GE2025- PROFESSIONAL ETHICS IN ENGINEERING
UNIT I – ENGINEERING ETHICS

1. **Define Ethics.**
   - ✓ Study of right or wrong.
   - ✓ Good and evil.
   - ✓ Obligations & rights.
   - ✓ Justice.
   - ✓ Social & Political deals.

2. **Define Engineering Ethics.**
   - ✓ Study of the moral issues and decisions confronting individuals and organizations engaged in engineering / profession.
   - ✓ Study of related questions about the moral ideals, character, policies and relationships of people and corporations involved in technological activity.
   - ✓ Moral standards / values and system of morals.

3. **What is the need to study Ethics?**
   - ✓ To responsibly confront moral issues raised by technological activity.
   - ✓ To recognize and resolve moral dilemma.
   - ✓ To achieve moral autonomy.

4. **Differentiate Moral and Ethics.**

   MORAL:
   - ✓ Refers only to personal behavior.
   - ✓ Refers to any aspect of human action.
   - ✓ Social conventions about right or wrong conduct.

   ETHICS:
   - ✓ Involves defining, analyzing, evaluating and resolving moral problems and developing moral criteria to guide human behavior.
   - ✓ Critical reflection on what one does and why one does it.
   - ✓ Refers only to professional behavior.

5. **What is the method used to solve an Ethical problem?**
   - ✓ Recognizing a problem or its need.
   - ✓ Gathering information and defining the problem to be solved or goal to be achieved.
   - ✓ Generating alternative solutions or methods to achieve the goal.
   - ✓ Evaluate benefits and costs of alternate solutions.
   - ✓ Decision making & optimization.
   - ✓ Implementing the best solution.

6. **What are the Senses of Engineering Ethics?**
   - ✓ An activity and area of inquiry.
   - ✓ Ethical problems, issues and controversies.
   - ✓ Particular set of beliefs, attitudes and habits.
   - ✓ Morally correct.
   - ✓

7. Differentiate Micro-ethics and Macro-ethics.

Micro-ethics : Deals about some typical and everyday problems which play an important role in the field of engineering and in the profession of an engineer.

Macro-ethics : Deals with all the societal problems which are unknown and suddenly burst out on a regional or national level.

8. What are the three types of Inquiry?

- ✓ Normative Inquiry – Based on values.
- ✓ Conceptual Inquiry – Based on meaning.
- ✓ Factual Inquiry – Based in facts.

9. What are the sorts of complexity and murkiness that may be involved in moral situations?

- ✓ Vagueness
- ✓ Conflicting reasons
- ✓ Disagreement

10. What are the steps in confronting Moral Dilemmas?

- ✓ Identify the relevant moral factors and reasons.
- ✓ Gather all available facts that are pertinent to the moral factors involved.
- ✓ Rank the moral considerations in order of importance as they apply to the situation.
- ✓ Consider alternative courses of actions as ways of resolving dilemma, tracing the full implications of each.
- ✓ Get suggestions and alternative perspectives on the dilemma.
- ✓ By weighing all the relevant moral factors and reasons in light of the facts, produce a reasoned judgment.

11. Define Moral Autonomy.

- ✓ Self-determining
- ✓ Independent
- ✓ Personal Involvement
- ✓ Exercised based on the moral concern for other people and recognition of good moral reasons

12. Give the importance of Lawrence Kohlberg's and Carol Gilligan's theory.

- ✓ Kohlberg gives greater emphasis to recognizing rights and abstract universal rules.
- ✓ Gilligan stresses the importance of maintaining personal relationships based on mutual caring.

13. Give the need for Authority.

Authority provides the framework in which learning can take place.

14. What are the criteria required for a Profession?

- ✓ Knowledge
- ✓ Organization
- ✓ Public Good

15. Give the general criteria to become a Professional engineer.

- ✓ Attaining standards of achievement in education, job performance or creativity in engineering that distinguish engineers from engineering technicians and technologists.
- ✓ Accepting as part of their professional obligations as least the most basic moral responsibilities to the public as well as to their employers, clients, colleagues and subordinates.

16. Define Integrity.

Integrity is the bridge between responsibility in private and professional life.

