Even (Spring) Semester Examination 2023-2024

Paper Code: MBAUGHU02; Paper name: Professional Values and Ethics

VIIIth Semester

Full Marks: 80; Time: 3Hrs.

(The figures in the margin indicate full marks.
Candidates are required to give their answers in their own words as far as possible)

GROUP: A (*Answer all the questions*) (1 x 10 = 10)

1. **Choose and write ONLY the correct option (a/b/c/d). DO NOT write full sentences.**

I. The rule of ethics is also called as
A. Rule B. Law C. Responsibility D. None of the above

II. Ethical issues that can affect an Engineer's professional and personal life are termed as
A. Macro-ethics B. Micro-ethics C. Morals D. Rights

III. Business malpractice does not include
A. Black Marketing B. Advertisement C. Duplication D. Adulteration

IV. Dowry deaths, wife battering is an example of
A. Criminal violence B. Domestic violence C. Social violence D. Gross violence

V. Ethics is the science of
A. beauty B. conduct C. truth D. mind

VI. Value is
A. response of the society B. enduring belief C. material culture D. non-material culture

VII. The word 'ethics' was derived from the Greek word
A. ethics B. ethos C. ethees D. ethise

VIII. Aesthetics deals with the standard of
A. truth B. beauty C. goodness D. trust

IX. Business ethics has a _____ application.
A. natural B. universal C. practical D. none of the above

X. The relevance of ethics is in its
A. Context B. Applications C. Principles D. Understanding

GROUP: B (*Answer any five questions*) (5 x 5 = 25)

2. What do you mean by 'Values' and 'Ethics'?
3. What are the features of 'Rapid Technology growth'? Discuss.
4. Write a short note on 'Solar Energy'.
5. What are the problems of Man machine Interactions?
6. Write a short note on 'Canons of Ethics'.
7. Write the names of five 'Environmental Regulations Acts'?
8. Discuss the problems of Technology Transfers.

GROUP: C (*Answer any three questions*) (15 x 3 = 45)

9. Discuss the concept of value crisis in contemporary Indian society.
10. What is the concept of 'Club of Rome'? Discuss with suitable diagram.
11. Justify your view on inclusion of 'Professional Values and Ethics' course in the Engineering domain.
12. Discuss the Appropriate Technology Movement of Schumacher.
13. What do you understand by 'Sustainable Development'? How is 'Sustainable Development' linked with 'Energy Crisis & Renewable Energy Sources'?

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VALUE & ETHICS IN PROFESSION

Value

The word 'value' is derived from a French word 'valor' which means the worth, merit, usefulness or importance of thing. Value concept is more relative than absolute.

Value is worth that which renders anything useful. Value is a behavioral concept related to an individual or a group. In the determination of human behavior the most important factor is a person's specific value awareness.

Values set normative standards on the basis of which people make their choice of alternatives courses of action.

Following aspects help in understanding values:

- Giving due value for money to customers in terms of quantity, quality and service.
- Defining corporate mission and strategies.
- Concern for efficiency at work place.
- Reasonable profit margins pricing.
- Form proper and just decision in management function.
- Value of product that fulfill one's need or want.
- Leads like honesty, integrity, patriotism, selfless service, environment conservation, and non-violence etc.
- Feeling for society, nation and the poor.
- Market value of a commodity in exchange of value.
- Laws have their values because they are socially accepted yardstick of behavior.

Values sometime are also broadly classified as moral values and competence values. Moral values are concerned with modes of behavior. Competence values are concern with self actualization and such values reflect a personal rather than an impersonal focus, they are not so much concerned with morality.

Ethics → derived from Greek word 'ethos'

(a) Ethics are basically codes governing "Dos" and "Don't". Ethics involves the study of moral issues and choices. It is conceded with right versus wrong, good versus bad.

Some philosophers do not differentiate between business ethics and management ethics. According to them there is no such thing as this ethics or that ethics, there is only ethics.

What you do there is no different from what you do here. Moral implication springs from virtually every decision, both on and off there Job. Managers are challenged to have moral imagination and the courage to do the right thing. To meet that challenge, present and future managers need a conceptual frame work for making ethical decisions.

(b) Ethical and unethical conducts are the products of a complex combination of influences of the following parameters. 11

1. **Cultural Influences**
   - Family
   - Education
   - Religion
   - Media/Entertainment
2. **Organizational Influences**
   - Ethical codes
   - Organization culture
   - Role models
   - Perceived Pressure
   - Reward/Punishment system
3. **Political / Legal / Economic Influences**

Above there aspects lead to individual role – exceptions in the following:

Individual ethical behavior

- Personality
- Values

Moral Principles

Ethical or unethical behavio0ur is the result of person – situation interaction which is influenced by an individual's moral principles and the organization's ethical climate.

(c) **Individual Differences, Values and Ethics:** Due to a vast array of individual differences such as behavior, attitude, dress etc modern organizations have a rich and interesting human texture.

On the other hand, individual differences make the manager's job endlessly challenging.

Growing work force diversity compls managers to view individual differences in a fresh way.

Successful business and organizations are adapting to both internal or external changes such as operational styles, language, customs, values and dress etc.

We now hear leaders talking about "valuing differences" and lecring to manage diversity.

So, rather than limiting diversity as in the past, to day managers need to better understand and accommodate employee diversity, and individual differences.

Utilitarianism is a value based modern policy making and the decisive test for most proposed legislation is "Will it serve the largest possible people with the greatest benefit".

The value based principle 'Utilitarianism' is best known by the maxim do whatever produces the greatest good for the greatest number of people.

Utilitarianism focuses on result of an action rather than ethics behind an action.

Ethics is a concept of what you ought to do and you have not to do because rules compel it (i.e. buying a ticket for train journey) or nature requires you to do it (i.e. sleeping and eating).

(d) **Professional ethics:** Professional ethics are guided by Si8x principles honesty, fairness, respect, compassion, integrity and self discipline.

Professional ethics are expressed in one's action. A professional manager while taking a decision must ensure that the above principles are not vi9olated. A guiding rule for valuation of the ethical content is that the action should always stand scrutiny.

Professional ethics may be integrated with the corporate and organization values.

In profession, ethical decisions are required to be taken for the overall benefit of the organization. self discipline in profession is the key to success. This is the single factor that can lift one man above his or her colleagues in terms of achievement and success.

P.E Ducker distinguished between and manager as a group leader within and organization and as an individual. Ethics of community responsibility should not be forced upon managers and hamper their leadership role. They should be professional and practice ethics related to their own profession.

Neither there is a separate ethics of business nor is one needed. Only mete out stiff punishments to those who yield to temptation.

Rapid Technology growth & depletion of Resources

Rapid Technology growth

What is Technology? : Technology is the most difficult of the three inputs to production to define and envision. Technology is a form of knowledge, it includes the knowledge needed to produce agricultural products from baby food to wine, the knowledge to make industrial products from penicillin to satellites, the knowledge to produce services from rock concerts to heart transplants, even the knowledge of how to get oil and minerals out of the ground.

Technology is defined as anything that raises the amount of real GDP that can be produced with a given amount of labour and capital.

Technological progress is an improvement in technology, but since technology is usually increasing, the firm technological change also usually means an improvement.

Thus, technological progress also includes things that increase the quality and diversity of goods and services.

GDP = Gross domestic Product

Invention, Innovation and Diffusion: Technological change occurs when new ideas are developed into new products that increase production.

Invention, which is discovery of new knowledge such as electricity is different from Innovation, which is the new knowledge brought into application with a new product, such as electric bulb.

Diffusion of the innovation throughout an economy is a process that involves advertising, marketing and spreading the innovation to new uses, such as use of electric bulb to create night shifts in factories.

This technology is much more than scientific knowledge. The discovery of DNA did not improve technology until it was applied to genetic engineering. The knowledge of mathematics made possible the invention and development of computers in the 1940s in the US, a technology that has obviously improved productivity.

Technology depends in part on scientific knowledge, and many people feel that science will become more and more important in future technological change.

The development of the sewing machine by the Singer Company in the US and its wide spread uses proves the concept how innovation and diffusion encourage Entrepreneurs who recognize the potential and invention.

Special Features of the Technology Market: When viewed as a c commodity that can be produced, technology has two special qualities that affect hour much will be produced. The first is non rivalry. This means that one person's use of the technology does not reduce the amount that another person can use.

