. **Soil pollution:** Also known as Land Pollution, this occurs due to incorporation of unwanted chemicals in the soil due to human activities. Use of insecticides and pesticides absorbs the nitrogen compounds from the soil making it unfit for plants to derive nutrition from. Release of industrial waste, mining and deforestation also exploits the soil. Since plants can't grow properly, they can't hold the soil and this leads to soil erosion.

Food is a big contributor to landfill waste. Up to 40 percent of food produced in the United States is trashed each year, according to the Natural Resources Defense Council.

Commercial or industrial waste is a significant portion of solid waste. According to the University of Utah, industries use 4 million pounds (1.8 million kg) of materials in order to provide the average American family with needed products for one year. Much of it is classified as non-hazardous, such as construction material (wood, concrete, bricks, glass, etc.) and medical waste (bandages, surgical gloves, surgical instruments, discarded needles, etc.). Hazardous waste is any liquid, solid or sludge waste that contain properties that are dangerous of potentially harmful to human health or the environment. Industries generate hazardous waste from mining, petroleum refining, pesticide manufacturing and other chemical production. Households generate hazardous waste as well, including paints and solvents, motor oil, fluorescent lights, aerosol cans, and ammunition.

While the above three are most common forms of Pollution that we hear about, there are few other forms of Pollution that have seemed to grow at an alarming pace these days. Let us briefly look at what they are.

Noise pollution: It is caused when a noise which is of higher intensity than 85 db reaches our bare ears. It may lead to psychological problems like stress & hypertension. It can also lead to permanent hearing impairment, which is worse. It is mainly caused by loud pumps and compressors in the chemical industries. Even marriage functions and rock music concerts are often ignored contributors to this type of pollution.

Radioactive pollution: This is considered one of the most dangerous pollution because of its permanent effects. An unarrested upset in a nuclear plant , careless nuclear waste disposal, etc. It can cause cancer – skin, blood, infertility due to exposure, birth defects and blindness; It has the ability to permanently change soil, air and water – the major sources of life. It can even cause mutation in species which can propagate for ages.

Thermal/heat pollution: This is caused as a result of excessive heat release in the environment. This leads to irreversible and undesirable changes of almost permanent nature. Industries and Vehicles are direct contributors to this. Deforestation is an indirect contributor.Other than the greenhouse gases,zyada this has increased the earth's temperature, and has potential to cause drastic climatic changes; and wildlife extinction.

Light pollution: Whenever illumination available is more than what's required in an area, this pollution kicks in. It is more noticeable in big cities, on advertising boards and billboards, mainly during large scale events, vis-a-vis Concerts, sport events & even marriages, at the night. It mainly affects the astronomical observations by making the stars very difficult to observe & study.

Effects of Pollution

Environment Degradation: Environment is the first casualty for increase in pollution weather in air or water. The increase in the amount of CO_2 in the atmosphere leads to smog which can restrict sunlight from reaching the earth. Thus, preventing plants in the process of photosynthesis. Gases like Sulfur dioxide and nitrogen oxide can cause acid rain. Water pollution in terms of Oil spill may lead to death of several wildlife species.

FIRST TERM EXAMINATION [FEB. 2019]
EIGHTH SEMESTER [B.TECH]
HUMAN VALUES AND PROFESSIONAL ETHICS-II [ETHS–402]

Time : 1.30 hrs. **M.M. : 30**

Note : *Q. No. 1 is compulsory. Attempt two more questions from the rest.*

Q.1. Write any two short notes:

Q.1. (a) Impact on Social Media and Print Media on values.

Ans. Almost a quarter of the world's population is now on Facebook. In the USA nearly 80% of all internet users are on this platform. Because social networks feed off interactions among people, they become more powerful as they grow.

Thanks to the internet, each person with marginal views can see that he's not alone. And when these people find one another via social media, they can do things — create memes, publications and entire online worlds that bolster their worldview, and then break into the mainstream.

Without social media, social, ethical, environmental and political ills would have minimal visibility. Increased visibility of issues has shifted the balance of power from the hands of a few to the masses.

The flipside: Social media is slowly killing real activism and replacing it with 'slacktivism'.

While social media activism brings an increased awareness about societal issues, questions remain as to whether this awareness is translating into real change.

Some argue that social sharing has encouraged people to use computers and mobile phones to express their concerns on social issues without actually having to engage actively with campaigns in real life. Their support is limited to pressing the 'Like' button or sharing content.

This is a very human reaction when people are given options that absolve them from responsibility to act. A 2013 study by the University of British Columbia's Sauder School of Business found that when people are presented with the option of 'liking' a social cause, they use this to opt-out of actually committing time and money to a charitable cause. On the other hand, when people are allowed to show support in private, they are more likely to show meaningful support in terms of making a financial contribution.

The researchers found that a public endorsement is an action meant to satisfy others' opinions, whereas people who give in private do so because the cause is aligned to their values.

1. Concept of safety:

Safety is a state in which hazards and conditions leading to physical, psychological or material harm are controlled in order to preserve the health and well-being of individuals and the community. It is an essential resource for everyday life, needed by individuals and communities to realise their aspirations.

Attaining an optimum level of safety requires individuals, communities, governments and others to create and maintain the following conditions, whichever setting is considered :

• a climate of social cohesion and peace as well as of equity protecting human rights and freedoms, at the family, local, national or international level;

• the prevention and control of injuries and other consequences or harm caused by accidents;

• the respect of the values and the physical, material and psychological integrity of individuals; and

• the provision of effective preventive, control and rehabilitation measures to ensure the presence of the three previous conditions.

These conditions can be assured by initiatives that focus on **the environment** (physical, social, technological, political, economic and organizational) and on **behaviour.**

2. Principles of Risk management:

The core principles that drive decision-making for prioritizing and mitigating risk are likely embedded deep in most risk managers' brains, but as with many other bits of knowledge a review of the basics can be both reinforcing and refreshing. Our day-to-day work keeps us so busy we may not have the opportunity to provide basic education to organizational leaders, members of our department, physicians and staff about exactly what risk management is. Reinforcing these principles can help demonstrate how a robust risk management program supports achievement of the organization's mission and vision.

The five basic risk management principles of risk identification, risk analysis, risk control, risk financing and claims management can be applied to most any situation or problem. One doesn't realize that these principles are actually applied in daily life over and over until examples are brought to light. Using everyday examples in education programs as a way of introducing the principles, and then transitioning to scenarios and problems faced in patient care and healthcare operations, can be an effective teaching tool when promoting the contributions that risk management makes to the organization's success.