17. Define Compromise.

In a negative sense it means to undetermined integrity by violating one's fundamental moral principles.

In a positive sense, however, it means to settle differences by mutual concessions or to reconcile conflicts through adjustments in attitude and conduct.

18. Give the two aspects of Honesty.

- ✓ Truthfulness – meeting responsibilities concerning truth-telling.
- ✓ Trustworthiness – Meeting responsibilities concerning trust.

19. Differentiate Self-respect and Self-esteem.

Self-respect: It is a moral concept; refers to the virtue properly valuing oneself.

Self-esteem: It is a psychological concept; means having a positive attitude toward oneself, even if the attitude is excessive or otherwise unwarranted.

20. What are the two forms of Self-respect?

- ✓ Recognition self-respect
- ✓ Appraisal self-respect

21. What are the senses of Responsibility?

- ✓ a virtue
- ✓ obligations
- ✓ general moral capacities of people
- ✓ liabilities and accountability for actions
- ✓ blameworthiness or praiseworthiness

22. When will you tell an Act as an involuntary one?

- ✓ Act done in ignorance
- ✓ Act performed under compulsion

23. What are the types of Theories about Morality?

- ✓ Virtue ethics – Virtues and vices
- ✓ Utilitarianism – Most good for the most people
- ✓ Duty ethics – Duties to respect people
- ✓ Rights ethics – Human rights

24. Differentiate Hypothetical imperatives and Moral imperatives.

Hypothetical imperatives are based on some conditions whereas Moral imperatives wont based on some condition.

25. State Rawl's principles.

- ✓ Each person is entitled to the most extensive amount of liberty compatible with an equal amount for others.
- ✓ Differences in social power and economic benefits are justified only when they are likely to benefit everyone, including members of the most disadvantaged groups.

26. Give the various tests required to evaluate the Ethical Theories.

- ✓ Theory must be clear, and formulated with concepts that are coherent and applicable.
- ✓ It must be internally consistent in that none of its tenets contradicts any other.
- ✓ Neither the theory nor its defense can rely upon false information.
- ✓ It must be sufficiently comprehensive to provide guidance in specific situations of interests to us.
- ✓ It must be compatible with our most carefully considered moral convictions about concrete situations.

27. Give the drawbacks of Utilitarianism.

- ✓ Sometimes what is best for the community as a whole is bad for certain individuals in the community.
- ✓ It is often impossible to know in advance which decision will lead to the most good.

28. Give the drawback of Duty Ethics.

Duty ethics does not always lead to a solution which maximizes the public good.

29. Give the drawbacks of Rights Ethics.

- ✓ How do we prioritize the rights of different individuals?
- ✓ It often promotes the rights of individuals at the expense of large groups / society.

30. Differentiate Ethical Relativism and Ethical Egoism.

Ethical egoism – the view that right action consist in producing one's own good.
Ethical relativism – the view that right action is merely what the law and customs of one's society require.

31. Define Ethical Pluralism.

Ethical pluralism is the view that there may be alternative moral perspectives that are reasonable, but no one of which must be accepted completely by all rational and morally concerned persons.

32. Define Religion.

A religion is any set of articles of faith together with the observances, attitudes, obligations and feelings tied up therewith, which, in so far as it is influential in a person, tends to perform two functions, one social and the other personal.

33. Give the uses of Ethical Theories.

- ✓ In understanding moral dilemmas
- ✓ Justifying professional obligations and ideals
- ✓ Relating ordinary and professional morality

UNIT – II- ENGINEERING AS SOCIAL EXPERIMENTATION

1. **What are the conditions required to define a valid consent?**
   - ✓ The consent was given voluntarily.
   - ✓ The consent was based on the information that rational person would want, together with any other information requested, presented to them in understandable form.
   - ✓ The consenter was competent to process the information and make rational decisions.

2. **What are the two main elements which are included to understand informed consent?**

   Informed Consent is understood as including two main elements:

   ✓ Knowledge [Subjects should be given not only the information they request, but all the information needed to make a reasonable decision].

   ✓ Voluntariness [Subjects must enter into the experiment without being subjected to force, fraud, or deception].