If one University uses the same book, filing system as another University, that does not deduce the quality of the first university's system. In contrast most goods are rivals in consumption. The second feature of technology is non excludability. This means that the inventor can not exclude other people from using it.

Innovation = It is bringing new ideas / changes to the invention to improve it, for eg bulb without electricity (ie LED)

Depletion of Resources

Natural resources are given to mankind by nature. Such resources are essential not only for development of economic activities like agriculture, industry etc. but also vital for existence of life on earth.

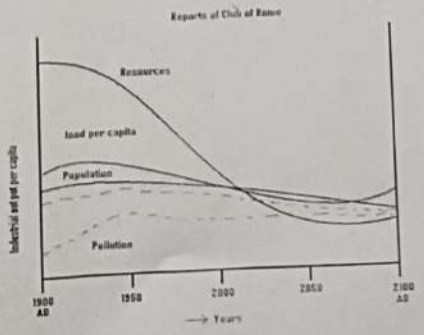
Natural resources can be broadly classified into: (1) renewable or replaceable resource which are the ones that be renamed over time or are automatically renewed. **(2)** non renewable or non replaceable resources which are there in limited quantities and the rate of exploitation determines the numbers of years for which such resources can be consumed. Minerals are largely in this category.

This distinction has become important in recent years as people have relished that they can not continue to extract many of the resources for long at their present rate of growth in consumption due to heavy pressure of population, and hence there is urgent need for control of over consumption.

People also realized that nature takes its own time to replete the renewable resources and there are some such resources like forests and water that are vital from the point of view of maintaining ecological balance and hence consumption of renewable resources too needs careful supervision.

India is rich in natural resources. Possession of natural resources by it self does not ensure development. It has to be supported by availability of technology for extraction and processing and capability to support development of processing and variety of other down stream industries. Countries are dependent on natural resources for furtherance of economic growth and it will continue to be so.

Reports of Club of Rome



Solar Energy...
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Short Note on Solar Energy (in Points for 5 Marks):

1. Solar energy is the energy we get from the Sun.
2. It is a renewable and non-polluting source of energy.
3. Solar panels convert sunlight into electricity or heat.
4. It is used in homes, schools, calculators, and street lights.
5. Solar energy helps save money and protect the environment.

Do you like this personality?

Ask anything

to integrate, to judge and to imagine. In fact, this is its only specific superiority, in every other respect whether it be physical strength, manual skill or sensory perception machines can do a much better job.

Emphasis on human approach focuses on man as a moral and social being. The qualities of the person are specific and unique. The human being, unlike any other resource, has absolute control over whether he works at all. The human resource must always be motivated to work.

It has been studied by several experts and found that attitudes of human operatives are very important for enhancing productivity and that machine and techniques have little contribution in this aspects. Similarly good morale of the worker greatly contributes to improve productivity.

A manager must create a positive motivation in Engineering projects and industries for the human operators to contribute their best.

In the most completely machine paced operation, the speed and quality of which are determine by the machine, the human operator still retains decisive control.

In the situation of the advanced technology and modern sophisticated machines, a manger must incorporate suitable training programmers for the operators who can gain both theoretical knowledge and practical skill and be able to produce goods or services of desired quantity ad quality and at the optimum cost.

Problems of Man machine Interactions

The human being has control over how well he works and how much he works, over the quality and quantity of production. A man may be satisfied because he really finds fulfillment in it. He may also be with his hob satisfied because the job permits him. A man may be dissatisfied because he is genuinely discontented. But he may also be dissatisfied because he wants to do abettor job and wants to improve his own works.

There are four ways by which we can attempt to reach the goal of the responsible worker, they are careful placement, high standards of performance, providing the workers with the information needed to control himself and with opportunities for participation in responsible position.

The first requirement of effective work in an organisation is to form a cohesive group of productive work force. A manager must try to avoid conflicts, if any, within the group.

The work should be organized so that the ability and performance of a worker are exhibited maximum.

The individual motions and their sequence while predetermined by analysis, should be group motions with the individuals arranging them within the group as best fits the group needs changing pleas, for instance, making a two man operation out of one originally designed for one man, etc.

In many assembly line operations the movement of a worker from position to position has proved to enhance performance. The most efficient man machine interaction will produce right quality output at right quality and at the optimum cost.

The problem of man machine interaction arises due to.

1. *Inadequate training received by the operator*
2. *Both attitude and morale of the worker are at poor levels.*
3. *Poor upkeep of the machine.*
4. *Poor industrial relations.*
5. *Poor industrial relations.*
6. *Absence of incentives for higher productivity etc.*
7. *Physical and mental fitness of the worker also influence the man machine interaction.*
8. *Attitude and morale greatly influence the man machine interaction.*
9. *Poor working conditions such a improper mutilation and insufficient light also effect man machine interaction.*
10. *Improper work load also effect the man machine interaction.*

Impact of Assembly Line and Automations

Assembly lines are generally of two types:-

i. Sub-Assembly Line and **ii. Final- Assembly Line**

i. **Sub Assembly line:-** A product may have two or more sub assemblies. Each sub assembly consists of several components or parts.

Subassembly items are assembled separately in ship and are brought to the final assembly shop.

ii. **Final Assembly Line:-** Here all sub assemblies are joined to give rise to the final assembly ship. Automobile assembly line is a perfect Engineering of human work and exhibits the proper man machine interaction.

A traditional assembly line process can be completely mechanized with significant increases in efficiency and output. All materials handling, machine tending and routine inspection are automatic.

Efficient mechanization and automation help a deal in enhancing productivity and reducing man hours necessary for the output of the final product.

One organizes the motions mechanically so as to utilize the special properties of machine that is its ability to do one thing fast and faultlessly.

The other one integrates operation so as to utilize the special properties of human being, that is, his ability to make a whole out of many things, to judge, to plan and to change.

The modern technology does make possible the output of more goods with same number of people. Automation derives its efficiency and productivity mainly from the substitution of highly trained, high grade human work for poorly trained or semi skilled human work.

It is a qualitative change requiring people to move from work that is labour intensive to work that is brain intensive, rather than a quantitative changed requiring fewer people. And the people required in the new technology to produce a certain output, will be much more expensive people on whose work will depend a good deal more.

world's research funding goes to projects related to armament and militarization, to put it more bluntly, on refining means of destruction of human life. Some of the best minds of the world are engaged in this activity. They are respected as defense scientists, and they themselves are proud of it.

(vii) **Worship without sacrifice:** Customary morality applauds the traditional forms of worship and socio religious rituals. It is unmindful of the spirit behind their performance. The sense of sacrifice that is giving up a part of our gains, comforts, and conveniences for the sake of others is not considered an essential part of the religious attitude to life.

Religious Morality

Most of our ethical ideas have come to us from religion. This is particularly so for a traditional society like ours where religion has dominant significance in all aspects of our personal and social life. All religions started as reform movements aimed at moral and spiritual enlistment of humankind. They require individuals to rise above their biological and economic needs to seek higher, transcendental goals. The metaphysical belief systems, dogmas, rituals etc., of different religions have wide divergences but their ethic moral teachings have a large measure of commonality. They have inspired generations after generations to seek higher levels of ethical life, and have produced some of the finest gems of human beings as saints, seers, holy men, full of love and compassion for all living beings.

Reflective Morality

The whole enterprise of search for values is aimed at understanding the nature of goodness and the ways for securing it in life. It is a human enterprise and intensely so. Therefore it must involve all the human faculties, those of thinking, feeling and willing. Ethical principles should not only appeal to our emotional sensibilities but must also be consistent with our reason.

This approach would demand that moral principles and precepts be framed by human beings bases on human reason, taking into account the realities of human life, human aspirations and human capabilities. They be open to rational enquiry, revision and modification in light of changing experiences and realities of life. This humanistic approach to morality, bases on human wisdom, will uphold those moral principles which support human well being, help in the growth of full human potential in all the dimensions material, social, intellectual and spiritual, and which produce a harmonious, healthy social life. A morality based on these larger perceptions is termed reflective morality.

Canons Of Ethics

Ethical canons are principles which have general and universal validity. Unlike specific moral codes applicable in particular situations, these general principles provide guidelines for basic ethical attitude towards all actions, in all situations. They are simple, compact statements which have intuitive appeal to the moral sensibility of human beings.