Q.2. Explain any one nuclear disaster like the Three Mile Island or Chernobyl Nuclear Disaster with the ethical issues involved. **(10)**

Ans. Here I am going to explain Nuclear Disaster taking the Chernobyl Nuclear Disaster as an example:

Chernobyl disaster, accident in 1986 at the Chernobyl nuclear power station in the Soviet Union, the worst disaster in the history of nuclear power generation. The Chernobyl power station was situated at the settlement of Pryp'yat, 10 miles (16 km) northwest of the city of Chernobyl (Ukrainian: Chornobyl) and 65 miles (104 km) north of Kiev, Ukraine. The station consisted of four reactors, each capable of producing 1,000 megawatts of electric power; it had come online in 1977–83.

The disaster occurred on April 25–26, 1986, when technicians at reactor Unit 4 attempted a poorly designed experiment. Workers shut down the reactor's power-regulating system and its emergency safety systems, and they withdrew most of the control rods from its core while allowing the reactor to continue running at 7 percent power. These mistakes were compounded by others, and at 1:23 AM on April 26 the chain reaction in the core went out of control. Several explosions triggered a large fireball and blew off the heavy steel and concrete lid of the reactor. This and the ensuing fire in the graphite reactor core released large amounts of radioactive material into the atmosphere, where it was carried great distances by air currents. A partial meltdown of the core also occurred.

On April 27 the 30,000 inhabitants of Pryp'yat began to be evacuated. A cover-up was attempted, but on April 28 Swedish monitoring stations reported abnormally high levels of wind-transported radioactivity and pressed for an explanation. The Soviet government admitted there had been an accident at Chernobyl, thus setting off an international outcry over the dangers posed by the radioactive emissions. By May 4 both the heat and the radioactivity leaking from the reactor core were being contained, albeit at great risk to workers. Radioactive debris was buried at some 800 temporary sites, and later in the year the highly radioactive reactor core was enclosed in a concrete-and-steel sarcophagus (which was later deemed structurally unsound).

Some sources state that two people were killed in the initial explosions, whereas others report that the figure was closer to 50. Dozens more contracted serious radiation sickness; some of these people later died. Between 50 and 185 million curies of radionuclides (radioactive forms of chemical elements) escaped into the atmosphere—several times more radioactivity than that created by the atomic bombs dropped on Hiroshima and Nagasaki, Japan. This radioactivity was spread by the wind over Belarus, Russia, and Ukraine and soon reached as far west as France and Italy. Millions of acres of forest and farmland were contaminated, and, although many thousands of people were evacuated, hundreds of thousands more remained in contaminated areas. In addition, in subsequent years many livestock were born deformed, and among humans several thousand radiation-induced illnesses and cancer deaths were expected in the long term. The Chernobyl disaster sparked criticism of unsafe procedures and design flaws in Soviet reactors, and it heightened resistance to the building of more such plants. Chernobyl Unit 2 was shut down after a 1991 fire, and Unit 1 remained on-line until 1996. Chernobyl Unit 3 continued to operate until 2000, when the nuclear power station was officially decommissioned.

Q.3. How can proper and reliable maintenance reduce the risk of any failure of any system. **(10)**

Ans. Reliability Centered Maintenance (RCM) is a process used to determine what must be done to ensure that physical assets continue to do what its users want in its present operating context. Ultimately, by performing RCM, organizations are looking to develop unique maintenance schedules for each critical asset within a facility or organization.

There are four basic principles of an RCM program, stated in different ways by organizations all over the world. A program is RCM if it:

1. Is scoped and structured to preserve system function

2. Identifies failure modes, which are the ways in which something might fail. Failures are any errors or defects, especially ones that affect the customer, and can be potential or actual

3. Addresses failure modes by importance

4. Defines applicable maintenance task candidates and selects the most effective one in the case of important failure modes

Industry professionals have described an RCM program as:

"The best way to develop a maintenance improvement program improvement program." – A. M. Smith

Evaluation Criteria for Reliability-Centered Maintenance (RCM) Processes (SAE JA1011) identifies the basic requirements a program must meet before it is truly RCM. It begins with these seven questions:

• What is the item supposed to do and what are its associated performance standards?

• In what ways can it fail to provide the required functions?

• What are the events that cause each failure?

• What happens when each failure occurs?

• In what way does each failure matter?

• What systematic tasks can be performed proactively to prevent, or to diminish the consequences of the failure?

• What must be done if a suitable preventive task cannot be found?

Implementation of A Reliability Centered Maintenance Program

There are three phases (Decision, Analysis and Act) of a reliability centered maintenance program , and seven steps within these phases to ensure the program is fully implemented.

• **Phase I:** Decision:

• Justification and planning based on need, readiness and desired outcomes.

• **1. Analysis Preparation:** RCM analysis is only as effective as the team behind it. The most effective cross-functional teams include maintenance employees, project leaders, subject matter experts, and if possible, executive leadership.

Additionally, documenting procedures and your project plan can be vital to keeping your team on track. The beginning of an RCM project is a great time to outline your organizational goals, project management concerns, budget and timeline, and potential obstacles.

• **2. Select Equipment for RCM Analysis:** Equipment selected for RCM analysis should be critical to operations, the cost of repair vs. replace and previous spending on Preventive Maintenance. To select the best candidate, ask yourself these questions:

• Could failure be difficult to detect during normal operation and maintenance?

• Could failure affect safety?

• Could failure have a significant impact on operations?

• Could failure have a significant impact on spending?

• **3. Identify Functionality:** Define a complete list of a piece of equipment's functionality, including as much data driven information as possible. It is important for your team to specify your desired asset performance levels instead of actual performance, as it may reflect an operational or maintenance issue. System functionality then drives the required functions of the equipment supporting the system functions.

• **Phase II:Analysis:**

Conduct the RCM study in a way that provides a high quality output.

• **4. Identify Functional Failures:** Functional failure is the inability of an asset or system to meet acceptable standards of performance. Failures can encompass poor performance, over performance, performing unnecessary or unintended functions, or complete failure. For example, when a motor bearing is failing due to lack of lubrication, a Total Functional Failure would be the motor not rotating, and the motor failing to function.

Function	Functional Failure
Deliver oil from tank to tank at no less than 500L/minute	1. Oil is leaking 2. No oil is being delivered 3. Oil is being delivered slower than 500/minute

5. Identify and Evaluate the Effects of Failures: Next, your team should document what actually happens when failures occur. What can be observed? What is the impact of the failure on production? Is there a significant safety impact?

6. Identify Failure Modes: Once you identify your equipment and systematic functional failures, failure modes must be considered. One of the most common techniques to approach discovering failure modes is Failure mode and effects analysis (FMEA). FMEA is a step-by-step approach for identifying all possible failures in a design, a manufacturing or assembly process, or a product or service. Understanding the effects of failure involves asking questions such as:

• What are the safety concerns with this failure?

• What impact does this failure have on operation/production?

• Does this failure mode result in full or partial outages?

A CMMS offers automation tools to help reduce missing scheduled work and equipment failures, making PM optimization as efficient and streamlined as possible. PM Task Generation, PM Scheduling and Inspections help facilitate continuous improvement and support for an organization's Preventive Maintenance program.

