BSc.(Information Technology)

(Semester II)

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Green Computing

(USIT 205 Core)

University Paper Solution

By

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Question 1

Q1a. What are the steps taken by china to manage their e waste problem?

Ans:

China has a semi informal collection and dismantling industry. Peddlers are the first step of a daisy chain of business and industries. Buying up e-waste from household, industry, etc.

The program has supported the formulation of a technical draft for national e-waste law states that products shipped to china must be marked as to whether the products are complaint or non-complaint.

The Electric Information Products(EIP) logo or other label is used to mark products that do not have unacceptable levels of substances tested by china's RoHs.

StEP is a program that is open to companies, governmental organizations, and academic institutions to optimize the life cycle of electrical and electronic equipment by improving supply chains.

Q1b. Explain how green computing can effect on cost saving?

Ans: By following the steps given below it may result in the cost saving.

1. We can reduce the cost of the hardware by buying less equipment.
2. Before purchasing new equipment go through old inventory.
3. Power management in desktop by enabling power management settings.
4. Uses of Solar Energy: By converting heating system to the solar energy, in this way user can save electricity, money and your environment from global warming.
5. Switch off Electric Appliances: When electric appliances are not in your use, then plug them off, because they use some energy even in off position.
6. Use Fluorescent Light Bulbs: use fluorescent light bulbs, because these fluorescent bulbs consume only 25 % energy comparable incandescent bulbs.
7. In datacenter increase in the servers and network infrastructure caused a hike in the electrical usage in datacenter where using smart switches cost can be saved.

Q1c. Explain the objectives of StEP.

StEP is a program that is open to companies, governmental organizations, and academic institutions

StEP's prime objectives are as follows:

- Optimizing the life cycle of electrical and electronic equipment by improving supply chains
- Closing material loops
- Reducing contamination
- Increasing the utilization of resources and the reuse of equipment
- Exercising concern about disparities such as the digital divide between industrializing and industrialized countries
- Increasing public, scientific, and business knowledge
- Developing clear policy recommendations

Q1d. Write a note on equipment disposal.

Ans: This term applies to consumer and business electronic equipment that is near or at the end of its useful life. These products can contain heavy metals like cadmium, lead, copper,

and chromium that can contaminate the environment. User should not dispose of these items in the trash or your recycling bins.
Examples of electronic waste include, but not limited to:

- TVs, computer monitors, printers, scanners, keyboards, mice, cables, circuit boards, lamps, clocks, flashlight, calculators, phones, answering machines, digital/video cameras, radios, VCRs, DVD players, MP3 and CD players
- Kitchen equipment (toasters, coffee makers, microwave ovens)
- Laboratory equipment (hot plates, microscopes, calorimeters)
- Broken computer monitors, television tubes (CRTs) .

If they are properly disposed of, can be a great source for secondary raw materials. On the other hand, if they are disposed of improperly, they can be major sources of toxins.

Q1e. Write a short note on RoHs.

Ans: The directive restricts the use of six hazardous materials in the manufacture of certain types of electronic equipment:

- Lead
- Mercuryss
- Cadmium
- Hexavalent chromium
- Polybrominated biphenyls (PBBs)
- Polybrominated diphenyl ether (PBDE)

The directive sets a maximum concentration of these materials at 0.1 percent by weight of homogeneous material.

Q1f. What are the advantages of reusing an equipment.

Ans: There are lots of benefits to reusing equipment:

- There is less demand for new products and their use of virgin raw materials.
- Less water and electricity is used when reuse lowers the need for the production of new products.
- Less packaging is used.
- Redeployed technology is available to more sectors of society, because computers and other components are often more affordable.
- Less toxins are going into landfills.

Question 2

Q2a **Explain any two low cost devices for checking power in the workstation.**

Ans:
Kill A Watt
The **Kill A Watt** (a pun on kilowatt) is an electricity usage monitor.. It measures the energy used by devices plugged directly into the meter, as opposed to in-home energy use displays, which display the energy used by an entire household.

The Kill A Watt device is a product that if the user plug into the wall and then plug your computer or monitor into the device. The result is that it will show you how much power your device is using.

Calculator
Tech Republic offers a free worksheet to help you determine various costs for monitor power. It allows you to do the following:

- Determine how much you spend on electricity to power your existing monitors.
- Compare new LCD and CRT monitors to determine which option is less expensive.