The first ethical canon is, DO NO HARM. It is a general injunction to abstain from causing harm and injury and is applicable to our actions towards all: family, friends, colleagues, society, humanity, all life forms and the whole of the natural order.

Merely desisting from causing harm, however, is not sufficient for moral life, as it may mean a passive, escapist attitude towards ethical problems. We need a more proactive, more positive and more forceful ethical canon. It is, DO GOOD. It is a higher level ethical demand compared to the first canon. It requires that we initiate positive action to do good, and that all our actions be directed towards realization of goodness in life, in our own lives as well as those of others.

2nd ethical canon

These two canons of ethics have significance not only for sages and spiritual aspirants. They are equally important for today's professionals as well. For example, highly specialized professionals like scientists and engineers have a moral responsibility to examine the larger social and human implications of their work. An attitude of disinterested neutrality towards the broader consequences of technical work, as is sometimes upheld as the desired virtue of professionalism, is against the spirit of both the canons of 'do no harm' and 'do good'. The two canons ought to be binding for all kinds of institutions and organizations as well. These institutions exert a greater influence on the quality of life today than the activities of private individuals. It is unfortunate that not much attention has been paid towards developing ethical norms for organizational behavior.

The implication of this canon would be that when judging the moral goodness of a contemplated course of action, put yourself at the receiving end and then imagine what its impact would be like. It is the essential virtue of empathy, to put oneself in the shoes of the other and then feel the pinch. If the view from the other end is good then probably the contemplated action is good. However, the examination of goodness of an act would still require a reasoned examination of the problem on the basis of general ethical principles.

Ethics of Virtue

To be good is to be virtuous. Virtues are the ethically approved traits of character. Their cultivation is an essential hallmark of a moral personality.

Our knowledge of virtues comes mainly from the 'wisdom' literature of various religious traditions. However, the social acceptance and the level of admiration commanded by a particular set of personal virtues depends considerably on the socio political ideals of a society. It is equally affected by the level of society's cultural, moral and philosophical advancement. The Greeks admired courage, justice and temperance as noble virtues. In contrast, the Christians emphasized the virtues of love, kindness, humility and patience. Islam lays greater stress on submission to God, brotherhood and charity. A good Muslim is expected to give two and a half percent of his holdings (not merely income) directly to the poor during the holy month of Ramadan. The four major virtues recommended by Buddha are: Taoism regards living in harmony with the natural order of things, respectful trust towards nature and fellow human beings non competitive and non aggressive attitudes, and humility as the major human virtues in a slightly different vein, Confucianism upholds gentlemanly behavior propriety, and human heartedness as primary virtues.

Although many of the virtues listed above have universal validity, their relative emphasis changes with time and social circumstances. Therefore it becomes the responsibility of every age to choose those personal virtues which it would like to present as worthy of emulation by the individuals. These personal virtues must also have a social orientation. This is because the good life for the individual and the creation of good society are very closely interlined. And the basic foundation for both is the character of individuals. Keeping these factors in view we may propose the following set of personal virtues which need greater emphasis in today's Indian society, particularly for its elite professional classes.

Integrity

The foremost virtue of a good person is a thorough integration of all these three areas of life. Such a

In the nineties, many small and medium scale polluting industries in Delhi were found to shift to distinct places by High court orders.

Similarly, more than 200 tannery producing units in the eastern zone of Kolkata city have been relocated are safe distant place Ranitala as per order of the High Court.

Tolerance Limits – Standards:

(i) Tolerance limits prescribed by Pollution Control Boards for Industrial Effluents for discharge into inland surface water.

IS 2490 (Part - I) – 1981: This standard lays down general tolerance limits for all industrial effluents discharged into inland, surface waters, marine coastal Area, public sewers and on land for irrigation purposes.

14 / 47

...n for sewage effluents discharged into inland surface water.

...nits for sewage effluents discharged into inland surface water.

IS 5182 (Part IV), 1973: The particulate matter concentration in ambient air shall not exceed the following limits when analyzed as prescribed in IS-5182 (Part IV). 1972-Limit-200 mg/m³ for SPM & 60 mg/m³ for sulphur di - oxide emission.

Environmental Regulation

Important Provisions of the Environmental Regulations Acts:

1. The water (Prevention and Control of Pollution) Act, 1974 along with amendment act 1978.
2. The Air (Prevention and Control of Pollution) Act 1981.
3. The water (Prevention and Control of Pollution) Act 1977.
4. The water (Prevention and Control of Pollution) Rules of 1978.
   (a) Minimal National Standards for emission of pollutant gases and industrial effluents.
   (b) Other laws enacted to protect environment are
5. The Air (Prevention and control of Pollution) Act, 1981 amended in 1988.
6. The environment (Protection) Act, 1986.
7. The water (Prevention & Control of Pollution) Act, 1974, amended in 1974 and 1988.
8. The Hazardous Wastes Act, 1989.
9. The Wildlife Protection Act, 1972.
10. The Forests (Conservation) Act, 1980 amended in 1988.

a. Regulatory agencies such as National A forestation and Eco development Board and National Waste land Development Boards also have been set for the environmental protection.

b. Various industrial pollution control Projects such as Clean Ganga Acton Plan, Pushkar Lake Valley, Auroville (T.N), Tumkur (Karnataka), Gopeswar in UU & Shivalik in Punjab have also been carried out for protection of Environment.

Environmental Ethics

a. Important Parameters

(i) **Environmental Threats :-** Greenhouse Gases, Depletion of Ozone Layer, Acidification of Water / Soil Urban pollution & Noise, Metals effects, Organic pollutants effects, Land and water in appropriate use, Land, Water exploitation Housing/ Industrial Infrastructure, Pressure on conservation, Non Cyclic Material flows & Hazardous residues.

(ii) **Greenhouse Effect: -** Ideal global temperature is average 150C, or else the world will freeze, the emissions of CO_2 cause alarming tem premature increase and polar ice caps to melt and increased ocean water levels which may submerge many parts of low lying areas, causing hardship[s for human residents.

(iii) **Greenhouse Gases: -** CO_2 Nitrogen Oxides, CFC's, HFCs, Halogens convert hydrocarbons to Cl_2, Pb, Br_2 and I_2 and replace H_2.

(iv) **Ozone: -** It is in atmosphere and protects life against harmful UV radiation, but at ground level, it is it is harmful to lie and forms breathing disorders. Its depletion is causing holes at Poles, from where the UV radiation is leaching in.

(v) **Whistle Blowing: -** Whistle blowing is an attempt by an employee to disclose, what is proclaimed to be wrong doing by an organization, reporting misdemeanor to some one.

(vi) **Strategy :-**

(a) **Reactive Strategy: -** Resistance of public or government pressures by legal means.

(b) **Defensive Strategy: -** A firm defends its position by less aggressive means. The firm does the minimum requirement and not more, unless compelle3d to do so.

(c) **Strategy of Accommodation: -** More progressive of the strategies, incl9ude acceptance of ideas for social changes, firm's resistance is to the extent of what is not in its best interests. Most companies adopt this strategy.

b. Environmental Ethics – Case Study

Proactive strategy followed by progressive firms where numbers low, but have social good in their active policy. foreign companies operating in Pune since 1960s, installed Eco friendly processes, had concern for water, air and surrounding environment and quality of life for its employees and neighbors.

TELCO planted more than ten million trees and filled up blasted craters with lakes of quality water, so also Kirloskar group companies followed this process.

Before 1960s Pune was green, while the industrial belt running from Kasar wadi to Nigdi, was all non agricultural land. The rocky surface has no top soil, except for a new inches of acidic mud. The govt. Of Maharashtra decided to open the area for rapid industrialization.

The factories first took up ecological development and side by side the mfg. infrastructure.

The result to day is that the residential Pune has become a concrete, unplanned chaos, while industrial area is lush green like Send Society and adjoining University campus, including Spicer college premises, are exceptions.

Here the residents have resisted all moves by Municipal authorities to open up for multi storied monsters and render the remaining lungs of, what was once a beautiful city, into a mega mess, here also.

etc. the country is still depending on the advanced countries for import of technologies.

Peter F. Drucker, the management guru, has emphasized that success depends on making obsolete one to own profitable technologies, and as quickie as possible. His logic is simple, however great one's technology is, once a rival develops a better one, knowledge will corner all super normal profits, leaving his holding an unprofitable, even al l unseal able product that is why in a competitive economy, entrepreneurs run like help to remain where they are.