Phase III:Act: Act on the study's recommendations to update asset and maintenance systems, procedures and design improvements.

7. Select Maintenance Tasks: At this point, the most appropriate maintenance action can be identified based on the failure mode information. Failure management techniques can be grouped into two categories:

Proactive tasks – Preventive and Predictive Maintenance techniques are performed to prevent failure of a piece of equipment of system. Preventive Maintenance is calendar or usage based, and helps to reduce the risk of failure, while Predictive Maintenance, or Condition Monitoring, can detect the failure before it begins.

Default actions – Fire fighting or reactive maintenance deal with failures after the fact. Run-to-failure is a tactic where equipment is run until it fails, and then work is performed.

Selecting the right strategy for failure management is rooted in an understanding of failure modes, criticality of equipment and the economic impact of failure.

Q.4. Explain Holistic technology.Elaborate with the help of an example. (10)

Ans. Refer Q.2. of End Term Examination 2019.

END TERM EXAMINATION [MAY. 2019]
EIGHTH SEMESTER [B.TECH]
HUMAN VALUES AND PROFESSIONAL ETHICS-II [ETHS–402]

M.M. : 75

Time : 3 hrs.

Note :- *Attempt all questions directed. Internal Choice is indicated.* **(5 × 5 = 25)**

Q.1. Write short notes on any five of the following:

Q.1. (a) Impact of science and technology.

Ans. In present global situation, numerous powerful technologies have been developed to assist people in households and offices. Faster communication is made possible through mobile phones and the Internet. New technology impacts our daily lives in every field, from the cars, cell phones, computers and networks and power. In fact, humans have always been greatly affected with the developments in new technology. However, today new information technology is slightly complex with cloud computing, new methods of security and data encryption. It is a prevailing fact that new information technology not only benefits programmers, database managers, hardware engineers and network analysts but it also benefits the common user. New information technology was developed in 1940's and 1950's for the better working of military and universities.

It is appraised by experts that continual progression of new technology and science made human life simpler. Works can be done easier through high-tech machines and equipment. It gives less work for humans and job can be done faster. It makes human to feel comfortable and easy to live. It also helps people to organize their daily activities. Nowadays, computer is the most useful and popular invention to every people. It is true because computer makes life more enjoyable and through this persons may be able to discover and explore new things. Using computer is like an adventure. It provides people all the information and is used to solve mathematical calculations. Through science and technology, it is easier for inhabitants to communicate with other people around the globe. It is also significant in the field of business because transactions and other events are done through the computer. Science and technology enables every people to live in an easy and modern way of life. It opens the door and allows people to enter into a new world which is fully developed and well civilized.

New science and technology may also one day lead to mainstream alternative fuel vehicles, space travel for civilians, virtual reality conferences, a worldwide network of personal wireless electronics, data-transmission at the speed of thought, reversal of global warming and too many other innovations to mention. Latest research in computer science is not limited to medical, business, gadget, IT, space, and education. But it will mean better health, more knowledge and more power.

New research technology are in continuous process and researchers have explored new topics for investigations such as environment and renewable energy, space science, electronics, stem-cell investigations and many others. All these developments in human lives are wholly credited to the amazing invention of computers. The computer application is used and acknowledged worldwide. New models of computers are emerging daily, having different features, unique shapes and attractive designs.

Q.1. (b)Professional Accountability.

Ans. Engineering covers a wide range of disciplines, such as mechanical, structural, environmental, or electrical engineers, to name a few. But all are considered professionals,

no matter what their place in the organization. Engineers are responsible for many projects that can impact the public. Thus there is a set of ethical and professional standards they're expected to follow. Failure to do so can have legal or career repercussions. Here are four ways that engineers are held accountable.

1. Licensure: Engineering covers a wide range of skills and activities. By the end of 2015, there were 1.6 million engineers working in the US. Regulations may include obtaining a professional license before an engineer can offer their services to the public or accept certain contracts. Most jurisdictions have statutes defining just what an engineer is, and what they may or may not do.

For instance, only licensed engineers may be allowed to approve blueprints or building plans. This can include related documentation such as studies, reports, calculations, or maintenance records. They will also be restricted to working only within the definitions of the specialty they are qualified for, such as civil or nuclear engineering. Unlicensed engineers may be limited to working under a fully licensed supervisor or manager.

2. Requirements: Many locations will also have requirements on exactly what constitutes a qualified engineer before licensing, registration, or even work on certain civil projects takes place. This usually involves completion of a four-year degree in a particular discipline at an accredited college. There are only 1,074 accredited engineering programs in the US. Some organizations may require a master's degree.

Typically, an education is followed by passing a Fundamentals of Engineering (FE) exam indicating a certain level of basic and applied knowledge. This is followed by passing a written Practice of Engineering (PR) exam showing proficiency in the chosen engineering discipline. Engineers passing these exams may require four years or more of on-the-job experience as an intern before they can be licensed themselves.

3. Quality: These standards help to ensure quality results in engineering outcomes, whether it's building a bridge or designing a new cellphone charger. Engineers, like all professionals, are required to follow established procedures and precautions in order to avoid charges of negligence. If an engineer uses shoddy materials, inaccurate calculations, or even sub-standard designs, they or their company could be liable for damages whether it was done knowingly or not.

As one recent example, the failure of Takata's vehicle airbags and their failure to address the problem led to federal fines of $14,000 per day and the loss of one of their biggest clients, Honda Motor Company. In some circumstances, if the engineer knowingly risked public safety and people were injured, this could involve criminal charges.

4. Ethics: An engineer can also be held accountable if there was a violation of professional ethics. This usually amounts to accepting bribes or gifts in the course of a project. If the engineer opts to contract with certain vendors or contractors, approve plans, overlook building codes, environmental laws, or other regulations in exchange for a reward, it can be considered unethical conduct.

Q.1. (c) Risk benefit analysis.

Ans. A risk–benefit ratio is the ratio of the risk of an action to its potential benefits. **Risk–benefit analysis** is analysis that seeks to quantify the risk and benefits and hence their ratio.

Analyzing a risk can be heavily dependent on the human factor. A certain level of risk in our lives is accepted as necessary to achieve certain benefits. For example, driving

an automobile is a risk most people take daily, also since it is mitigated by the controlling factor of their perception of their individual ability to manage the risk-creating situation. When individuals are exposed to involuntary risk (a risk over which they have no control), they make risk aversion their primary goal. Under these circumstances individuals require the probability of risk to be as much as one thousand times smaller than for the same situation under their perceived control (a notable example being the common bias in the perception of risk in flying vs. driving).

Evaluations of future risk can be:

- **Real future risk**, as disclosed by the fully matured future circumstances when they develop.
- **Statistical risk**, as determined by currently available data, as measured actuarially for insurance premiums.
- **Projected risk**, as analytically based on system models structured from historical studies.
- **Perceived risk**, as intuitively seen by individuals.

