c: Templates saved in the default template location automatically appear on the Visual Reports - Create Report dialog box. If you begin using a different language pack after saving a custom visual report template, the template remains available but is not populated. The original field names are not recognized in the new language and are not included in the report. Top of Page Export report data You can select specific data to export within a category OLAP cube , or you can export all project data as a reporting database. In the Visual Reports dialog box, click Save Data. In the Save Reporting Cube section, select the category that contains the type of data that you want to save. Click Field Picker to modify the fields included in the list of data to export. Browse to the location where you want to save the cube data, and then click Save. Cube data is saved as a. When accessing cube data with Visio, the. Browse to the location where you want to save the database, and then click Save. The data is saved as a Microsoft Office Access database.

AC GENERATOR PROJECT REPORT pdf

7: Electric motors and generators

AC generator model made easy for school project. Specially designed for CBSE school students. Output is fed to two LED as indicator. For detail and more proj.

This article is about alternator. They are also known as synchronous generators. How does an AC generator work? The working principle of an alternator or AC generator is similar to the basic working principle of a DC generator. Above figure helps you understanding how an alternator or AC generator works. If the close path is provided to the conductor, induced emf causes current to flow in the circuit. Now, see the above figure. Let the conductor coil ABCD is placed in a magnetic field. The direction of magnetic flux will be form N pole to S pole. The coil is connected to slip rings, and the load is connected through brushes resting on the slip rings. Now, consider the case 1 from above figure. As the coil is rotating clockwise, after half of the time period, the position of the coil will be as in second case of above figure. It shows that, the direction of the current changes after half of the time period, that means we get an alternating current. Construction of AC generator alternator Salient pole type alternator Main parts of the alternator, obviously, consists of stator and rotor. But, the unlike other machines, in most of the alternators, field exciters are rotating and the armature coil is stationary. Unlike in DC machine stator of an alternator is not meant to serve path for magnetic flux. Instead, the stator is used for holding armature winding. The stator core is made up of lamination of steel alloys or magnetic iron, to minimize the eddy current losses. Why armature winding is stationary in an alternator? At high voltages, it easier to insulate stationary armature winding, which may be as high as 30 kV or more. The high voltage output can be directly taken out from the stationary armature. Whereas, for a rotary armature, there will be large brush contact drop at higher voltages, also the sparking at the brush surface will occur. Field exciter winding is placed in rotor, and the low dc voltage can be transferred safely. The armature winding can be braced well, so as to prevent deformation caused by the high centrifugal force. Salient pole type rotor is used in low and medium speed alternators. Construction of AC generator of salient pole type rotor is shown in the figure above. This type of rotor consists of large number of projected poles called salient poles , bolted on a magnetic wheel. These poles are also laminated to minimize the eddy current losses. Alternators featuring this type of rotor are large in diameters and short in axial length. Cylindrical type rotors are used in high speed alternators, especially in turbo alternators. This type of rotor consists of a smooth and solid steel cylinder havingg slots along its outer periphery. Field windings are placed in these slots. The DC suppy is given to the rotor winding through the slip rings and and brushes arrangement. Connecting an alternator in grid is called as synchronization of alternator , read more about it at the link. Why not share it?

8: Download the Seminar Report for DC Generators

AC Generator or Dynamo. An electric generator converts mechanical energy into electrical energy. The generation of alternating currents (ac) is based on the phenomenon of electromagnetic induction.

Generator - Introduction A. Generator is a device which is used to convert the mechanical energy in to electrical energy is called electric generator. Generator It is based on the principle of electro magnetic induction. When a coil rotated about on axis perpendicular to the direction of uniform magnetic field, an induced e. Generator is consist of four main parts: A rectangular coil ABCD consist of a large number of turns of copper bound over a soft iron core is called armature. The soft iron core is used to increase the magnetic flux. It is usually a permanent sponge magnet having concave poles. The armature is rotated of a magnet so that axis of the armature is perpendicular to magnetic field lines. Slip rings are the magnetic rings which are connected in the terminal of the armature. These rings are rotated with the coil and these are use to draw the current from the generator. They are not rotating with the coil and these brushes leads to the output of load resistance. Generator The coil is rotated in anti-clock wide direction. In the first half rotation the arm AB is moving outward and CD is moving inward. And in the arm CD from C to D. After half rotation in the second half. The arm CD is moving outward and AB is moving inward. In this time current is induced in arm CD from D to C. And in arm AB from B to A. In the second half rotation the current direction is changing so in this generator AC is produced. Expression for Instantaneous e. Let position of the coil at any time t. If w is uniform angular speed of the coil.

9: Working Principle of DC Generator

Rotor: The rotor of an AC generator is the rotating component of the generator, The rotor is driven by the generator's prime mover, which may be a steam turbine, gas turbine, or diesel engine. Stator: The stator of an AC generator is the part that is stationary (refer to Figure 1).

Generator Physics Project A. Generator - Introduction A. Generator is a device which is used to convert the mechanical energy in to electrical energy is called electric generator. Generator It is based on the principle of electro magnetic induction. When a coil rotated about on axis perpendicular to the direction of uniform magnetic field, an induced e. Generator is consist of four main parts: A rectangular coil ABCD consist of a large number of turns of copper bound over a soft iron core is called armature. The soft iron core is used to increase the magnetic flux. It is usually a permanent sponge magnet having concave poles. The armature is rotated of a magnet so that axis of the armature is perpendicular to magnetic field lines. Slip rings are the magnetic rings which are connected in the terminal of the armature. These rings are rotated with the coil and these are use to draw the current from the generator. They are not rotating with the coil and these brushes leads to the output of load resistance. Generator The coil is rotated in anti-clock wide direction. In the first half rotation the arm AB is moving outward and CD is moving inward. And in the arm CD from C to D. After half rotation in the second half. The arm CD is moving outward and AB is moving inward. In this time current is induced in arm CD from D to C. And in arm AB from B to A. In the second half rotation the current direction is changing so in this generator AC is produced. Expression for Instantaneous e. Let position of the coil at any time t. If w is uniform angular speed of the coil.

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