Developing nations like India, do not let a technology depreciate. Till few years ago, the automobile industry in India was relying mostly on outdated technology.

Singapore Air lines changes air craft every three years, in India we operate the oldest Boeings.

The developed nations spend more funds on inventing technologies and according to phase there is 1st generation. 2nd generation 3rd generation and the fourth generation of technology.

For developed nations technology is embodied in ideas, where as in developing nations, it is embodied in machinery.

Hence, as technology depreciates the developing nation look for new machinery, not for better ideas.

Ideas need innovative researchers. The entrepreneurs in developing nations have little concern for technology depreciation, nor for taking up R & D Programmers.

The industrialist in developing nations normally does not change their products till machinery indigenous technology development.

The globalization of Indian economy has forced Indian industrialist to carry out R & D activities in some sectors such as Pharmaceuticals, Automobile, Railways, Textile, Defense equipment and space etc.

Problem of Technology Transfers

Technology transfer is the process of taking new technology from laboratory to the market place. This transfer takes larger time as organizations grow in size.

The US based chemical giant DuPont has long been known for its excellence in basic corporate research. In the early 1990s, for example, it led US chemical companies in patents applied for and granted. The company spent more than $ 10 billion on chemical and relates research during the 1980s but the management admitted that the company failed to develop much in the way of major innovation.

A company may also decide to make or buy R & D although in-house R & D has been traditionally an important source of technical knowledge for companies, firms can also tap the R & D from a technology supplier company through contractual agreements, such as licensing, R & D agreements and joint ventures.

When product life cycle is long enough, a company is likely to choose its own R & D.

As a rule, it may be stated that company should buy technologies that are commonly available technology may be appropriate in the following cases:-

1. *The technology is of little significance to competitive advantages.*
2. *The supplier has proprietary technology*
3. *The supplier's technology is better and/or cheaper and reasonably easy to integrate into current system.*
4. *The technology development process requires special expertise.*
5. *The technology development process requires new propel and new resources.*
6. *Decision of management on product innovation process or/and innovation.*

The 2nd factor in technology transfer is time. The time between innovation and commercialization is less for larger companies and is more for smaller companies.

During 1997-98, in India, Bajaj Auto spent Rs 24 crore in R'& D which was less than one percent of its annual sales, so also Reliance Industries' Rs. 39 crore expenditure in R & D was less than 0.3% of its sales turn over. Tata Steels Rs 10 crore spending in R & D (1997-98) was less than 0.2% of its sales.

On all India average, R & D expenditure is less than one percent of its G.N.P. in contrast, UK spend more than 2% Japan 2% and US more than 2.3%.

Companies can no longer assume that competitors will allow them the time needed to recoup their investment. Time to market, therefore, is an important consideration because 60% of successful potential innovation are limited within four years at 65% of the cost of innovation.

In the 1990, Japanese auto manufacture gained incredible competitive advantage over UK manufactures by reducing new products time to market to only three years whereas, US auto companies needed five years.

The third thing is that as new technology comes in, the old technology needs to be abandoned the process of old replaced by new is called technological discontinuity. Such discontinuity occurs when a new technology can not be used simply to enhance the current technology but actually substitutes for that technology to yield better performance. The company's R & D team must determine when to abandon present technology and then to develop or adapt the new technology.

Another important item is that the firm must decide whether to adapt R & D programmed or outsource technology. The make or buy decision can be important to a company R & D although in house R & D has been traditionally an important source of technical knowledge for companies firms can also tap the R & D capabilities of competitors, suppliers and other organizations though contractual agreements such as licensing, R & D agreement and joint ventures.

In case of longer product life cycles, (such as Steel, Aluminum and Cement etc.) a company a more likely to choose its own R & D not only because it gave the firm a ginger lead time before competitor started imitating, but also because it was more profitable in the long run.

In case of shorter life cycle products such as FMCGs or consumer durables, a company may choose to buy technologies that are commonly available but make those that are rare, valuable, hard to imitate, and have no close substitutes.

Lastly, the issue relates to the decision on product innovation or process innovation. In the early stages, product innovation is most important because the product's physical attributes and capabilities affect financial performance considerably.

Later, process innovations such as improved manufacturing facilities, increasing product quality and faster distribution become important in maintaining the products economic returns. German and Japanese companies have been most successful in process innovations.

Technology Assessment Impact Analysis

The impact of technology is discussed below under three heads:-

(a) Technological and social changes
(b) Economic effects of technology
(c) Technology and plant level changes

Law could protect the grief, sacked, demoted socially ostracized victim. In civil society, there is a better protection. Public supported Arun of Pune Municipal Corporation, when his whistle blew on Pune Municipality's unethical practices. Public also supported Khairnar when his whistle blew against the corrupt activities of Mumbai Municipality.

Case studies:

i. Baba sheb Ampte and Medha Patkar, the renowned social activists had successfully organized public mass movements against the construction of the Narmada Dam, which would unsettle thousands of villagers and submerge large areas of land, after it is built to the originally planed height.

ii Ralf Nader was pioneer for consumer movement. He had championed causes for defective vehicles, waste of govt. funds, dumping of pollutants and misuse of pension funds and adulteration by unscrupulous business persons.

He had championed against the cause of non enforcement of pesticide law, suppression of occupational diseases of workers employed in hazardous Asbestos and chemical industries.

Value Crisis In Contemporary Society

A healthy society is built on good values. Indian society is based on democratic principles and secular belief.

The values of a good society in India, took a strong blow during Babri Masjid / Ayodhya and Godhra / Ahmedabad episodes in the early nineties and during the Gujarat incidences when the secular fabric was torn apart.

Many a time religious cover is used to justify some vested fanatical interests.

The waves of violence and reprisals and counter reprisals have caused permanent scars.

Most people experienced the break down of law and order. It was followed by the collapse of social and legal structure and of so called orderly society. This was a society where neighbors had lived for years in a spirit of the religious community to which they belonged. It was a normal meltdown.

The values of the Indian society not only of the rioters and selfish politician but the entire nation needed rethinking.

The community depends upon a common set of values. It is even enshrined in our constitution that we are a secular nation and the right includes religious freedom and right to worship, among others.

When these values drain away, communities exist only superficially with deep under current of hatred and communal prejudices.

Similarly, during the emergency enforcement period by late Prime Minister Mrs. Indira Gandhi in the late seventies, the democratic values were ignored.

Value crisis in society rises, when people see for themselves that businessmen maximize their profits from income tax evasion, smuggling, speculation, custom duty evasion, hoarding and monopoly and adulteration etc.

Values crisis in society arises also when a manufacturer becomes selfish and wants to make more profits and does not want to spend money in treating toxic effluents or toxic gas before they are discharged to surroundings.

The values in society are upheld when people bear the responsibility of fulfilling obligation, following proper procedures, doing the right thing, adhering to moral standards determining ethical values of actions.

Actions are morally right irrespective of their consequences, for secularist it is right to keeping promises, for the religious it is right to obey TEN Commandments, the Fiat or The Quraan, regardless of personal costs or benefits.

The globalization, privatization and liberalization of Indian Economy which started into eh mid nineties, have opened the flood gates of consumerism and the corruption and wrong doings of individuals the growing importance of materialistic values of life has been down playing significantly the other life values like the moral, spiritual and aesthetical.

The selfish and corrupt motives of stock brokers like Harshad Mehta and Ketan Parekh during the last decade have besought miseries and ruined many middle class families.

The selfish individualistic profit motives of the real estate builders have created concrete jungles in towns and cities and have destroyed the aesthetic values of nature.

Further examples of decline in the value system in the individual levels may be given as follows:

1. *The adoption of dubious standards of judgment for the rich and poor by the ethics class and bearcats.*
2. *Not being conscious about one's duty and responsibility the doctors and nurses ar ignoring the interests of patients and teachers are ignoring the students' necessities.*
3. *The elected members of assemblies and parliament hardly look after the welfare of the people who have elected them.*

The values crisis in the academic field is exhibited with the little evidence of virtues like intellectual honesty, humility and objectivity which were earlier considered the useful hallmarks of a truehearted person.

Also, the characters of politicians have been tarnished much by corruption, scams and nexus with anti socials.

Nature of Values

Values have some principles and fundamental enduring beliefs. We need values to become ethical.

Values can be of individual, societal and of corporate.