Q.1. (d) The perils of technological optimism:

Ans. Pioneering environmentalists such as Paul Ehrlich argued strongly against 'Technological Optimism'. Broadly speaking, this is the belief that technological improvements will meet unlimited human demand for resources, including energy.

However, some appear to have embraced this idea wholeheartedly, probably in reaction to the slow response of governments to the threat of climate change. 'Technologically optimistic' solutions to global warming include 'clean' coal, PV, wind, pumped hydro and lithium batteries.

Perhaps the ultimate in techno-optimism is the idea of spraying aerosols containing sulphate or carbonate into the stratosphere to reflect solar radiation back into space.

Battery storage is another technologically optimistic scheme intended to regulate the (hoped-for) unlimited supply of wind and solar energy.

It is a complex issue and there appears to be uncertainty about economies of scale and the rational use of finance and material resources. Large public battery schemes seem preferable where existing infrastructure is available, but the idea of going 'off-grid' by means of small household and 'community' schemes appears to be gaining popularity.

Maintaining reliable energy supplies in a fragmenting system is obviously very challenging and there is presumably an increasing risk of assets becoming 'stranded' through lack of integrated planning.

Batteries are likely to rapidly become cheaper and may even pay for themselves in the medium-term, but it is doubtful that overall emissions will be reduced. The underlying assumptions are that the world has unlimited supplies of Lithium and that the impacts of the technology are negligible.

Mining and processing of Lithium for battery storage uses very large volumes of water which is sometimes diverted away from local communities. Like other mining operations, Lithium extraction may cause health problems, pollution and social disruption.

More energy has to be to put into a battery than can be taken out, but using 'excess' solar and wind power to 'split' water thereby releasing hydrogen, has great potential for

'balancing' clean energy storage in the long term. Membrane electrolysis and related technologies are advancing fast and could have an important role in the energy mix.

This field is like rocket science, brain surgery and quantum physics all rolled together. The Port Lincoln 'electrolyser' power plant trial will provide an opportunity to compare the various technologies against a range of technical, economic and environmental criteria. I'm hoping that happens before the 'Neo-Techno-Optimists' take us too far down another wrong track.

Q.1. (e) Corporate social responsibility (CSR).

Ans. Corporate social responsibility (CSR for short) is the internationally regarded concept for **responsible corporate behavior** – although it is not clearly defined. In a nutshell, CSR refers to the **moral and ethical obligations** of a company with regards to their **employees, the environment, their competitors, the economy** and a number of other areas of life that its business affects.

CSR is often understood as a **voluntary commitment to certain company rules** i.e. beyond state laws and standards. This means that companies that operate responsibly and morally can often use their CSR for PR purposes as well. If it becomes known that a company voluntarily commits itself to a good cause, this improves their public image.

For this reason, however, the concept of corporate social responsibility is repeatedly criticized: many companies do not embrace CSR as a result of genuine altruism, but rather to develop their own image. In this article we explain in detail what CSR is, how it has developed, and how CSR is borne out in some companies today.

The modern concept of company responsibility as we know it today arose in the 1950s in the US. At that time, many public discussions were being held on the topic and the first scientific findings were being published. Howard R. Bowen in his article "Social Responsibilities of the Businessman" described corporate responsibility as the logical consequence of the social accountability of individuals within the company. Thereby, it would have to orient itself according to these rules and thereafter enforce them. At the time, most companies did not feel obliged to work towards a more moral business focus: the defining outlook was that **economic growth** remained the determiner of everyday working life.

Q.1. (f) Embezzlement.

Ans. Embezzlement occurs when someone steals or misappropriates money or property from an employer, business partner, or another person who trusted the embezzler with the asset.Embezzlement is different from fraud or larceny (theft). The embezzler has permission to handle the property in a certain way (but not to take it). Instead, the wrongdoer uses the position of trust granted by the owner to convert the property to the embezzler's possession and control (to take it).

Examples of Embezzlement

The act of embezzlement can occur in many familiar circumstances. Below you'll find a couple of typical examples.

How Employees Embezzle on the Job

An employee who takes money or property from an employer (or sometimes a customer) and uses it for personal benefit commits embezzlement. Here are a few ways this act can be committed:

- charging more than the cost of the product and pocketing the difference
- "borrowing" money from the cash register
- depositing vendor checks into a personal account
- padding an expense account
- taking inventory or office supplies for personal use
- changing the account books to hide losses or stolen amounts
- moving money from a customer's account into a personal account
- adding a fake employee to the company payroll
- taking bribes or kickbacks, and
- tampering with employee time records.

Embezzlement of Property Held in Trust

Embezzlement can occur whenever someone mishandles property that someone else entrusts with them. For instance, embezzlement can happen as a result of:

- borrowing money from a sports league or civic organization's bank account
- adjusting the books to hide a misappropriation of funds
- using a client's lawsuit award to pay operating expenses
- selling property and pocketing the proceeds without accounting for it to heirs
- using a child or relative's Social Security check
- setting up a check or credit card kiting scheme, and
- stealing money through a Ponzi scheme.

Q.1. (g) Job Satisfaction.

Ans. Job Satisfaction, as the name suggests, is the feeling of contentment or a sense of accomplishment, which an employee derives from his/her job. It is a result of appraisal that causes one to attain their job values or meet out their basic needs. It helps in determining, **to what extent a person likes or dislikes his/her job.**

The employee's attitude towards the job and organization as well becomes positive when they realize that their job facilitates them in achieving their needs and values, directly (by performing it) or indirectly (by the package they get). In short, **it represents the difference between employee's expectations and experience he/she derives from the job**. The wider the gap, the more is the dissatisfaction.

Facets of Job Satisfaction

Job Satisfaction is all about an individual's feelings about the work, work environment, pay, organization culture, job security and so on. The essential aspects of job satisfaction include:

Job content facet

- Work characteristics
- Amount of work
- Compensation

Job context facet

- Co-workers, Colleagues, Supervisor, etc.
- Working conditions
- Growth and development opportunities
- Policies and rules of organisation

There are instances when an employee's feelings concerning one facet may spill over and affect another facet, meaning that if an employee is unhappy with the amount of work, he/she will likely to become unhappy with the compensation received. Moreover, each facet of job satisfaction is linked to the respective work environment and cognitive component of the employee's attitude.

Q.1. (h) Ethical Audit.

Ans. An investigation into how well (or poorly) a company conforms to the ethical standards of its industry or society generally. An ethics audit may consider the company's own practices, how it redresses grievances, how it discloses its finances, whether it punishes whistleblowers, and even the general cultural surrounding its business dealings. Some companies may formally adopt a code of ethics and conduct periodic ethics audits to see how closely they follow their own rules.

Audits are designed to dig deep into company records to ensure reliability and accuracy in areas like accounting systems, financial reporting and legal compliance. Audits generally deal with quantitative, easily measurable data. Ethical issues, on the other hand, are more often qualitative or subjective in nature. A number of qualitative research techniques make an ethical audit possible, but an ethical audit still necessarily functions differently from any kind of financial audit. Considering multiple perspectives to gain a big-picture understanding of a company's commitment to ethics is the key to an ethical audit.