3. **What are the general features of morally responsible engineers?**
   - ✓ Conscientiousness.
   - ✓ Comprehensive perspective.
   - ✓ Autonomy.
   - ✓ Accountability.

4. **What is the purpose of various types of standards?**
   - ✓ Accuracy in measurement, interchangeability, ease of handling.
   - ✓ Prevention of injury, death and loss of income or property.
   - ✓ Fair value of price.
   - ✓ Competence in carrying out tasks.
   - ✓ Sound design, ease of communications.
   - ✓ Freedom from interference.

5. **Define Code.**

   Code is a set of standards and laws.

6. **Enumerate the roles of codes.**
   - ✓ Inspiration and Guidance
   - ✓ Support
   - ✓ Deterrence and Discipline
   - ✓ Education and Mutual Understanding
   - ✓ Contributing to the Profession's Public Image
   - ✓ Protecting the Status Quo
   - ✓ Promoting Business Interests

7. **Give the limitations of codes.**
   - ✓ Codes are restricted to general and vague wording.
   - ✓ Codes can't give a solution or method for solving the internal conflicts.
   - ✓ Codes cannot serve as the final moral authority for professional conduct.
   - ✓ Codes can be reproduced in a very rapid manner.

8. What are the problems with the law in engineering?

- ✓ Minimal compliance
- ✓ Many laws are without enforceable sanctions.

9. What is the need to view engineering projects as experiments?

- ✓ Any project is carried out in partial ignorance.
- ✓ The final outcomes of engineering projects, like those of experiments, are generally uncertain.
- ✓ Effective engineering relies upon knowledge gained about products before and after they leave the factory – knowledge needed for improving current products and creating better ones.

10. Differentiate scientific experiments and engineering projects.

Scientific experiments are conducted to gain new knowledge, while "engineering projects are experiments that are not necessarily designed to produce very much knowledge".

11. What are the uncertainties occur in the model designs?

- ✓ Model used for the design calculations.
- ✓ Exact characteristics of the materials purchased.
- ✓ Constancies of materials used for processing and fabrication.
- ✓ Nature of the pressure, the finished product will encounter.

UNIT – III- ENGINEER'S RESPONSIBILITY FOR SAFETY

1. Define Risk.

A risk is the potential that something unwanted and harmful may occur.
Risk = Probability X Consequences.

2. Define a Disaster.

A DISASTER = A seriously disruptive event + A state of unprepared ness.

3. Give the criteria which helps to ensure a safety design.

- ✓ The minimum requirement is that a design must comply with the applicable laws.
- ✓ An acceptable design must meet the standard of "accepted engineering practice."
- ✓ Alternative designs that are potentially safer must be explored.
- ✓ Engineer must attempt to foresee potential misuses of the product by the consumer and must design to avoid these problems.
- ✓ Once the product is designed, both the prototypes and finished devices must be rigorously tested.

4. What are the factors for safety and risk?

- ✓ Voluntary and Involuntary risk
- ✓ Short-term and Long-term risk
- ✓ Expected probability
- ✓ Reversible effects
- ✓ Threshold levels to risk
- ✓ Delayed or Immediate risk etc

5. What are the drawbacks in the definition of Lawrence?

- ✓ Underestimation of risks
- ✓ Overestimation of risks
- ✓ No estimation of risks

6. Give the categories of Risk.

- ✓ Low consequence, Low probability (which can be ignored)
- ✓ Low consequence, High probability
- ✓ High consequence, Low probability
- ✓ High consequence, High probability

7. What are the factors that affect Risk Acceptability?

- ✓ Voluntarism and control
- ✓ Effect of information on risk assessment
- ✓ Job related pressures
- ✓ Magnitude and proximity of the people facing risk

8. What is the knowledge required to assess the risk?

- ✓ Data in design
- ✓ Uncertainties in design
- ✓ Testing for safety
- ✓ Analytical testing
- ✓ Risk-benefit analysis

9. What are the analytical methods?

- ✓ Scenario analysis
- ✓ Failure modes & effect analysis
- ✓ Fault tree analysis
- ✓ Event tree analysis etc.