• Compare different models of the same type of monitor to determine which one carries the lowest total cost, when power is considered.
• Compare the same monitor under two different operating scenarios. For example, see how much cost savings you could achieve by implementing a monitor's sleep mode instead of leaving it running at full power when not in use.

Q2b. How cooling requirements are calculated?

Ans: Cooling requirement is expressed in British Thermal Units (BTUs) or kW. One kilowatt is the same as 3412 BTUs.

Room Size

The room itself requires cooling. To calculate the cooling needs of the room, use this formula:

Room Area BTU = Length (meters(m)) × Width (m) × 337

Windows

Most often, server rooms have no windows. If yours has none, you can skip this calculation. However, if you do have windows, look at these formulas to determine which is most applicable to your datacenter:

South Window BTU = South Facing Window Length (m) × Width (m) × 870 North Window BTU = North Facing Window Length (m) × Width (m) × 165

Windows BTU = South Window(s) BTU + North Window(s) BTU

People in the Room

You probably don't have someone permanently stationed in the server room. If people aren't in there, you can skip this section. However, if you do have people located in the server room, the heat load goes up about 400 BTU per person. Here's the formula:

Total Occupant BTU = Number of occupants × 400

Equipment

You can find the equipment's power consumption in its documentation or on the vendor websites, if it's not written on a sticker with the serial number.

Equipment BTU = Total wattage for all equipment × 3.5

Lighting

Lighting BTU = Total wattage for all lighting × 4.25

Total Cooling Requirement

Total Heat Load = Room Area BTU + Windows BTU + Total Occupant BTU + Equipment BTU + Lighting BTU.

Q2c. Explain about the net metering process

If user generates more power than you're using, you can sell it back to the power company, the practice is called net metering.

If your organization is considering relying on the sun for its power, and possibly to sell back power to the utility company, you'll need a few things:

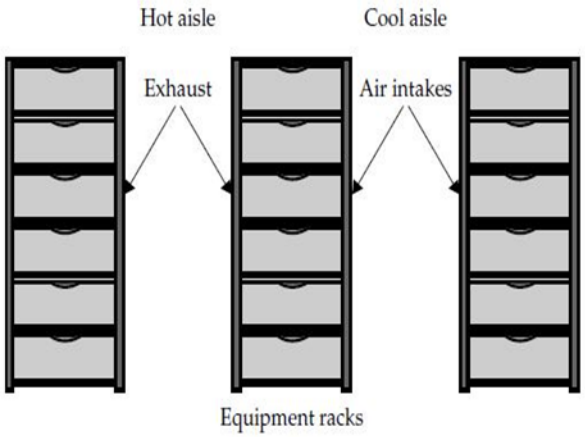
• Photovoltaic panels these panels absorb solar radiation. They are made of silicon and coated with tempered glass. Panels are typically mounted on the roof or on a Free-standing pole.

• **An inverter** this device regulates the power and changes it to alternating current

(AC).
• **A meter** User needs a meter that can run backward and can show how much user is Sending back to the utility company.

Q2d. How can we optimize the airflow around the server and various networking equipment?
Ans: Hot Aisle/Cold Aisle

Equipment is typically designed to draw in air from the front and then blow the exhaust out the rear. cool sides of equipment are arranged together, whereas the hot sides of equipment face each other. This allows the equipment to draw in cool air, rather than air that has already been preheated by the rack of equipment in front of it.



Equipment can be configured in a hot-aisle/cool-aisle configuration.

The cold aisles have perforated floor tiles to draw cooler air from the raised floor. Floor mounted cooling is placed at the end of hot aisles, but not parallel to the row of racks. This is because parallel placement can cause the hot exhaust to be drawn across the top of the racks and mixed with the cool air. It also decreases overall energy efficiency.

Raised Floors
Datacentre's are conventionally built on a floor that is raised 18 to 36 inches. The higher the floor level, the more air that can be distributed under the floor and the more air that can be used by the cooling system.But higher isn't always practical. There can be major disruptions to day-to-day operations. Plus, the higher up you build the floor, obviously, the closer you'll be getting to the ceiling. This can be a hindrance not only for rack sizes, but also for the flow of air over the top of equipment.