Q.2. What do you mean by holistic technology? Explain with the help of example. **(12.5)**

Ans. Holistic (holistic technology) is an approach to IT management that is concerned with viewing and treating a complex computer system as a single entity.

Just as a holistic approach to medicine treats each patient as an integrated system and considers how the mind affects the body, a holistic approach to technology focuses on the interdependence of system components.

Holistic approaches include:

Systems thinking - a holistic approach to analysis that focuses on the way that a system's constituent parts interrelate, how systems work over time and how they work within the context of even larger systems.

Process-centric BPM - a holistic approach to BPM that centers on business processes themselves, rather than individual elements such as documents, workflow or people.

Information governance - a holistic approach to managing corporate information by implementing processes, roles, controls and metrics that treat information as a valuable business asset.

Supply chain sustainability - a holistic perspective of supply chain processes and technologies that go beyond the focus of delivery, inventory and traditional views of cost.

Enterprise risk management - a holistic approach to planning, organizing, leading, and controlling an organization's activities in order to minimize the effects of risk on capital and earnings.

Franklin elaborated: *"When work is organized as a sequence of separately executable steps, the control over the work moves to the organizer, the boss or manager. In political terms, prescriptive technologies are designs for compliance."*

Platform capitalism relies upon prescriptive technologies like those that tell Uber drivers how to act in order to keep their 5-star ratings. You can see how dominant such a prescriptive technology becomes by the number of offers to game the platform. The ubiquitous search engine optimization (SEO) industry is based on Google's dominance of internet search. But gaming the system means buying into it. Prescriptive technologies limit human potential.

Holistic technologies are used by knowledge artisans to do and share their work. For example, the open source community is based on ensuring that code is transparent and is open to forking (changing the direction of development). Holistic technologies enable human creativity and potential.

As informed citizens we have to start asking ourselves how we can cast away these prescriptive technologies and master holistic ones between engaged artisans. Corporations will be of no assistance and most of our governing bodies are inadequately informed to be of much help. Not only are we the media, but we must become the technology as well.

OR

Q.2. What are the Universal Human Values?Discuss in detail. **(12.5)**

Ans. A value is a **universal value** if it has the same value or worth for all, or almost all, people. Spheres of human value encompass morality, aesthetic preference, human traits, human endeavour, and social order. Whether universal values exist is an unproven conjecture of moral philosophy and cultural anthropology, though it is clear that certain values are found across a great diversity of human cultures, such as primary attributes of physical attractiveness (e.g. youthfulness, symmetry) whereas other attributes (e.g. slenderness) are subject to aesthetic relativism as governed by cultural norms. This objection is not limited to aesthetics. Relativism concerning morals is known as moral relativism, a philosophical stance opposed to the existence of universal moral values.

The claim for universal values can be understood in two different ways. First, it could be that something has a universal value when everybody *finds* it valuable. This was Isaiah Berlin's understanding of the term. According to Berlin, "...universal values....are values that a great many human beings in the vast majority of places and situations, at almost all times, do in fact hold in common, whether consciously and explicitly or as expressed in their behaviour..." Second, something could have universal value when all people have *reason* to believe it has value. Amartya Sen interprets the term in this way, pointing out that when Mahatma Gandhi argued that non-violence is a universal value, he was arguing that all people have *reason* to value non-violence, not that all people *currently* value non-violence. Many different things have been claimed to be of universal value, for example, fertility, pleasure,and democracy.The issue of whether anything is of universal value, and, if so, what that thing or those things are, is relevant to psychology, political science, and philosophy, among other fields.

Perspectives from various disciplines

Philosophy: Philosophical study of universal value addresses questions such as the meaningfulness of universal value or whether universal values exist.

Sociology: Sociological study of universal value addresses how such values are formed in a society.

Psychology and the search for universal values

S. H. Schwartz, along with a number of psychology colleagues, has carried out empirical research investigating whether there are universal values, and what those values are. Schwartz defined 'values' as "conceptions of the desirable that influence the way people select action and evaluate events" He hypothesised that universal values would relate to three different types of human need: biological needs, social co-ordination needs, and needs related to the welfare and survival of groups. Schwartz's results from a series of studies that included surveys of more than 25,000 people in 44 countries with a wide range of different cultural types suggest that there are fifty-six specific universal values and ten types of universal value.Schwartz's ten types of universal value are: power, achievement, hedonism, stimulation, self-direction, universalism, benevolence, tradition, conformity, and security. Below are each of the value types, with the specific related values alongside:

- *Power*: authority; leadership; dominance, social power, wealth
- *Achievement*: success; capability; ambition, influence; intelligence; self-respect
- *Hedonism*: pleasure; enjoying life
- *Stimulation*: daring activities; varied life; exciting life
- *Self-direction*: creativity; freedom; independence; curiosity; choosing your own goals
- *Universalism*: broadmindedness; wisdom; social justice; equality, a world at peace; a world of beauty; unity with nature; protecting the environment, inner harmony
- *Benevolence*: helpfulness; honesty; forgiveness; loyalty; responsibility; friendship
- *Tradition*: accepting one's portion in life; humility; devoutness, respect for tradition; moderation
- *Conformity*: self-discipline; obedience
- *Security*: cleanliness; family security; national security; stability of social order; reciprocation of favours; health; sense of be'onging

Schwartz also tested an eleventh possible universal value, 'spirituality', or 'the goal of finding meaning in life', but found that it does not seem to be recognised in all cultures.

Q.3. Describe various testing methods for safety. **(12.5)**

Ans. Various testing methods for safety are as under:

1. Impact Resistance – This is a test of a shoe's capacity to protect the toe area of the foot against falling objects. For Impact testing, a weight is dropped onto the protective toe cap area of the footwear. Each standard identifies the atmospheric conditions of the test, the shape of the striker, the amount of weight and distance from which the weight must be dropped, the velocity of the drop and the impact energy delivered. The clearance remaining inside the cap after impact is then determined

2. Compression Resistance – This is a test of a shoe's capacity to protect the toe area of the foot against heavy rolling objects. For Compression testing, the toe cap area of the footwear is compressed between parallel platens at a given rate of speed until the required compressive force is reached. The clearance remaining inside the cap after the compression is then determined.

3. Metatarsal Protection – This test measures the level of protection provided to the upper foot (metatarsal bones) and toe areas. Footwear offering metatarsal protection is designed to prevent or reduce injuries when the toe and metatarsal areas of the foot

are exposed to "drop" hazards. Metatarsal protection safety shoes may be constructed with either internal or external metatarsal guards. For testing, a wax form is fit into the footwear and a weight is dropped onto the protected metatarsal area of the footwear, similar to the impact test. The height of the wax form after impact is then determined.