10. What are the three conditions referred as safe exit?

- ✓ Assure when a product fails it will fail safely.
- ✓ Assure that the product can be abandoned safely.
- ✓ Assure that the user can safely escape the product.

11. How will an engineer assess the safety?

- ✓ The risks connected to a project or product must be identified.
- ✓ The purposes of the project or product must be identified and ranked in importance.
- ✓ Costs of reducing risks must be estimated.
- ✓ The costs must be weighed against both organizational goals and degrees of acceptability of risks to clients and the public.
- ✓ The project or product must be tested and then either carried out or manufactured.

12. What are the reasons for Risk-Benefit Analysis?

- ✓ Risk-benefit analysis is concerned with the advisability of undertaking a project.
- ✓ It helps in deciding which design has greater advantages.
- ✓ It assists the engineers to identify a particular design scores higher with that of the another one.

13. Are the engineers responsible to educate the public for safe operation of the equipment? How?

Yes, as per the engineers are concerned with they should have their duty as to protect for the safety and well being of the general public. Analyzing the risk and safety aspects of their designs can do this.

14. Define Safety.

In the definition stated by William W. Lawrence safety is defined, as a thing is safe if its risks are acceptable. A thing is safe with respect to a given person or group, at a given time, if its risk is fully known, if those risks would be judged acceptable, in light of settled value principles. In the view of objective, safety is a matter of how people would find risks acceptable or unacceptable.

15. What is the definition of risks?

A risk is the potential that something unwanted and harmful may occur. Risk is the possibility of suffering harm or loss. It is also defined as the probability of a specified level of hazardous consequences, being realized. Hence Risk (R) is the product of Probability (P) and consequence(C) (i.e)

$R = P * C$

16. What are the safety measures an engineer must know before assessing a risk of any product?

The factors are:

- ✓ Does the engineer have the right data?
- ✓ Is he satisfied with the present design?
- ✓ How does he test the safety of a product?
- ✓ How does he measure and weigh the risks with benefits for a product.

17. What is the use of knowledge of risk acceptance to engineers?

Though past experience and historical data give better information about safety of products designing there are still inadequate. The reasons are

- ✓ The information is not freely shared among industries
- ✓ There also new applications of old technologies that provides available data, which are less useful.
- ✓ So, in order to access the risk of a product, the engineers must share their knowledge and information with others in a free manner.

18. Define Acceptability of risks.

A risk is acceptable when those affected are generally no longer apprehensive about it. Doubtfulness depends mainly on how the people take the risk or how people perceive it.

19. What is meant by Disaster? Give an example.

A disaster does not take place until a seriously disruptive event coincides with a state of insufficient preparation. Example: The Titanic collision with an iceberg constituted an emergency, which turned into a disaster because there were too few lifeboats.

20. What are the positive uncertainties in determining risks?

There are three positive uncertainties. They are:

- ✓ Purpose of designing
- ✓ Application of the product
- ✓ Materials and the skill used for producing the product.

21. What is the use of Risk-Analysis? What are the three factors involved here?

Risk Analysis is used for the assessment of the hazardous associated with an industrial or commercial activity. It involves identifying the causes of unwanted hazardous events and estimating the consequences and likelihood of these events. Three factors involved in this are:

- ✓ Hazard Identification
- ✓ Consequences analysis
- ✓ Probability estimation.

22. Define Risk-Benefit Analysis.

Risk benefit analysis is a method that helps the engineers to analyze the risk in a project and to determine whether a project should be implemented or not. In risk benefit analysis, the risks and benefits of a product are allotted to money amounts, and the most benefit able ratio between risks and benefits is calculated.

23. Explain the two types of Risk.

i. Personal Risk:

An individual, who is given sufficient information, will be in a position to decide whether to take part in a risky activity or not. They are more ready to take on voluntary risks than involuntary risks.

ii. Public Risks:

Risks and benefits to the public are more easily determined than to individuals, as larger number of people is taken into account. Involuntary risks are found here.

24. What does Strict Liability mean?

Strict liability means if the sold product is defective; the manufacturer concerned is liable for any harm that results to users. Negligible is not at all an issue based.

25. Give the reasons for the Three Mile Island disaster?

- ✓ Inadequate training to the operators.
- ✓ Use of B & W reactors.