Q2e. What are the advantages and disadvantages of using water as a refrigerant?
Ans:

	Advantages	Disadvantages
Chilled water	• Less expensive • Room sizes don't matter	• Electrical hazard • Less efficient • Fluid treatment may be necessary to prevent fouling • Limited overhead cooling options
Refrigerant	• No electrical hazards • Lower operating costs • Smaller piping requirements • More compact heat exchanges	• Potential compatibility issues with small rooms • More expensive

Q2f. Write down different steps to keep datacenter at right humidity?
Ans:
Use these tips to help keep your datacenter at the right level:
• **Establish a humidity sensor calibration schedule** Humidity sensors drift and require frequent calibration—more so than temperature sensors. Also, incorrect humidity sensors are less likely to be noticed than incorrect temperature sensors. As such, establish a frequent test and calibration schedule for your humidity sensors.
• **Allow for sensor redundancy** Make sure you have enough sensors to keep an eye on your datacenter's humidity level. To ensure a tight control, multiple sensors should be used. At the very least use two, but more are better.
• **Manage humidity with a dedicated unit** If ventilated air is used (maybe from an air-side economizer), control humidity with a single ventilation air handler.
• **Lock out economizers when necessary** When using an air-side economizer, minimize the amount of air that's brought in when the dew point is low. This saves money on having to humidify the dry air.
• **Centralize humidity control** Each datacentre should have its own centralized humidity control system. Multiple systems wind up fighting each other, and the system becomes less efficient.

Question 3

Q3a. What are the ways to control use of water in the organization?
• Document your maintenance and upgrades to fixtures.
• Monitor your water usage. Keep a log of meter reads on a weekly basis so that spikes in usage can be assessed and repairs made in a timely fashion.
• Install leak detection and water conservation tools, such as isolated meters and shut-off valves to each appliance or fixture. Rain shut-off devices are especially helpful if you have grass to water.
• Determine flow rates, flush volumes, and daily water use. Put a plan in place to reduce the amount of water that's used.
• Install low-flow fixtures. If you've already got low-flow fixtures, keep up on their maintenance.

Q3b. How to find which products have low level of toxin?
Ans:

You can determine which products have low levels of toxins by observing the following:

• Reading the product label and Material Safety Data Sheet (MSDS) can help you make this determination. The MSDSs of many cleaning products that are sold to the general public can be found in the National Institutes of Health's Household Products Database at http://householdproducts.nlm.nih.gov.
• Examine the list of institutional cleaning products that have been certified by Green Seal as meeting its Standard GS-37 for general cleaners and GS-40 for floor-care products. This list is available at www.greenseal.org.
• Read the Janitorial Pollution Prevention website. This public service website has fact sheets on safe and effective cleaning techniques for windows, carpets, restrooms, and other cleaning job.
• Call the manufacturers to ask about any less-toxic alternatives they offer. Many vendors have several product lines, one of which may contain less-harmful Ingredients than the others.

Q3c. How does outsourcing helps in green computing?

- It helps to consider the environmental impact of the business.
- It helps to understand the Energy Efficiency Scheme to outsource their IT infrastructure and services
- **improved focus on core business activities** - outsourcing can free up your business to focus on its strengths, allowing your staff to concentrate on their main tasks and on the future strategy
- **increased efficiency** - choosing an outsourcing company that specialises in the process or service you want them to carry out for you can help you achieve a more productive, efficient service, often of greater quality
- **controlled costs** - cost-savings achieved by outsourcing can help you release capital for investment in other areas of your business
- **increased reach** - outsourcing can give you access to capabilities and facilities otherwise not accessible or affordable
- **greater competitive advantage** - outsourcing can help the user to leverage knowledge and skills along with your complete supply chain

Q3d. List the functionalities of MOSS?

Ans:

Microsoft Office SharePoint Server (MOSS) is the full version of a portal-based platform for collaboratively creating, managing and sharing documents and Web services. MOSS enables users to create "Share point Portals" that include shared workspaces, applications, blogs, wikis and other documents accessible through a Web browser.

Features

MOSS allows members of your organization to do their work using Microsoft Office applications, e-mail, or web browsers. Some of the functionality of MOSS includes:
•The ability to control access
MOSS allows you to establish customized document management policies to control access rights. Access can be managed at a per-item level; you can manage the retention period and expiration actions.

•Central management MOSS allows you to store and manage all your documents and content in one central location. This helps with locating documents. It also allows you to manage how your data is stored: Settings can be modified to add workflow, establish retention policies, and add new content types.