Values govern behavioral choices. Core values can not be dictated and are difficult to change

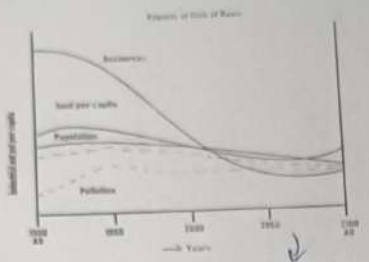
A vegetarian can not be forced to change his eating habits. A philanthropist can not be asked to quantify his time values.

If Mahatma Gandhi practiced ahimsa instead of all odds happening around him, it was his individual core value.

Similarly if a society strongly condones bride burning or suppression of women, it is a core value of the society and the members of the society take pride in stating that they uphold an important core value.

A core value transcends mundane existence and provides the organization with a sense of well being, pride

Reports of Club of Rome



(Any) It pers we should be concerned about!

The 'Standard' world model: Computer based graph produced by the club of Rome. All variables plotted here follow historical values from 1900 to 2000. food, industrial out put and population growth exponentially until the rapidly diminishing resources forces a slow down in industrial growth. Some time after the peak of industrialization both population and pollution (due natural delay in the system) continue to increase.

Population growth is finally halted by a rise in the death rate due to declined food and medical services.

Depletion of non renewable resources, reports of club of Rome; Limits of Growth & sustainable development.

Various thinkers maintain that if we are to preserve enough scarce resources for future generations to maintain their quality of life at satisfactory level, we shall have to scale down our pursuit of economic growth.

The argument against this hypothesis is that future generations will be able to innovate and find advancement in science and able to maintain higher industrial growth with lower level of pollution.

Future generations will be able to maintain better health care measures, invent and use sophistical medicines and will fight dreaded diseases like small POX, AIDS, TB and CANCER etc. thus, they will bring down the death rates and also at the same time through spread of education and higher literacy rates will adopt family planning measure to keep control of birth rates. Thus, population will grow at a controlled rate.

Non renewable or depleting resources are natural resources such as fossil fuel and forest and minerals etc. with advancement of technology and science, people are able to find out new location of coal, petroleum, gas and minerals. Therefore, even though rise in population, more new lo actions are also being sourced out. Also with the help of science and technology, people are able to find substitutes of these resources by harnessing solar energy, wind energy and tidal waves to produce electricity for use at home and for industrial production and for irrigation in agriculture. Hydro electricity and nuclear energy are also non renewable energy sources to some extent.

As per E.F. Schumacher's claim, the industrialized nations would have to convert from growth oriented capital intensive technologies to much more labour intensive technologies in which more people would replace machines.

In the present context Schumacher's claim does not hold good. Because, all developed and developing countries in the world are at present adopting R & D more and more to invent new processes and technologies for maintaining higher growth rates in industrial productions and agricultural output with use of less man power.

Limits to Growth

A country like India has to advance in a number of directions at the same time. At each stage of development the essence of economic and social policy is to establish a combination of goals, supported by specific measures.

For a developing country like India with her larg3 population and manpower resou4rces, extreme dependence on agriculture, low levels of productivity and wide spread regional disparities, the overall economic growth is limited.

Economic growth is defined as an increase in per capita income of a sizeable order that should be the prime object of economic development in a low income country like India where living standards of the vast millions are palpably low.

The process of economic growth is influenced by a large number of economic, social are political factors. Professor Nurkse points "Economic development has much to do with human endowments, Social attitudes, political conditions and historical accidents."

A multitude of factors affect growth process in a country.

Factors affecting growth may be grouped as:

(a) **Economic factors,** (b) **Non economics factors.**

(a) **Economic factors:** Following are the major economic factors determining the process of growth in an economy.

1. Natural Resources
2. Human Resources and Population Growth
3. Capital formation and Capital accumulation
4. Technological Progress
5. Entrepreneurship
6. Investment Criteria
7. Perfecting the Market
8. Capital output ration

Solar Energy...
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view on including values and ethics in engineering.

1. Promotes Responsibility – Engineers must understand the impact of their work on society and the environment.
2. Encourages Safe Practices – Ethics help ensure safety in design, construction, and use of technology.
3. Builds Trust – Ethical engineers gain public trust by acting with honesty and integrity.
4. Supports Fair Decision-Making – It helps engineers make decisions that are just and respectful of human rights.
5. Prepares for Real-World Challenges – Ethics training helps engineers deal with dilemmas and pressures in professional life.

Would you like to add ar ecific examples to these points?

Ask anything

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I think it is a very (correct & imp decision Engineers should;

values and ethics in simple points:

1. Sustainability – Protect nature and resources for the future.
2. Human well-being – Focus on quality of life, not just money.
3. Global justice – Reduce inequality and help poorer nations.
4. Responsibility – Think about future generations.
5. Respect for nature – Humans are part of nature, not above it.
6. Cooperation – Work together globally, not compete.
7. Long-term thinking – Solve problems with lasting solutions.

These ideas support buil a fair and sustainable w

The Appropriate Technology Movement was started by E.F. Schumacher, especially through his book Small is Beautiful (1973).

Key Points:

- Focuses on simple, low-cost, and locally suitable technologies.
- Aims to help people, not replace them—especially in poor or rural areas.
- Encourages small-scale, sustainable, and easy-to-maintain tools.
- Supports self-reliance and local development.
- Example: Solar cookers, hand pumps, or bicycle-powered machines.

It's about using the right technology for the right context, not just the most advanced.

What is Sustainable Development?

Sustainable development means meeting the needs of the present without compromising the ability of future generations to meet their own needs.
It balances economic growth, environmental protection, and social well-being.

Link with Energy Crisis:

- The energy crisis is caused by overuse of non-renewable resources like coal, oil, and gas.
- These resources are limited, and their use leads to pollution and climate change.
- Unsustainable energy use threatens both current and future generations.

- Unsustainable energy use threatens both current and future generations.

Link with Renewable Energy:

- Renewable energy (like solar, wind, hydro, biomass) is clean, infinite, and sustainable.
- Using renewable energy helps reduce:
  - Dependence on fossil fuels,
  - Environmental damage,
  - Greenhouse gas emissions.
- It supports sustainable development by providing energy without harming the planet.

Environmental Ethics – Simple & Brief

Environmental ethics is the branch of philosophy that studies the moral relationship between humans and the environment.

Key Ideas:

1. Nature has value — not just for human use, but in itself.
2. Humans have a responsibility to protect the environment.
3. We must consider the impact of our actions on animals, plants, ecosystems, and future generations.

Types of Environmental Ethics:

- Anthropocentric (human-centered): Nature is valuable only if it benefits humans.
- Biocentric (life-centered): All living beings have moral value.
- Ecocentric (ecosystem-centered): Whole ecosystems and natural processes have rights and value.

Why it matters:

Environmental ethics helps guide sustainable decisions, fight climate change, and promote respect for nature.

Even (Spring) Semester Examination 2022

Paper Code: MS 432; Paper name: Professional Values & Ethics

B Tech Computer Science and Engineering

VIIIth Semester 2022

Full Marks: 80; Time: 3Hrs.

(The figures in the margin indicate full marks.

Candidates are required to give their answers in their own words as far as possible)

GROUP: A (Answer all the questions) **(1 x 10 = 10)**

I. Which of the following philosophical principles in ethics emphasises the consequences of action, rather than following the rules?