26. What is the main barrier to educational attempts?

An important barrier to educational attempt is that people belief change slow and are extraordinarily resistant to new information.

27. What happens to the products that are not safe?

Products that are not safe incur secondary costs to the manufacturer beyond the primary costs that must also be taken into account costs associated with warranty expenses, loss of customer will and even loss of customers and so.

28. What does Open-mindedness refer to?

Open-mindedness refers once again not allowing a preoccupation with rules to prevent close examination of safety problems that may not be covered by rules.

29. What was the problem in the Chernobyl reactor?

The problem was that,

The output was maintained to satisfy an unexpected demand.

The control device was not properly reprogrammed to maintain power at the required level.

Instead of leaving fifteen control rods as required, the operators raised almost all control rods because at the low power level, the fuel had become poisoned.

UNIT – IV- RESPONSIBILITIES AND RIGHTS

1. Define Collegiality.

Collegiality is a kind of connectedness grounded in respect for professional expertise and in a commitment to the goals and values of the profession and collegiality includes a disposition to support and cooperate with one's colleagues.

2. What are the central elements of collegiality?

- ✓ Respect
- ✓ Commitment
- ✓ Connectedness
- ✓ Cooperation

3. What are the two senses of Loyalty?

i. Agency Loyalty – Acting to fulfill one's contractual duties to an employer. It's a matter of actions, whatever its motives.

ii. Identification Loyalty – Has as much as to do with attitudes, emotions, and a sense of personal identity as it does with actions.

4. What is the relationship between the Loyalty to the company and Professional responsibility to the public?

- ✓ Acting on professional commitments to the public can be a more effective way to serve a company than a mere willingness to follow company orders.
- ✓ Loyalty to companies or their current owners should not be equated with merely obeying one's immediate supervisor.
- ✓ An engineer might have professional obligations to both an employer and to the public that reinforce rather than contradict each other.

5. When may an Identification Loyalty be said as obligatory?

- ✓ Employees must see some of their own important goals as met by and through a group in which they participate.
- ✓ Employees must be treated fairly, each receiving his or her share of benefits and burdens.

6. Define Institutional Authority.

Institutional Authority is acquired, exercised and defined within organizations. It may be defined as the institutional right given to a person to exercise power based on the resources of the institution.

7. Define Expert Authority.

Expert authority is the possession of special knowledge, skill or competence to perform task or give sound advice.

8. What is the basic moral task of salaried engineers?

The basic moral task of salaried engineers is to be aware of their obligations to obey employers on one hand and to protect and serve the public and clients of the other.

9. What are the guidelines to reach an agreement?

- ✓ Attack problem and not people.
- ✓ Build trust.
- ✓ Start with a discussion and analysis of interests, concerns, needs. It begin with interests, not positions or solutions.
- ✓ Listen.
- ✓ Brainstorm; suggesting an idea does not mean one aggress with it. Develop multiple options.
- ✓ Use objective criteria whenever possible. Agree on how something will be measured.

10. Define confidential information.

Confidential information is information deemed desirable to keep secret.

11. What are the criteria for identifying that information is "labeled" confidential at the workplace?

- ✓ Engineers shall treat information coming to them in the course of their as confidential.
- ✓ Identify any information which if it became known would cause harm to the corporation or client.
- ✓ Confidential information is any information that the employer or client would like to have kept secret in order to compete effectively against business rivals.

12. What are the terms associated with Confidentiality?

- ✓ Privileged Information
- ✓ Proprietary Information
- ✓ Patents
- ✓ Trade secrets

13. How will you justify the obligation of confidentiality?

The obligation of confidentiality can be justified at two levels.

FIRST Level: Moral Considerations

Respect for autonomy
Respect for promises
Regard for public well-being

SECOND Level: Major Ethical Theories

Rights Ethicists
Duty Ethicists
Rule-utilitarians
Act-utilitarians

14. Define Conflicts of Interest.

Conflict of interests is a situation in which two or more interests are not simultaneously realizable. It is the disagreement between public obligation and self-interest of an official.