•Content management MOSS includes Master Pages and Page Layouts, which include templates allowing you to give your content a consistent look. You can also publish content from one area to another (for instance, from a collaborative site to your intranet).

•Work across the organization Content created in one part of the organization can be easily integrated into the system and stored in document libraries or web services. Doing so allows you to avoid duplicating effort and making errors from having to manually reenter that data.

Q3e. Write a short note on VAN.

Ans: A VAN is sort of an electronic post office. It receives transactions, looks at the "To" and "From" information, and routes the messages to their intended recipients.
A value-added network (VAN) is a private network provider (sometimes called a turnkey communications line) that is hired by a company to facilitate electronic data interchange (EDI) or provide other network services. Before the arrival of the World Wide Web, some companies hired value-added networks to move data from their company to other companies. With the arrival of the World Wide Web, many companies found it more cost-efficient to move their data over the Internet instead of paying the minimum monthly fees and per-character charges found in typical VAN contracts. In response, contemporary value-added network providers now focus on offering EDI translation, encryption, secure e-mail, management reporting, and other extra services for their customers.

Benefits to using a VAN include:

- **Alert system:** VANs can alert organizations to transmission issues or delivery receipts.
- **Archival storage:** VANs can store critical business data for extended periods of time.
- **Audit trails:** Information including setup, configuration, and document transmission events can be audited.
- **Real-time data delivery:** Data can be delivered in real time, rather than in batches, thus allowing speedier response to transmissions.
- **Reliable and secure transmission:** VANs ensure that a company's data is securely transmitted and is received by the recipient.

Q3f. Explain about telecommuting.

Ans:

Telecommuting is working from a remote location outside of a traditional office. The remote location can be from home or hotel room. The Internet, faxes, phones, webcams, and instant messaging are some of the technological advances that enable this type of work arrangement.

1. It reduces greenhouse gas emissions related to transportation.
2. Increases worker satisfaction.
3. Reduces cost for office space.
4. Reduces heat.
5. Conserves energy.

The telecommuting guidelines should include a three-step process:

Preapproval: If an employee wants to telecommute, they fill out a worksheet that the organization can use to evaluate their suitability for telecommuting. Issues to consider in the preapproval worksheet include:

- Core work hours.
- Preapproval of the employee's workspace at home.
- Identification of an alternate work site in case the employee can't work at the first site.
- Assurance that the employee has the appropriate equipment to safely perform their job without risk of injury. Safety guidelines should also be in place.

Approval: If human resources deems the employee suitable for telecommuting, the employee and organization complete an agreement that spells out the specifics of the telecommuting arrangement.

Ongoing monitoring: The organization should regularly review each telecommuting arrangement to ensure that the criteria originally established continue to be met.

Question 4

Q4a.What are the advantages and dis advantages of buying an equipment?

Ans:

Buying

The advantages of buying equipment are

1. **Ease in comparison to leasing-** Rather than mess with agreements and having to return equipment at a certain date, when you buy your equipment, you go out, you buy it, and it's yours
2. **Maintenance is up to you -**Leases usually require you to follow a maintenance schedule established by the leasing company. When you own the computers, you can decide when to defragement hard drives, install operating system updates, and so forth.
3. **Tax deductibility -**If you buy the computers, you can write off the price from your taxes. If you lease, you can only write off the monthly cost.

The disadvantages of buying equipment are

1. **High initial outlay -** If you buy your computers, you'll have to spend that money u money could have been used to build the business through marketing, advertising else.

2. You're stuck with it -With a lease, when the lease term is over and the machines g the lease company, disposal becomes the company's problem, not yours.

Q4b. Write a short note on refurbishing.

Ans:

Refurbishing means damaged equipment to bring it to workable or better looking condition. Refurbished IT equipment is used equipment that has been cleaned, tested ,reconfigured and warranted for future use.

When a refurbishes receives discarded computers, it tests them, extracts useable parts from computers that are not repairable, and then fixes the ones that can be fixed.

Noncommercial Refurbishing

The innovative method is to repair or up trade instead of recycling donating used electronic equipment ,refurbishing and leasing.

This field is composed mostly of nonprofit and school-based programs doing computer training. This market turns around reused computers and provides them to low-income families.