4. Puncture Resistance – PR footwear reduces the possibility of sharp objects (nails, glass or metal) penetrating through the outsole causing injury to the foot. Protection is provided by a steel or puncture resistant material imbedded in the insole of the footwear. Puncture resistant devices are tested using a sharp steel pin forced into the device at a given speed. The force required to puncture the device is measured. The devices are also tested for flexibility and corrosion resistance.

5. Electric Shock Resistance – This type of footwear is designed to provide a secondary source of protection against accidental contact with live electrical circuits, electrically energized conductors, parts or apparatus under dry conditions, reducing the potential of electric shock. Protection is severely deteriorated in wet environments. To test electric shock resistant properties, the footwear is placed on a metal mesh platform acting as a large electrode. The footwear is filled with small metal spheres and a second electrode is placed within the spheres. A specified high voltage is applied to the footwear through the metal platform for a given length of time. Resistance is determined by the current flow (or leakage) through the footwear.

6. Static Dissipation – This footwear is constructed to reduce excess static electricity by conducting the charge from the body to the ground. The footwear allows for limited protection against incidental contact with live electrical circuits and should not to be worn around highly charged electrical equipment. It is recommended that static dissipative footwear be worn only in clean environments and worn in conjunction with static dissipative flooring. Test methods for Static Dissipation vary by standard, using either human subjects or metal spheres inside footwear that are placed on either a wet or dry base electrode plate. A specified voltage is applied for a prescribed time and the electrical resistance is measured. Test conditions also vary in specified atmospheric conditions.

7. Conductivity – Conductive footwear is designed to facilitate/ discharge static electricity from your body through your shoes into grounded floors. The floors must be grounded so that a charge can be dissipated properly, minimize static electricity and reduce the possibility of ignition of volatile chemicals or explosives. To test for conductivity, the footwear is placed on a base electrode plate. Depending on the standard, it is tested dry or in water. The footwear is filled with small metal spheres and a second electrode is embedded in the spheres. A specified voltage is applied for a prescribed time and the electrical resistance is measured

OR

Q.3. Discuss the case study on space shuttle "Challenger" disaster in detail. **(12.5)**

Ans. Introduction to the Case: On January 28, 1986, seven astronauts were killed when the space shuttle they were piloting, the Challenger, exploded at just over a minute into the flight. The failure of the solid rocket booster O-rings to seal properly allowed hot combustion gases to leak from the side of the booster and burn through the external fuel tank. The failure of the O-ring was attributed to several factors, including faulty

design of the solid rocket boosters, insufficient low-temperature testing of the O-ring material and of the joints that the O-ring sealed, and lack of proper communication between different levels of NASA management. *Key Issues*

How does the implied social contract of profressionals apply to this case? What profressional responsibilities were neglected, if any?

Should NASA have done anything differently in their launch decision procedure?

Background

Pressure to launch: NASA managers were anxious to launch the Challenger for several reasons, including economic considerations, political pressures, and scheduling backlogs. Unforeseen competition from the European Space Agency put NASA in a position in which it would have to fly the shuttle dependably on a very ambitious schedule to prove the Space Transportation System's cost effectiveness and potential for commercialization. This prompted NASA to schedule a record number of missions in 1986 to make a case for its budget requests.

The shuttle mission just prior to the Challenger had been delayed a record number of times due to inclement weather and mechanical factors. NASA wanted to launch the Challenger without any delays so the launch pad could be refurbished in time for the next mission, which would be carrying a probe that would examine Halley's Comet. If launched on time, this probe would have collected data a few days before a similar Russian probe would be launched.

There was probably also pressure to launch Challenger so that it could be in space when President Reagan gave his State of the Union address. Reagan's main topic was to be education, and he was expected to mention the shuttle and the first teacher in space, Christa McAuliffe.

The Launch: During the night, temperatures dropped to as low as 8°F, much lower than had been anticipated. To keep the water pipes in the launch platform from freezing, safety showers and fire hoses had been turned on. Some of this water had accumulated, and ice had formed all over the platform. There was some concern that the ice would fall off of the platform during launch and might damage the heat-resistant tiles on the shuttle. The ice inspection team thought the situation was of great concern, but the launch director decided to go ahead with the countdown. (Note that safety limitations on low temperature launching had to be waived and authorized by key personnel several times during the final countdown. These key personnel were not aware of the teleconference about the solid rocket boosters that had taken place the night before.)

At launch, the impact of ignition broke loose a shower of ice from the launch platform. Some of the ice struck the left-hand booster, and some ice was actually sucked into the booster nozzle itself by an aspiration effect. Although there was no evidence of any ice damage to the Orbiter itself, NASA analysis of the ice problem was wrong. The booster ignition transient started six hundredths of a second after the igniter fired. The aft field joint on the right-hand booster was the coldest spot on the booster: about 28°F. The booster's segmented steel casing ballooned and the joint rotated, expanding inward as it had on all other shuttle flights. The primary O-ring was too cold to seal properly, the cold-stiffened heat resistant putty that protected the rubber O-rings from the fuel collapsed, and gases at over 5000°F burned past both O-rings across 70 degrees of arc.

Eight hundredths of a second after ignition, the shuttle lifted off. Engineering cameras focused on the right-hand booster showed about nine smoke puffs coming from the booster aft field joint. Before the shuttle cleared the tower, oxides from the burnt propellant temporarily sealed the field joint before flames could escape.

Fifty-nine seconds into the flight, Challenger experienced the most violent wind shear ever encountered on a shuttle mission. The glassy oxides that sealed the field joint were shattered by the stresses of the wind shear, and within seconds flames from the field joint burned through the external fuel tank. Hundreds of tons of propellant ignited, tearing apart the shuttle.

One hundred seconds into the flight, the last bit of telemetry data was transmitted from the Challenger

Q.4. Discuss commandments of computer ethics created by Computer Ethics Institute. **(12.5)**

Ans. ***Ten Commandments of Computer Ethics***

1. Thou Shalt Not Use A Computer To Harm Other People.
2. Thou Shalt Not Interfere With Other People's Computer Work.
3. Thou Shalt Not Snoop Around In Other People's Computer Files.
4. Thou Shalt Not Use A Computer To Steal.
5. Thou Shalt Not Use A Computer To Bear False Witness.
6. Thou Shalt Not Copy Or Use Proprietary Software For Which You have Not Paid.
7. Thou Shalt Not Use Other People's Computer Resources Without Authorization Or Proper Compensation.
8. Thou Shalt Not Appropriate Other People's Intellectual Output.
9. Thou Shalt Think About The Social Consequences Of The Program You Are Writing Or The System You Are Designing.
10. Thou Shalt Always Use A Computer In Ways That Insure Consideration And Respect For Your Fellow Humans.