15. Why does a conflict of interests arise?

- ✓ Financial Investments
- ✓ Insider Trading
- ✓ Bribe
- ✓ Gifts
- ✓ Kickbacks

16. What is a Bribe?

A Bribe is a substantial amount of money or goods offered beyond a stated business contract with the aim of winning an advantage in gaining or keeping the contract.

17. What is a Gift?

Gifts are not bribes as long as they are small gratuities offered in the normal conduct of business.

18. What is called Kickbacks?

Prearranged payments made by contractors to companies or their representatives in exchange for contracts actually granted are called kickbacks.

19. What are the types of Conflicts of interest?

- ✓ Actual conflict of interest
- ✓ Potential conflict of interest
- ✓ Apparent conflict of interest

20. What are the forms of Conflicts of interest?

- ✓ Interest in other companies
- ✓ Moonlighting
- ✓ Insider information

21. How will you solve the Conflict problems?

- ✓ Finding the creative middle way.
- ✓ Employing Lower-level considerations.
- ✓ Making the hard choice.

22. What is called 'White-collar crime'?

Occupational crimes are illegal acts made possible through one's lawful employment. It is the secret violation of laws regulating work activities. When committed by office workers of professionals, occupational crime is called 'white-collar crime'.

23. What are the essential elements of IPR?

- ✓ Patents
- ✓ Copyrights
- ✓ Trademarks
- ✓ Trade secrets

24. What are the requirements of Patents?

- ✓ Problem of invention
- ✓ Current report of the problems to address
- ✓ Solution or procedure to the problem
- ✓ Extent of novelty or inventive
- ✓ Application or uses
- ✓ Details of the inventor
- ✓ Resources of funds

25. What are the types of Patents?

- ✓ Utility patents
- ✓ Design patents
- ✓ Plant patents

26. What is the need for Protection to IPR?

- ✓ Prevent plagiarism.
- ✓ Prevent others using it.
- ✓ Prevent using it for financial gain.
- ✓ Fulfill as an obligation to funding agency.
- ✓ Support income generation strategy.

27. What is the Importance of IPR?

- ✓ Give the inventors exclusive rights of dealing.
- ✓ Permit avoiding of competitors and raise entry barriers.
- ✓ Permit entry to a technical market.
- ✓ Generate steady income by issuing license.

28. What is a Trade secret?

A trade secret is a secret formula, pattern, or device that is used in a business and provides a commercial advantage.

29. Define Whistle Blowing.

Whistle-blowing is alerting relevant persons to some moral or legal corruption, where "relevant persons" are those in a position to act in response, if only by registering protest. i.e. the employee disclosure of an employer's illegal or illegitimate practices to persons or organizations that may be able to take corrective actions. The conditions to be met for whistle-blowing are

- ✓ Need
- ✓ Proximity
- ✓ Capability
- ✓ Last resort

30. What are the main features of Whistle Blowing?

- ✓ Act of disclosure
- ✓ Topic
- ✓ Agent
- ✓ Recipient

31. Differentiate External Whistle Blowing and Internal Whistle Blowing.

External Whistle Blowing – Information is passed outside the organization.

Internal Whistle Blowing – Information is conveyed to someone within the organization.

32. Differentiate Open Whistle Blowing and Anonymous Whistle Blowing.

Open Whistle Blowing – Individuals openly reveal their identity as they convey the information.

Anonymous Whistle Blowing – Involves concealing one's identity.

33. When is Whistle Blowing morally permitted and morally obligated?

Whistle blowing is morally permitted when

- ✓ If the harm that will be done by the product to the public is serious and considerable.
- ✓ If they make their concerns known to their superiors.
- ✓ If getting no satisfaction from their immediate supervisors, they exhaust the channels available within the corporation, including going to the board of directors.
- ✓ Whistle is morally obligated when
- ✓ He or she must have documented evidence that would convince a reasonable, impartial observer that his [or her] view of the situation is correct and the company policy wrong.
- ✓ There must be strong evidence that making the information public will in fact prevent the threatened serious harm.

34. What are the two general ways to apply ethical theories to justify the basic right of professional conscience?

- ✓ Proceed piecemeal by reiterating the justifications given for the specific professional duties.
- ✓ Justify the right of professional conscience, which involves grounding it more directly in the ethical theories.