CompuMentor—an organization that helps provide PCs and other technology to low-income individuals—estimates that there are as many as 500 programs in the U.S., with an average capacity of 200 computers per year.Larger programs—such as Computers for Schools Canada and Students Recycling Used Technology in Portland, Phoenix, Georgia, and Silicon Valley—provide 10,000 or more computers each year.

Commercial Refurbishing

Most major computer companies have their own divisions for repurposing computers—companies such as HP Financial Services and IBM Global Asset Recovery Services. There are also hybrids of the non commercial and commercial programs out there. RECONNECT is a partnership between Dell and Goodwill Industries.

Computers can be brought into Goodwill locations, Dell will refurbish them, and then the repurposed computers are sold with the proceeds going to Goodwill Industries.

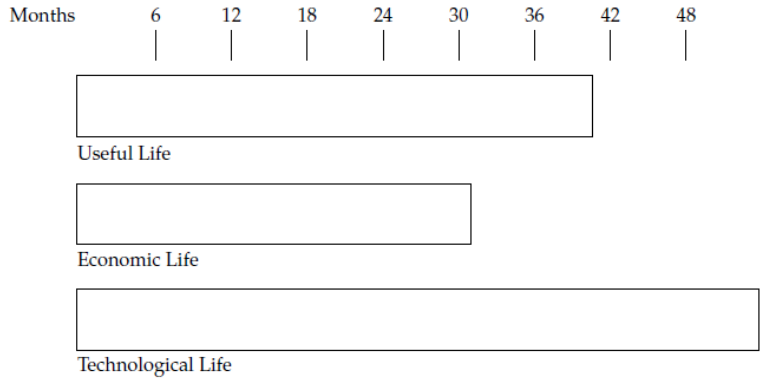
Q4c. How to determine system's life?

A system's life is based on three factors. Whichever of these factors arises first will determine how long the system's life actually is:

• **Useful life** This expresses the equipment's lifetime, in which eventually the equipment wears out and it is not feasible to repair it anymore.

• **Technological life** A system may become impractical to maintain even though it can still be repaired and maintained. For example, it might not be possible to find the right type of memory chips for the system because they are no longer made. Another way to look at this is obsolescence.

• **Economic life** A system might still be functional, but it costs too much to use. It might also be that newer systems can be purchased that have lower operating costs so that the payback period of making that purchase is short.



A system's life is based on economic and technological factors.

It might not be possible to precisely predict the lifetime of a system up front, but you can estimate it by taking these factors into consideration.

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Q 4d. Explain the steps in remote desktop server configuration.

Remote Desktop can be used to connect your thin clients to the server.

To configure remote access, follow these steps:

1. In Control Panel, click System And Security, and then click System.
2. On the System page, click Remote Settings in the left pane. This opens the System Properties dialog box to the Remote tab.
3. To disable Remote Desktop, select Don't Allow Connections To This Com¬puter, and then click OK. Skip the remaining steps.
4. To enable Remote Desktop, you have two options. You can:

• Select Allow Connections From Computers Running Any Version Of Remote Desktop to allow connections from any version of Windows.

• Select Allow Connections Only From Computers Running Remote Desktop With Network Level Authentication to allow connections only from Windows 7 or later computers (and computers with secure network authentication).

5. Click Select Users. This displays the Remote Desktop Users dialog box.
6. To grant Remote Desktop access to a user, click Add. This opens the Select Users dialog box. In the Select Users dialog box, click Locations to select the computer or domain in which the users you want to work with are located. Type the name of a user you want to work with in the Enter The Object Names To Select field, and then click Check Names. If matches are found, select the account you want to use and then click OK. If no matches are found, update the name you entered and try searching again. Repeat this step as necessary, and then click OK.
7. To revoke remote access permissions for a user account, select the account and then click Remove.
8. Click OK twice when you have finished.

Q4e.State the advantages of thin client.

Ans: A thin client is a lightweight computer that is purpose-built for remote access to a server (typically cloud or desktop virtualization environments). It depends heavily on another computer (its server) to fulfill its computational roles.

Advantages to using thin clients include the following:

1. Lower administration costs Thin clients are largely managed at the server, and there's less opportunity for hardware failure. Also, because the entire system is managed centrally, there's less chance of virus or other malware infection.

2. Security Because no data is actually stored on the thin client, the chance for physical data theft is drastically reduced.