(a) Imperative principle (b) Utilitarianism principle

(c) Generalization principle (d) Moral principle

II. A written statement of policies and principles that guides the behaviour of all employees is called:

(a) Code of ethics (b) Word of ethics (c) Ethical dilemma (d) None of the above

III. Competence in professional ethics refers to:

(a) Ability to utilize power effectively (b) Ability to augment the universal human order

(c) Ability to make a profit (d) Both b and c

IV. Many human values seem good or right due to:

(a) Positive feelings (b) Internal happiness (c) Natural acceptance (d) All the above

V. The purpose of value education is to:

(a) Foster universal core values (b) Make the syllabus easy

(c) Develop values in individuals (d) both (a) and (c)

VI. The general and abstract concepts of right and wrong behaviour culled from philosophy, theology, and professional societies are:

(a) Ethics (b) Morals (c) Etiquette (d) Law

VII. A moral theory that seeks to create the best for the most people

(a) Whistleblowing (b) Utilitarianism (c) Morals (d) Rights analysis

VIII. A situation in which an engineer's loyalty and obligations may be compromised because of self-interests or other loyalties and obligations is:

(a) Conflict of interest (b) Conceptual issue (c) Concern of interest (d) Interaction rules

IX. Expected sets of behaviour (etiquette, law, morals, and ethics) between the engineer, other individuals and society as a whole are:

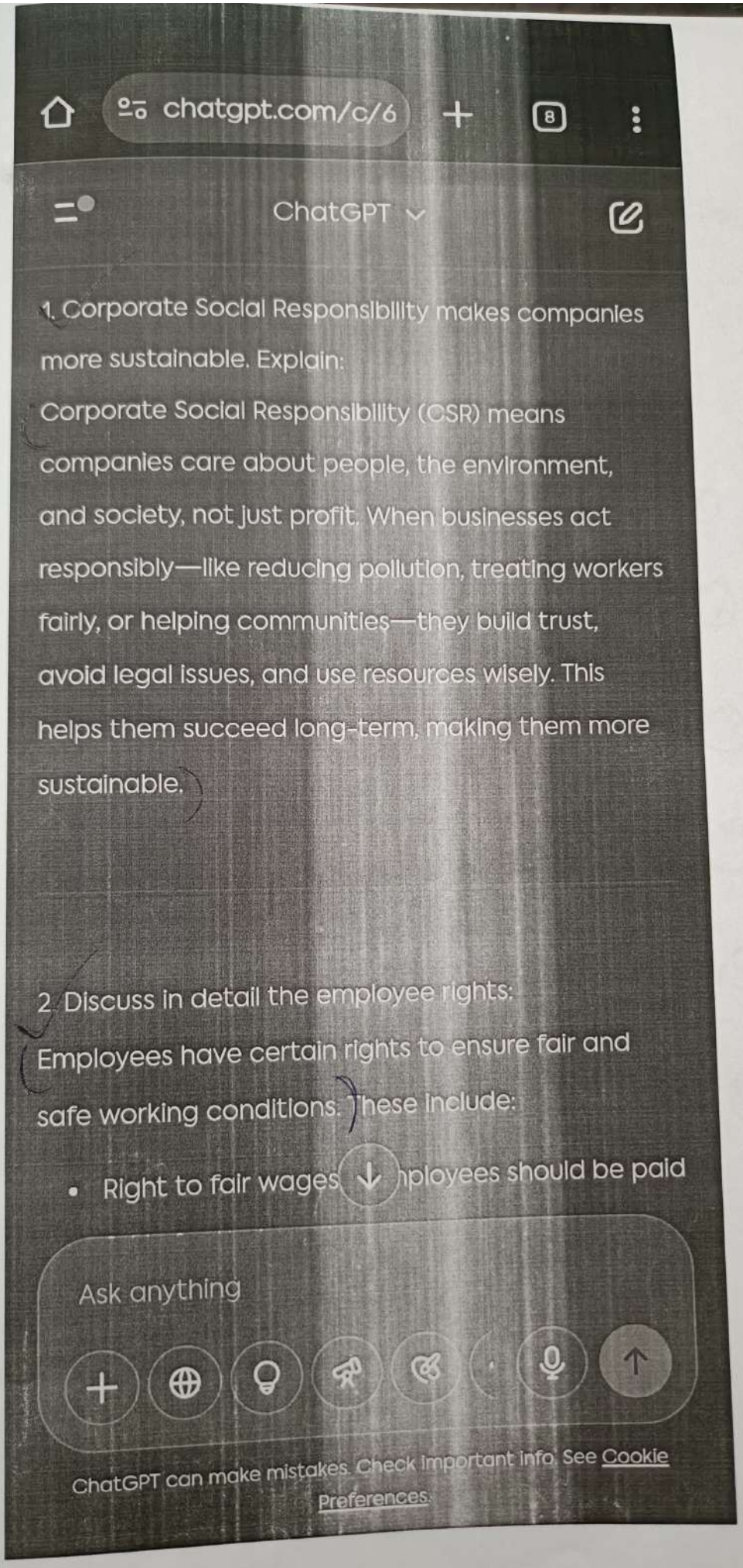
(a) Conceptual issue (b) Application issue (c) Legal rights (d) Interaction rules

X. The accepted standards of right and wrong that are usually applied to personal behaviour are:

(a) Morals (b) Law (c) Etiquette (d) Ethics

GROUP: B (Answer any five questions) **(5 x 5 = 25)**

2. Why is engineering ethics important? (Engineering profession)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1. Corporate Social Responsibility makes companies more sustainable. Explain:
Corporate Social Responsibility (CSR) means companies care about people, the environment, and society, not just profit. When businesses act responsibly—like reducing pollution, treating workers fairly, or helping communities—they build trust, avoid legal issues, and use resources wisely. This helps them succeed long-term, making them more sustainable.
2. Discuss in detail the employee rights:
Employees have certain rights to ensure fair and safe working conditions. These include:
• Right to fair wages
nployees should be paid
Ask anything
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2. Discuss in detail the employee rights:

Employees have certain rights to ensure fair and safe working conditions. These include:

- Right to fair wages – Employees should be paid fairly for their work.
- Right to a safe workplace – Employers must provide a healthy and safe environment.
- Right to privacy – Personal information should be protected.
- Right to equal opportunity – No discrimination based on gender, race, religion, etc.
- Right to rest and leave – Employees should get breaks, holidays, and leave.
- Right to join unions – Workers can form or join groups to protect their interests.

Ask anything

- Right to privacy – Personal information should be protected.
- Right to equal opportunity – No discrimination based on gender, race, religion, etc.
- Right to rest and leave – Employees should get breaks, holidays, and leave.
- Right to join unions – Workers can form or join groups to protect their interests.
- Right to be heard – Employees should be able to voice concerns or complaints.

3. What are the different types of problems in 'computer ethics'?

Computer ethics deals with the moral issues of using computers. Common pr ns include:

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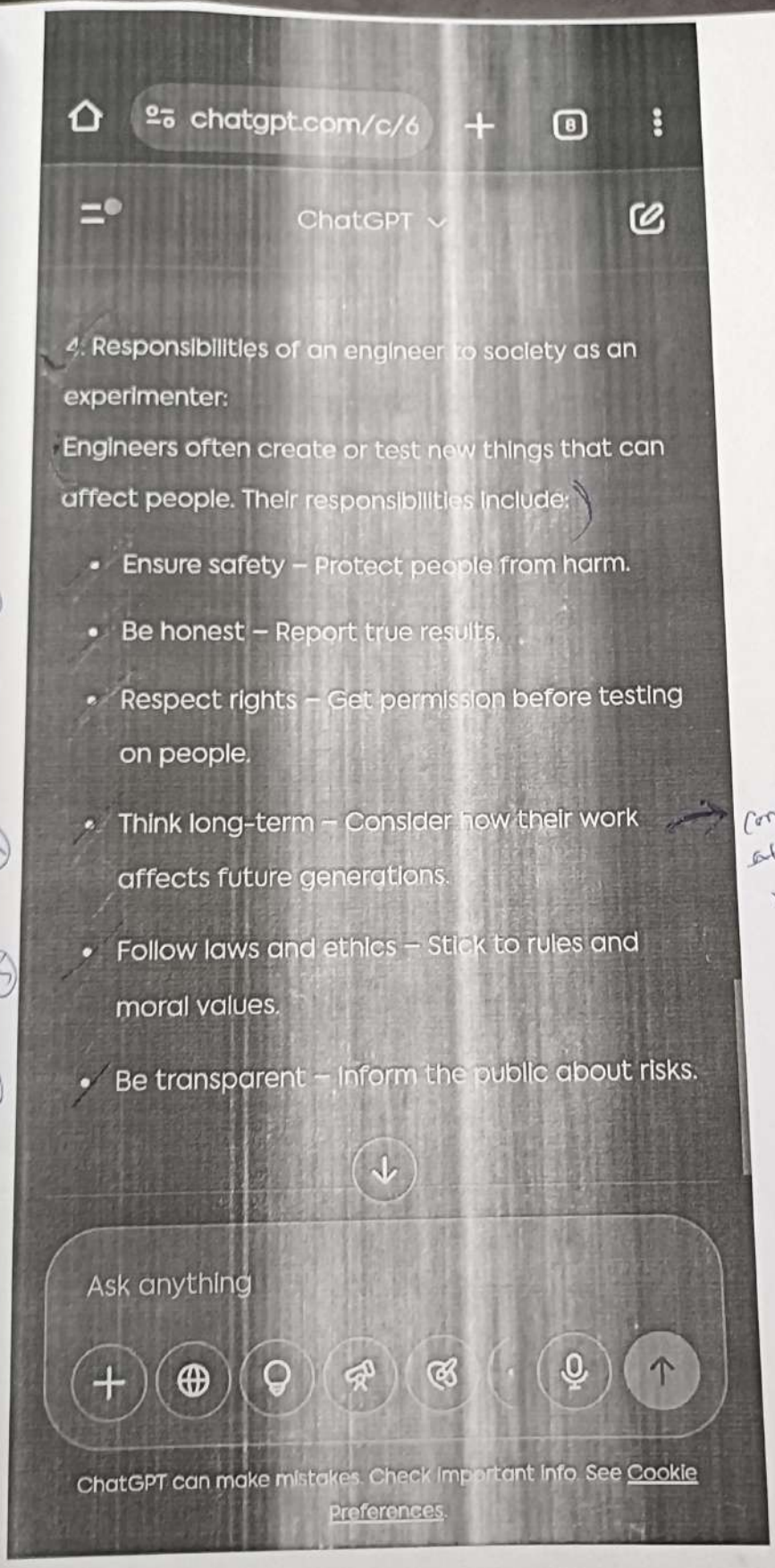
3. What are the different types of problems in 'computer ethics'?