35. Define Employee Rights.

Employee rights are rights, moral or legal, that involve the status of being an employee. They include some professional rights that apply to the employer-employee relationship.

36. Define Sexual Harassment.

Sexual Harassment means continuous annoying and attacks on men or women on the basis of sexual considerations. It also covers the harassment by female superiors on the male employees and sexual harassment of employees by superiors of the same sex.

It includes physical and psychological attacks, coercion, misuse of authority and a variety of undesirable and indecent actions.

37. Define Discrimination.

Discrimination means morally unjustified treatment of people on arbitrary or irrelevant grounds.

38. What are the general procedures for implementing the right to due process?

- ✓ Written explanations should be established that is available to all employees who believe their rights have been violated.
- ✓ An appeals procedure should be established that is available to all employees who believe their rights have been violated.

39. Differentiate Human Rights and Professional Rights.

Human Rights – Possessed by virtue of being people or moral agents.

Professional Rights – Possessed by virtue of being professional having special moral responsibilities.

40. Differentiate Weak Preferential Treatment and Strong Preferential Treatment.

Weak preferential treatment involves giving an advantage to members of traditionally discriminated-against groups over equally qualified applicants who are members of other groups.

Strong preferential treatment involves giving preference to minority applicants or women over better qualified applicants from other groups.

UNIT – V- GLOBAL ISSUES

1. What are the three versions of Relativism?

- ✓ Ethical Relativism
- ✓ Descriptive Relativism
- ✓ Moral Relativism

2. What are the moral dimensions of an Engineer manager?

- ✓ Information rights and obligation
- ✓ Property rights
- ✓ Accountability and control
- ✓ System quality
- ✓ Quality of life

3. Give any ten International rights suggested by Donaldson?

- ✓ The right to freedom of physical movement.
- ✓ The right to ownership of property.
- ✓ The right to freedom from torture.
- ✓ The right to a fair trial.
- ✓ The right to nondiscriminatory treatment.
- ✓ The right to physical security.
- ✓ The right to freedom of speech and association.
- ✓ The right to minimal education.
- ✓ The right to political participation.
- ✓ The right to subsistence.

4. Give some of the Environmental issues of concern to engineers?

- ✓ Releasing harmful substance into air and water.
- ✓ Using toxic substance in food processing.
- ✓ Disturbing land and water balances.

5. What are the issues in Computer ethics?

- Power Relationship
  - Job Elimination
  - Customer Relations
  - Biased Software
  - Stock Trading
  - Unrealistic Expectations
  - Political Power
  - Military Weapons
- Property
  - Embezzlement
  - Data and Software
- Privacy
  - Cyber crimes
  - Computer Virus
  - Techno stress
  - Cyber Scams and Frauds
  - Internet Defamation
  - Software Piracy
  - Cyber Squatting
  - Inappropriate Access
  - Data Bank Errors
  - Hackers
  - Legal Responses
- Professional Issues
  - Computer Failures
  - Computer Implementation
  - Health conditions

6. What are the problems of Defense industry?

- ✓ Problem of waste and huge cost in implementing and maintaining a weapons system.
- ✓ Problem of Technology creep.
- ✓ Problems in maintaining secrecy.
- ✓ Every country allocates large amount of its resources to defense sector [India spent ¼ of its resource for defense]

7. What are ways to promote an Ethical climate?

- ✓ Ethical values in their full complexity are widely acknowledged and appreciated by managers and employees alike.
- ✓ The sincere use of ethical language has to be recognized as a legitimate part of corporate dialogue.
- ✓ The top level management must establish a moral tone in words, in policies, by personal example etc.
- ✓ The management has to establish some procedures for resolving conflicts.

8. What are the important forms of Conflicts?

- ✓ Conflicts based on schedules
- ✓ Conflicts which arises in evolving the importance of projects and the department.
- ✓ Conflicts based on the availability of personal for a project.
- ✓ Conflicts over technical matters.
- ✓ Conflicts arise due to administrative procedure.
- ✓ Conflicts of personality.
- ✓ Conflicts over cost or expenditure or money.