OR

Q.4. What is Ozone depletion? Explain the causes, effects and remedies of Ozone depletion. **(12.5)**

Ans. The earth's atmosphere is composed of many layers, each playing a significant role. The first layer stretching approximately 10 kilometers upwards from the earth's surface is known as the troposphere. A lot of human activities such as gas balloons, mountain climbing, and small aircraft flights take place within this region.

Ozone layer is a deep layer in earth's atmosphere that contain ozone which is a naturally occurring molecule containing three oxygen atoms. These ozone molecules form a gaseous layer in the Earth's upper atmosphere called stratosphere. This lower region of stratosphere containing relatively higher concentration of ozone is called Ozonosphere. The Ozonosphere is found 15-35 km (9 to 22 miles) above the surface of the earth.

The ozone layer forms a thick layer in stratosphere, encircling the earth, that has large amount of ozone in it. The ozone layer protects life on earth from strong ultraviolet radiation that comes from the sun. Ultraviolet rays are harmful rays that can drive up the risk of deadly disorders like skin cancer, cataracts and damage the immune system. Ultraviolet rays are also capable of destroying single cell organism, terrestrial plant life, and aquatic ecosystems.

The ozone layer has the capability to absorb almost 97-99% of the harmful ultraviolet radiations that sun emit and which can produce long term devastating effects on humans beings as well as plants and animals.

The destruction of ozone layer is caused by one factor only which is Cholorofluorocarbons.

The main cause of the ozone hole was found to be gases that contained Cholorofluorocarbons (CFCs), Halons and Freons. Found commonly in aerosol cans and released by many electronic appliances, these were seen to decrease the level of ozone in the stratosphere. All of these gases contain chlorine, which is a major cause behind the thinning of the ozone layer.

The presence of chlorine within CFC's break down the ozone gases in ozone layer which increases the chances of ozone depletion. Till date, CFC's have accounted for about 80% of ozone depletion.

The destruction of the ozone layer is primarily caused when the amount of gases that contain chlorine begins to increase in the environment. As these gases rise upwards, they are exposed to UV light. This then causes a chemical reaction which creates chlorine atoms. These affect the atoms of ozone and cause ozone depletion.

Although the process has been taking place for several years, the ozone layer was repairing itself naturally. With the marked increase in the emission of these gases, the ozone hole above Antarctica is becoming a permanent part of the layer. Even though the damage is reversible, it will require several decades and a major reduction in the emissions.

CFC's are not washed back to the earth and are not even destroyed in reaction with other chemicals which means that they can remain the atmosphere for large period of time may be from 20 to 120 years or more. As a result, they are transported back to stratosphere, where they are eventually broken down by UV rays from the sun, releasing free chlorine.

Even though the hole present above the Antarctic is beginning to show signs of a decline, there are concerns regarding the long term effects. In particular, many scientists are worried that the development of the same conditions in other parts of the world may cause large scale ozone thinning in the future, if not ozone depletion all together

Effects of the Ozone Hole

Thinning of ozone layer means getting direct in touch with ultra violet rays which can cause skin cancer or skin irritation which can lead to death. A decrease in 1% of ozone layer can cause 5% increase in cases of skin cancer.

Exposure to UV rays has also increased the cases of cataracts which in turn affects people's vision and could also cause an increase in people becoming blind.

Depletion of ozone layer and increase in UV rays can also cause DNA damage which can also be catastrophic.

Aquatic plants and animals are not even safe. UV rays can penetrate through water and can kill small plants and animals. If ozone hole keep on expanding, there would be very few plants which means less food in the whole world.

The effect of the ozone hole and the damage done to the layer is still not very well understood. Apart from the gradual decrease of the ozone layer all over the world, there is little quantifiable evidence of new holes appearing any time soon. Even so, a number of countries have been working towards mitigating the damage.

CFC's have been banned, especially in aerosol cans and various electrical appliances. There have been many conventions held to discuss the methods that will slowly phase out the use of the gases. However, this has been met with a great deal of resistance from industries that are based on the production and use of the gases.

However, the few known and verifiable effects seen within the environment has been a catalyst for change. One of widespread and long lasting effects has been the public awareness towards the environmental issues facing the planet. As one of the first major man-made problems to be discussed on a public forum, it set the ground for public opinion and action on issues such as pollution, greenhouse gases, global warming and the climate crisis.

It also sparked off renewed research about how weather patterns and natural phenomenon may be disturbed small changes in the atmosphere. Ozone depletion is not as serious as it once was, but nonetheless it has had an impact on the planet.

Scientists have been able to determine a number of consequences related to ozone depletion. First is the increase of UVB (Ultraviolet B) light that enters into the atmosphere. This causes environmental damage and problems in human health. Cancer of the skin is being connected to the thinning of the ozone layer.

In the animal kingdom, many species of animals have been found suffering from growing sunburn as a result of increased UV light. Certain crops will also be affected, since they are dependent on cyanobacteria which is quite sensitive to changing levels of the UV radiation. On the other hand, it has also been found that the increased levels allow for the production of more Vitamin D in the animal kingdom.

The ozone layer does not face rampant ozone depletion anymore, as most governments and environmental agencies have worked hard to reduce the emission of CFCs. This has proven to be a success and is the base for further work in reducing dangerous emissions.

Solution to Ozone depletion

1. Using pesticides:

Pesticides are great chemicals to rid your farm of pests and weeds, but they contribute enormously to ozone layer depletion. The surefire solution to get rid of pests and weeds is to apply natural methods. Just weed your farm manually and use alternative eco-friendly chemicals to alleviate pests.

2. Discourage driving of private vehicles

The easiest technique to minimize ozone depletion is to limit the number of vehicles on the road. These vehicles emit a lot of greenhouse gases that eventually form smog, a catalyst in the depletion of ozone layer.

3. Utilize environmentally friendly cleaning products

Most household cleaning products are loaded with harsh chemicals that find way to the atmosphere, eventually contributing to degradation of the ozone layer. Use natural and environmentally friendly cleaning products to arrest this situation.

4. Prohibit the use of harmful nitrous oxide

The Montreal Protocol formed in 1989 helped a lot in the limitation of Chlorofluorocarbons (CFCs). However, the protocol never covered nitrous oxide, which is a known harmful chemical that can destroy the ozone layer. Nitrous oxide is still in use today. Governments must take action now and outlaw nitrous oxide use to reduce the rate of ozone depletion.

While the vast majority of ODS usage is either industrial or commercial, individuals can help in the following ways:

- Buy air-conditioning and refrigeration equipment that do not use HCFCs as refrigerant.
- Buy aerosol products that do not use HCFCs or CFCs as propellants.
- Conduct regular inspection and maintenance of air-conditioning and refrigeration appliances to prevent and minimize refrigerant leakage.
- For existing air-conditioning and refrigeration appliances that operate on HCFCs or CFCs, the refrigerant should be recovered or recycled whenever an overhaul of equipment is to be carried out. Replacing or retrofitting such equipment to operate on non-HCFCs refrigerant should also be considered.
- When motor vehicle air-conditioners need servicing, make sure that the refrigerants are properly recovered and recycled instead of being vented to the atmosphere.