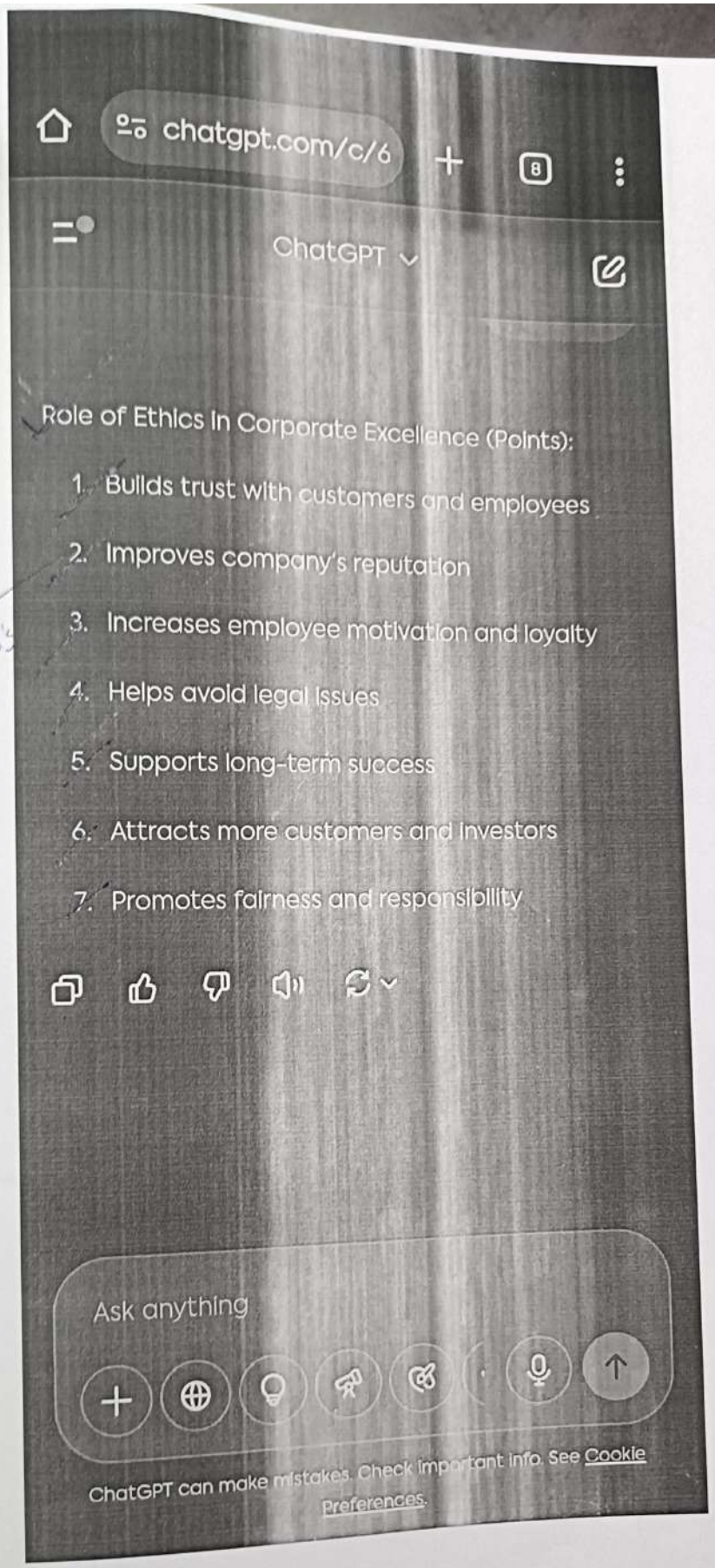
Computer ethics deals with the moral issues of using computers. Common problems include:

- Privacy – Misuse of personal data.
- Hacking – Unauthorized access to systems.
- Piracy – Copying software or media without permission.
- Digital divide – Unequal access to technology.
- Cyberbullying – Online harassment.
- Plagiarism – Copying content without credit.
- AI misuse – Unfair or harmful use of artificial intelligence.