9. What are the Principles of Conflicts of interest?

- ✓ Separate people from the problem.
- ✓ Focus on interest and not on positions.
- ✓ Generate a variety of possibilities before deciding what to do.
- ✓ Insist that the result be based on some objective standard.

10. What are the normative models to be used to avoid conflicts?

- ✓ Hired Guns
- ✓ Value-neutral Analysts
- ✓ Value-guided Advocates

11. What are the characteristics of an engineer as expert advisers in public planning and policy making?

- ✓ Honesty
- ✓ Competence
- ✓ Diligence
- ✓ Loyalty

12. How can Deceptive advertising be done?

- ✓ By outright lies.
- ✓ By half-truths.
- ✓ Through exaggeration.
- ✓ By making false innuendos, suggestions or implications.
- ✓ Through obfuscation created by ambiguity, vagueness or incoherence.
- ✓ Through subliminal manipulation of the unconscious.

13. Give the usage of the code of conduct.

The code of conduct will help the engineers to have a set of standards of behavior. They act as guidelines for their behavior. It helps to create workplaces where employees are encouraged to make ethical implications.

14. Give the IEEE Code of Ethics.

The members of the IEEE, in recognition of the importance of their technologies affecting the quality of life throughout the world, and in accepting a personal obligation to their profession, its members and the communities they serve, do hereby commit themselves to the highest ethical and professional conduct and agree…

- ✓ To accept responsibility in making engineering decisions consistent with the safety, health and welfare of the public, and to disclose promptly factors that might endanger the public or the environment.

- ✓ To avoid real or perceived conflicts of interest whenever possible and to disclose them to the affected parties when they do exist.
- ✓ To be honest and realistic in stating claims or estimates based on available data.
- ✓ To reject bribery in all its forms.
- ✓ To improve the understanding of technology, its appropriate application, and potential consequences.
- ✓ To maintain and improve their technical competence and to undertake technological tasks for others only if qualified by training or experience, or after full disclosure of pertinent limitations.
- ✓ To seek, accept and offer honest criticism of technical work, to acknowledge and correct errors, and to credit properly the contributions of others.
- ✓ To treat fairly all persons regardless of such factors such as religion, gender, disability, age or national origin.
- ✓ To avoid injuring others, their property, reputation or employment by false or malicious action.
- ✓ To assist colleagues and co-workers in their professional development and to support them in following this code of ethics.

15. Enumerate the code of ethics of engineers.

- ✓ Engineers shall hold paramount the safety, health and welfare of the public in the performance of their professional duties.
- ✓ Engineers shall perform services only in the areas of their competence.
- ✓ Engineers shall issue public statements only in an objective and truthful manner.
- ✓ Engineers shall act in professional matters for each employer or client as faithful agents or trustees, and shall avoid conflicts of interest.
- ✓ Engineers shall build their professional reputation on the merit of their services and shall not compete unfairly with others.
- ✓ Engineers shall act in such a manner as to uphold and enhance the honor, integrity and dignity of the profession.
- ✓ Engineers shall continue their professional development throughout their careers and shall provide opportunities for the professional development of those engineers under their supervision.

16. Enumerate the Code of Ethics by ASME.

Engineers uphold and advance the integrity, honor and dignity of the engineering profession by:

- ➢ using their knowledge and skill for the enhancement of human welfare;
- ➢ being honest and impartial, and serving with fidelity their clients (including their employers) and the public; and
- ➢ striving to increase the competence and prestige of the engineering profession.

1. Engineers shall hold paramount the safety, health and welfare of the public in the performance of their professional duties.
2. Engineers shall perform services only in the areas of their competence; they shall build their professional reputation on the merit of their services and shall not compete unfairly with others.

3. Engineers shall continue their professional development throughout their careers and shall provide opportunities for the professional and ethical development of those engineers under their supervision.
4. Engineers shall act in professional matters for each employer or client as faithful agents or trustees, and shall avoid conflicts of interest or the appearance of conflicts of interest.
5. Engineers shall respect the proprietary information and intellectual property rights of others, including charitable organizations and professional societies in the engineering field.
6. Engineers shall associate only with reputable persons or organizations