Q.5. What is the need of Ethical Code? Explain with the help of the case study of Computer Society of India (CSI)? **(12.5)**

Ans. Engineering is an important and learned profession. As members of this profession, engineers are expected to exhibit the highest standards of honesty and integrity. Engineering has a direct and vital impact on the quality of life for all people. Accordingly, the services provided by engineers require honesty, impartiality, fairness, and equity, and must be dedicated to the protection of the public health, safety, and welfare. Engineers must perform under a standard of professional behavior that requires adherence to the highest principles of ethical conduct.

Fundamental Canons

Engineers, in the fulfillment of their professional duties, shall:

1. Hold paramount the safety, health, and welfare of the public.
2. Perform services only in areas of their competence.
3. Issue public statements only in an objective and truthful manner.
4. Act for each employer or client as faithful agents or trustees.
5. Avoid deceptive acts.
6. Conduct themselves honorably, responsibly, ethically, and lawfully so as to enhance the honor, reputation, and usefulness of the profession.

All members are required to give an undertaking to the effect that they would abide by the CSI Code of Ethics. The Code of Ethics will also specify the procedure for the action to be taken against concerned members for any breach of this Code. Following is the Code of Ethics prepared by the ExecCom and adopted after approval by balloting by the Voting Members of CSI.

Code of ethics for CSI members (all categories)

A member of the Computer Society of India (CSI) shall :

- Organise the resources available to him and optimise these in attaining the objectives of his organisation
- Not misuse his authority or office for personal gains
- Comply with the Indian laws relating to the management of his organisation and operate within the spirit of these laws.

• Conduct his affairs so as to uphold, project and further the image and reputation of the CSI.

• Maintain integrity in research and publications.

As regards his ORGANISATION CSI member should :

• Act with integrity in carrying out the lawful policy and instructions of his organisation and uphold its image and reputation. Plan, establish and review objectives and tasks for himself and his subordinates which are compatible with the Codes of practice of other professionals in the enterprise, and direct all available effort towards the success of the enterprise rather than of himself.

• Fully respect the confidentiality of information which comes to him in the course of his duties, and not use confidential information for personal gain or in a manner which may be detrimental to this organisation or his clients.

• Not snoop around in other people's computer files.

• In his contacts and dealings with other people, demonstrate his personal integrity and humanity and when called to give an opinion in his professional capacity, shall, to the best of his ability, give an opinion that is objective and reliable.

As regards the EMPLOYEES, CSI member should :

• Set an example to his subordinates through his own work and performance, through his leadership and by taking

• Account of the needs and problems of his subordinates.

• Develop people under him to become qualified for higher duties.

• Pay proper regard to the safety and well being of the personnel for whom he is responsible.

• Share his experience with fellow professionals.

As regards the CLIENTS, CSI member should :

• Ensure that the terms of all contracts and terms of business be stated clearly and unambiguously.

• Not use the computer to harm other people or to bear false witness.

• Be objective and impartial when giving independent advice.

As regards the COMMUNITY, CSI member should :

• Make the most effective use of all natural resources employed.

• Be ready to give professional assistance in community affairs.

• Not appropriate other people's intellectual output.

• Always use a computer in ways that ensure consideration and respect for fellow humans.

OR

Q.5. Explain work culture and its different types.Also give the rules for creating the right conditions for a good organizational culture. (12.5)

Ans. Mapping those two dimensions of "competing values" you get four organizational culture types:

• the dynamic, entrepreneurial Create Culture

• the people-oriented, friendly Collaborate Culture

• the process-oriented, structured Control Culture

• the results-oriented, competitive Compete Culture

These *organizational culture types* are also known as Adhocracy culture, Clan culture, Hierarchy culture, and Market culture (Cameron & Quinn).

Create Culture (Adhocracy Culture)

This is a dynamic and creative working environment. Employees take risks. Leaders are seen as innovators and risk takers. Experiments and innovation are a way of bonding. Prominence is emphasized. The long-term goal is to grow and create new resources. The availability of new products or services is seen as a success. The organization promotes individual initiative and freedom.

• Do new things: create, innovate, envision the future

• Transformational Change

• Handle discontinuity, change, and risk

• Freedom of thought and action, rule-breaking

• Thoughtful experimentation, learning from mistakes, failing fast

• Roles like entrepreneurs and visionaries

• Visionaries inclined toward risk, not afraid of uncertainty

Typical in sectors like technical start-ups, technology-driven industries (communications, sustainability), but also disruptive services like Airbnb, Uber

Collaborate Culture (Clan Culture)

This working environment is friendly. People have a lot in common, and it feels like a large family. The leaders are seen as mentors or maybe even father figures. The organization is held together by loyalty and tradition. There is great involvement. They emphasize long-term Human Resource Development. Success is defined within the framework of addressing the needs of the clients and caring for the people. The organization promotes teamwork, participation, and consensus.

• Do things together: build teams, people matter

• Long-term Change

• Commitment, empowerment, cohesion, engagement

• Human development

• Collective wisdom, long-lasting partnerships, and relationships

• Roles like a mentor and a coach

• Wary of conflict

Typical in sectors like health care, education, some government agencies, not-for-profits.

Control Culture (Hierarchy Culture)

This is a formalized and structured workplace. Procedures direct what people do. Leaders are proud of efficiency-based coordination and organization. Keeping the organization functioning smoothly is most crucial. Formal rules and policies keep the organization together. The long-term goals are stability and results, paired with an efficient and smooth execution of tasks. Reliable delivery, continuous planning, and low cost define success. The personnel management has to guarantee work and predictability.

• Do things right: eliminate errors

• Incremental Change

- Attention to details, careful decisions, precise analysis
- Increase consistency and reliability, well-informed experts
- Better processes and efficiency, routines
- Roles like organizers and administrators
- Conservative, cautious, logical problem solvers

Typical in sectors like medicine, nuclear power, military, government, banking and insurance, transportation.

Compete Culture (Market Culture)

This is a results-based workplace that emphasizes targets, deadlines, and getting things done. People are competitive and focused on goals. Leaders are hard drivers, producers, and rivals. They can be tough with high expectations. The emphasis on winning keeps the organization together. Reputation and success are the most important. Long-term focus is on rival activities and reaching goals. Market dominance, achieving your goals, and great metrics are the definitions of success. Competitive prices and market leadership are important. The organizational style is based on competition.

- Do things fast: compete, move fast, play to win
- Fast Change
- Customer satisfaction, attack competitors, shareholder value
- Speed: results-right-now, getting things done, achieving goals
- Acquire other firms, outsource selected processes,
- Deliver results, make fast decisions, solve problems
- Leaders are hard-driving, directive, commanding, demanding

Typical of sectors like consultancy, accountancy, sales and marketing, services, manufacturing.