Ask anything



Considers long-term effects Sustainability, not just short-term gains.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Role of Ethics in Corporate Excellence (Points):
1. Builds trust with customers and employees
2. Improves company's reputation
3. Increases employee motivation and loyalty
4. Helps avoid legal issues
5. Supports long-term success
6. Attracts more customers and investors
7. Promotes fairness and responsibility
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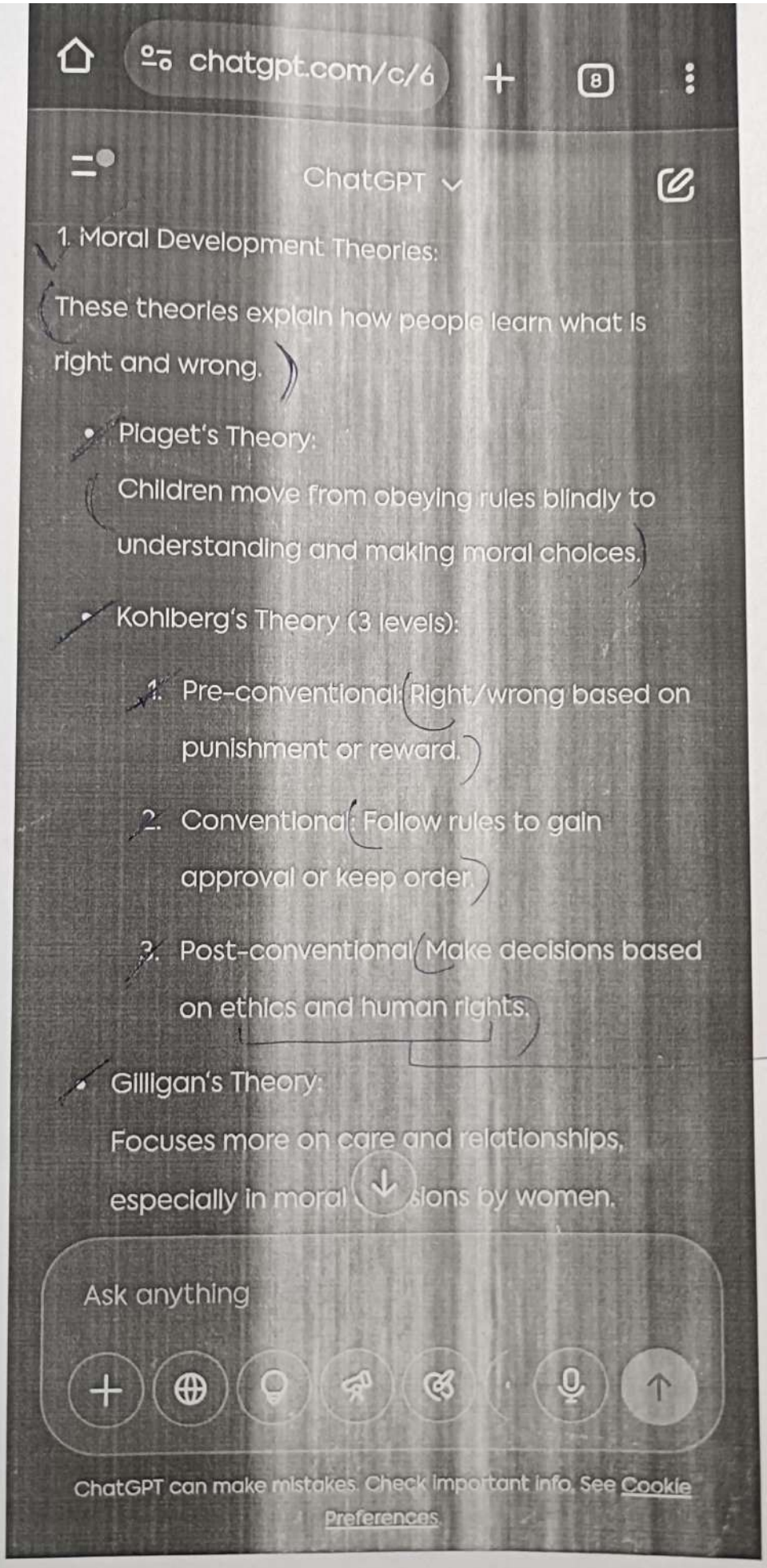
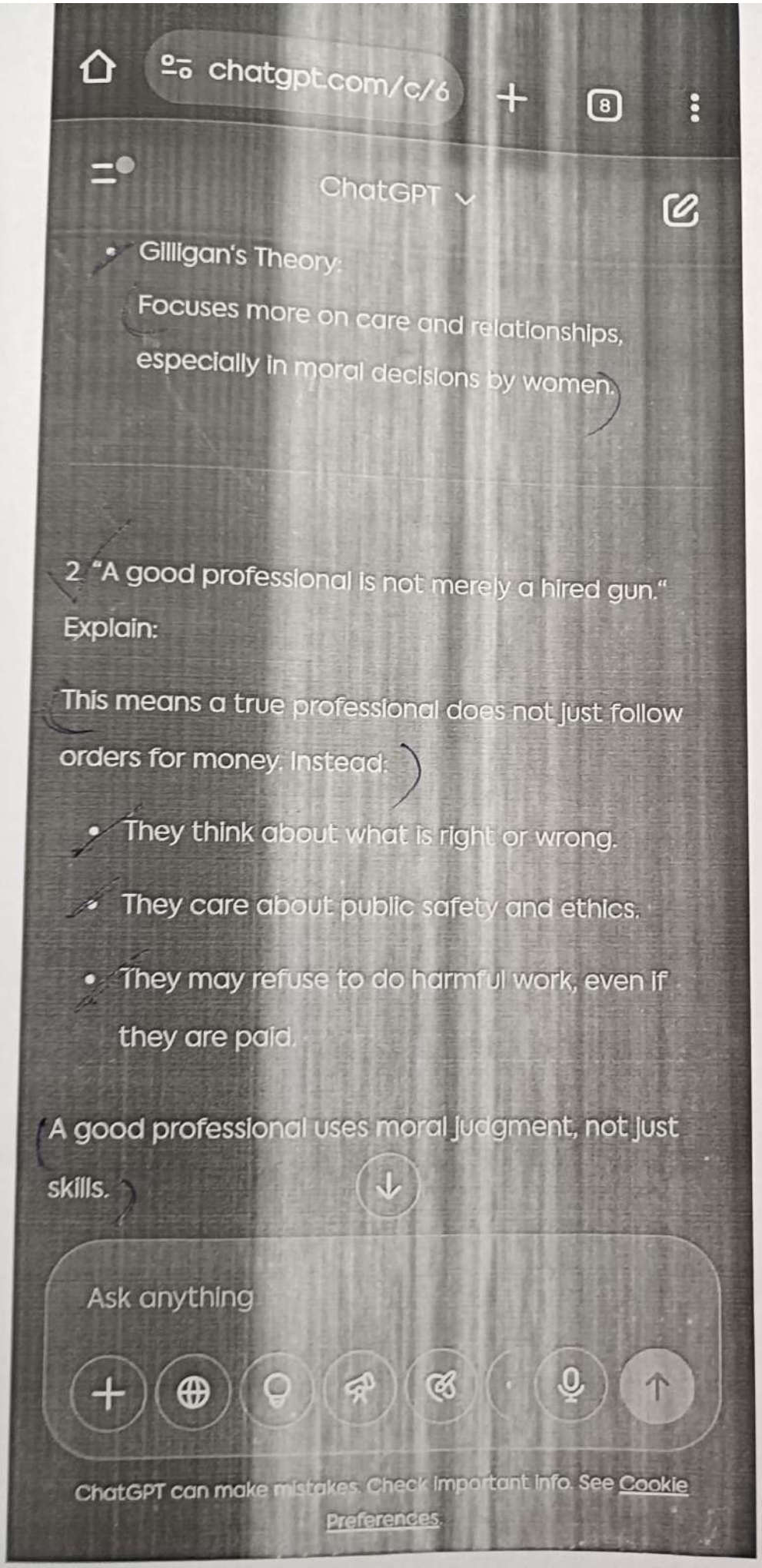


→ what is right & what is wrong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• Gilligan's Theory:
Focuses more on care and relationships, especially in moral decisions by women.
2 "A good professional is not merely a hired gun."
Explain:
This means a true professional does not just follow orders for money. Instead:
• They think about what is right or wrong.
• They care about public safety and ethics.
• They may refuse to do harmful work, even if they are paid.
A good professional uses moral judgment, not just skills.
Ask anything
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3. Ethical Theories (in detail but simple):

These are rules or ideas to help decide what is right or wrong.

- Utilitarianism:

  Do what gives the most happiness to the most people.

  (Example: Choose the option that benefits many.)

- Deontology (Duty Ethics):

  Follow rules and duties, no matter the result.

  (Example: Always tell the truth.)

- Virtue Ethics:

  Be a good person with good character (honesty, kindness, etc.).

  (Example: Ask, "What would an honest person do?")

Ask anything

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- Virtue Ethics:
  Be a good person with good character (honesty, kindness, etc.).
  (Example: Ask, "What would an honest person do?")
- Rights Theory:
  Respect everyone's basic rights (like life, freedom, privacy).
  (Example: Don't harm others, even for a good cause.)
- Justice Theory:
  Be fair and give people what they deserve.
  (Example: Equal pay for equal work.)

Let me know if you want ersion for slides or notes!

Ask anything

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1. What do you mean by Code of Ethics?

A Code of Ethics is a set of rules that guide how professionals should behave honestly and responsibly in their work.

Why is it important?

- Helps professionals know what is right or wrong
- Builds trust with clients and society
- Promotes fairness and respect
- Maintains a good reputation for the profession
- Prevents misuse of power or knowledge

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Limitations of Code of Ethics:

- It may be too general or unclear
- Hard to enforce or punish violations
- Some people may ignore it for profit
- May conflict with personal values or company rules

2. What do you mean by Intellectual Property Rights (IPR)?

IPR are legal rights that protect creations of the mind like inventions, music, books, logos, and designs. They give the creator control over the use of their work.

Ask anything

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Types of IPR (Explained Simply):

1. Copyright:
   Protects books, music, films, software, etc.
   (Example: A song cannot be copied without permission.)
2. Patent:
   Protects new inventions or technologies.
   (Example: A new machine or drug.)
3. Trademark:
   Protects brand names, logos, slogans.
   (Example: Nike logo or Coca-Cola name.)
4. Trade Secrets:
   Protects secret business information.
   (Example: Coca-Cola's recipe.)
5. Industrial Design:
   Protects the visual design of products.

Ask anything

2. Patent:

   Protects new inventions or technologies.

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   Protects brand names, logos, slogans.

   (Example: Nike logo or Coca-Cola name.)

4. Trade Secrets:

   Protects secret business information.

   (Example: Coca-Cola's recipe.)

5. Industrial Design:

   Protects the visual design of products.

   (Example: The shape of a fancy bottle.)

6. Geographical Indication (GI):

   Protects products made in a specific place.

   (Example: Darjeeling tea, Basmati rice.)