3.Lower hardware costs Thin clients tend to be less expensive than fat clients because they do not contain disk drives, application memory, and high-power processors. They also have longer lives before needing upgrading or becoming obsolete.

4. Efficiency In a fat client, the CPU is idle most of the time. With a thin client ,memory can be shared. If multiple users are using the same application, it only needs to be loaded into the server's RAM once. In a fat-client scenario, each workstation must have its own copy of the application in memory.

5.Lower energy consumption Thin clients use a lot less energy than fat clients. This reduces the amount of energy consumed, which equates to less heat generation, thus reducing the price of air conditioning.

6. Easy hardware failure management If a thin client fails, it is easier to replace than

a fat client. If a thin client fails, the unit is simply swapped out. There is no need to try and recover files and transfer them from the old, broken machine to a replacement.

Q4f. Write a short note on energy star program.

Ans:

ENERGY STAR® is a joint program of the Environmental Protection Agency (EPA) and the Department of Energy (DOE). Its goal is to help consumers, businesses, and industry save money and

protect the environment through the adoption of energy-efficient products and practices. The ENERGY STAR label identifies top-performing, cost-effective products, homes, and buildings.

The ENERGY STAR Most Efficient program was launched in May of 2011 by DOE and EPA to identify and advance highly efficient products in the marketplace. Its goal is to increase market awareness and promote innovation in these products. This program identifies the most efficient products among those that qualify for ENERGY STAR for certain product categories on an annual basis.

The ENERGY STAR products program sets specifications, testing procedures, and verification testing requirements for various consumer appliances, electronics, and commercial equipment.

The Home Performance with ENERGY STAR program combines DOE's research into residential energy use with ENERGY STAR's outreach capabilities to promote energy-efficient home retrofits.

The Commercial Building Energy Asset Score program is developing a commercial building energy asset rating program to allow building owners, managers, and operators to more accurately assess building energy performance.

Question 5

Q5 a.Differentiate between application service provider and Software as a service?

Ans:

key characteristics of SaaS software include the following:

- Network-based access to, and management of, commercially available software.
- Activities that are managed from central locations rather than at each customer's site, enabling customers to access applications remotely via the Web.
- Application delivery that typically is closer to a one-to-many model (single instance, multitenant architecture) than to a one-to-one model, including architecture, pricing, partnering, and management characteristics.
- Centralized feature updating, which obviates the need for downloadable patches and upgrades. SaaS applications are priced on a per-user basis. Additional fees can be added for extra bandwidth and storage. Revenue for SaaS vendors is generally smaller up front (as compared to buying licenses and selling software packages), but much larger on the back end as companies subscribe to the service.

ASP Differences:

ASPs host applications on behalf of their clients. But ASPs generally don't create their own applications. SaaS vendors, however, create their own applications and run them on their own.

Q5b. What are the steps involved for good green procurement program?

Ans: **Green Procurement -** When need to acquire products, ensure you're doing so ecologically by engaging in green procurement. Requires an organization to perform an assessment of the environmental consequences of a product at the various stages of its life cycle. Considering how the product was made, how it will be transported and used, and how it will be ultimately discarded.

Good green procurement program includes

1. **Organizational support -** Policies and procedures need to be changed to accommodate such a change, and the organization needs to be completely on-board.
2. **Self-evaluation -** Take a look at your current purchasing practices. This gives you a starting benchmark and will help you clarify what you purchase, how much you purchase, where it comes from, and how much it costs. This gives you a baseline so you can measure the success of your green procurement efforts.
3. **Setting goals -**Set big goals that have specific measurements.
4. **Developing a strategy** - Once you set the goals, figure out how you will reach those goals. Identify how you will implement changes necessary to reach those goals. Identify the products and vendors you want to work with.
5. **Running a pilot project** - Don't jump into it all at once. Start small and run a pilot project. By starting small, helps figuring out problems and would help to implement the program better, in a larger fashion.
6. **Implementing the plan** - Need to assign accountability and develop a communications plan that addresses employees, customers, suppliers, partners, and the public.
7. **Reviewing the program** - Periodically review your green procurement program to make sure its meeting stated goals and objectives.

Q5c. Write a note on CRM and explain it's technological components?

Ans: The technological components of your CRM system include the following:

- **Database:** A database for customer information and their interactions with the company, which includes order information, support information, requests, complaints, and survey responses.
- **Customer Intelligence:** You need a system for translating customer needs and profitability projections into plans that can be segmented for different types of customers. Then, you need to be able to track whether those plans are followed and whether desired outcomes have been achieved.
- **Business Modeling:** This piece analyses your customer relationship strategy along with the goals. In the end, this will tell you whether you are meeting your goals.
- **Learning and Competency Management Systems:** This component helps you get closer to the results you desire and the goals you have set. Complex systems need time to be implemented and tweaked, and this component can help you analyze your processes.
- **Analytics:** This piece is used to analyze customer relationship policies and activities, using such technologies as voice recognition and statistical analysis.

- **Collaboration:** This component allows your customers to interact with your business and their fellow customers.

Q5d. Explain about quantitative and qualitative reviews.

Ans:

Quantitative Reviews:

This involves looking at the numbers and figuring out what they mean based on the data available.

- **Usage profiles:** Look for consumption peaks and valleys, and figure out how they relate to your overall operations.
- **Performance comparisons:** Use the data to compare two similar facilities in your organization.
- **High costs:** Look at the data to see where you are spending a lot of money on energy use.
- **What's missing:** Look for any areas where you feel like you need more information, and then start collecting it.

Qualitative Reviews:

Qualitative Reviews can include the following:

- **Interviews:** Talk to colleagues and employees to seek informed opinions, anecdotal information, lessons learned, and in-house audits.
- **Review policies:** Look at your organizational policies and procedures to figure out what impact they are having on your energy use.

Conduct Audits:

In order to conduct an energy audit, you need to follow these steps:

- **Assemble your team:** You need to bring together a team with experience and knowledge of all energy-using systems, processes, and equipment's. We can use your system specialists and facilities engineers, but you may discover that you need to hire an outside expert for objectivity and expertise.
- **Plan and develop a strategy:** Figure out which systems you are going to evaluate and then assign team members to perform those tasks. Use benchmarking information to identify facilities and systems that aren't performing properly.
- **Generate a report:** Based on your audit results, write a detailed summary of steps that can be taken to reduce energy use. The report should also recommend actions that should be implemented.

Q5e.List and explain key strategies of review action plan.

Ans:

• **Get feedback** Talk to people in your organization and get feedback information from the energy team and others in your organization.

• **Gauge awareness** Find out whether employees are aware of energy issues.

• **Identify critical details** Figure out which details contributed to your plan failing or succeeding.

• **Know your side benefits** List—and if possible, quantify—any side benefits that arose from your action plan. This could be employee comfort, any impact on sales or operations, and so on. It could be a boost in community relations.

Reviewing your action plan can be a heady undertaking, but it's worth it. Doing so allows you to do the following:

• Identify new sources of action.

• Avoid repeated failures by identifying the actions that were not successful.
• Evaluate the usefulness of the tracking system, and make appropriate changes.
• Communicate your successes to your staff.
• Communicate successes to stakeholders inside and outside the organization.

Q5f. Explain transitioning.

Ans: **Transitioning** : Although it would be wonderful to say that companies are choosing to go green because it's the right thing to do, that usually isn't the case. True, many companies have a long commitment to the environment, and they should be commended for that activity. But a good thing has happened. Even though the companies started out with their arms twisted behind their backs, the momentum remained and they've started going beyond what was required. What tends to happen in cases like this is a four-step process:

1. **Compliance** Put simply, in order to obey the law, organizations started taking steps to meet the minimum requirements. Compliance costs money, and businesses do not like to cut into their bottom lines, but the end result is that they got the ball rolling.
2. **Personal commitment** A company can only be as dedicated to environmental friendliness as its leaders are. Although being green can be important to the CEO (and therefore the organization), if that CEO leaves, there's potential for green initiatives to go out the window. It's important for the entire organization to sign on to the notion of being green.
3. **Public trust** The public can be skeptical of your purported greening. Although the public wants you o be responsible, it's easy enough for a company to tell everyone that it is being responsible, but still consuming way more power than it needs, throwing computers in dumpsters, and using tons of paper every year. Although advertising your green efforts is good for your company, you have to actually back it up with action.
4. **Sustainable growth** Once the organization has met its green goals, it's all done, right? No. Now is the time to set new goals and look for ways to develop greener products, increase energy fficiency, and reduce waste further.

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