

**UNIT – 1**  
**HUMAN VALUES**  
**PART -A**

**1. What are human values?**

Values decide the standard of behavior. Some universally accepted values are freedom justice and equality. Other principles of values are love, care, honesty, integrity, self respect.

**2. What are ethical values?**

Trustworthiness, respect, responsibility, fairness, caring is ethical values

**3. Distinguish values from ethics and culture.**

Values are mainly related to individuals and since they are related to justice, they remain the same for every one. E.g. truth, honesty, empathy, self respect. Values do not change from individual to individual. Ethics is common to a group of individuals; the group may be religious or professional. Ethics is mostly based on some code or law and judgment of any action is based on code of conduct or law. Ethics change from individual to individual. Culture commonly refers

to conduct of a group. E.g system of worship, marriage. It may differ from society to society, nation to nation or religion to religion.

**4. What is integrity?**

Integrity is the unity of character based on moral values. Consistency in attitudes, emotions and conduct in relations to morally justified actions and values are also the part of integrity of individual. It implies honesty, trustworthiness.

**5. Define work ethics**

By one's work one cannot harm others. Any worker cannot escape accountability. Worker has the moral responsibility to see that no other person's right, private or freedom is impaired or transgressed.

**6. What is service learning?**

Service learning tells that one has moral responsibility to increase the desirable effects and to decrease the harmful effects. Any service should increase the desirable result.

**7. Mention some civic virtues?**

Good citizen demand civic virtue. It is the principle of not harming the surroundings .it also includes living peacefully, respect for others, protecting the environment and being normally and ethically good.

### **8. Write short notes on caring and sharing.**

Caring is the essence of moral life. Caring involves feelings, relationship, contends with other persons and protecting others and causing least damage to others. Sharing means sharing of feelings, ideas thoughts, resources and profits. Sharing is always mutually beneficial. Sharing morally acceptable feelings, resources and materials is a value.

### **9. Write notes on honesty.**

Any human being should imbibe honesty-honesty in acts, honesty in speech and honesty in beliefs. Honesty is the fundamental virtue in human relationship even though in may be difficult to follow some times.

### **10. What is courage as a value?**

Courage implies self respect and governs confrontations with danger and risk. It is not excessive rashness or cowardice, but it is the middle ground. Taking calculated risks and boldness in facing

Crises are the hallmarks of courage as a human value. It defines the mental makeup of an individual in taking bold decisions even under adverse situations.

### **11. Define co-operation.**

Co-operation means extending help to others, for a good cause. Co-operation may be through an idea, a suggestion, an assistance or physical work which extends to others for common benefit.

### **12. Define empathy.**

Empathy means putting self in a position of someone else and thinking as the later and reasoning suitable action.

### **13. Define spirituality.**

Spirituality raises a man above the materialistic world into a realm where he seeks peace and real happiness.

### **14. Define Integrity?**

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

### **15. 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.

### **16. Give the two aspects of Honesty?**

Truthfulness – meeting responsibilities concerning truth-telling.

Trustworthiness – Meeting responsibilities concerning trust.

### **17. 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.

### **18. What are Human values? Explain briefly.**

Values are the rules by which we make decisions about right and wrong, should and shouldn't, good and bad. "Emotional beliefs in principles regarded as particularly favorable or important for the individual."

Types of Values: (a) Right conduct, (b) Peace (c) Truth, (d) Love, (e) Nonviolence.

(a). Right conduct : (i) Self-Help Skills: Care of possessions, diet, hygiene, modesty, posture, self-reliance, and tidy appearance.

(ii) Social Skills: Good behavior, good manners, good relationships, helpfulness, No wastage and good environment.

(iii) Ethical Skills: Code of conduct, courage, dependability, duty, efficiency, ingenuity, initiative, perseverance, punctuality, resourcefulness, respect for all.

(b). PEACE: Attention, calmness, concentration, contentment, dignity, discipline, equality, equanimity, faithfulness, focus, gratitude, happiness, harmony, humility, inner silence, optimism, patience, reflection, satisfaction, self-acceptance, self-confidence, self-control, selfdiscipline, self-esteem, self-respect, sense control, tolerance, and understanding

(c). TRUTH: Accuracy, curiosity, discernment, fairness, fearlessness, honesty, integrity (unity of thought, word, and deed), intuition, justice, optimism, purity, quest for knowledge, reason, self analysis, sincerity, sprit of enquiry, synthesis, trust, truthfulness, and determination.

### **19. Explain Service Learning.**

Service Learning: The technical trade practices. Community engagement.

The service learning is a methodology falling under the category of experiential education.

It is one of the forms of experiential learning and community service opportunities.

## **20. Explain CIVIC VIRTUE.**

Civic virtues are the moral duties and rights, as a citizen of the village or the country or an integral part of the society and environment.

Civic virtues are divided into four categories:

1. Civic Knowledge
2. Self-Restraint
3. Self-Assertion
4. Self-Reliance

## **21. Explain Respect for others.**

Respect is a positive feeling of admiration or deference for a person. Respect can be a specific feeling of regard for the actual qualities of the one respected. It can also be conduct in accord with a specific ethic of respect.

Treating people with respect makes your world a nicer place to live in, whether it's at home, at school, or out in your community.

Don't insult people or make fun of them.

## **22. Explain Living Peacefully.**

To live peacefully, one should start install peace within (self). Charity begins at home. Then one can spread peace to family, organization where one works, and then to the world, including the environment.

## **23. Explain Self- Confidence, Character and Spirituality.**

**Self- Confidence:** Certainty in one's own capabilities, values, and goals. These people are usually positive thinking, flexible and willing to change. They respect others so much as they respect themselves.

**Character:** To determine the ideals.

**Spirituality:** Spirituality is a way of living that emphasizes the constant awareness and recognition of the spiritual dimension (mind and its development) of nature and people, with a dynamic balance between the material development and the spiritual development.

## **PART - B**

1. Explain some important human values.
2. Write a detailed note on work ethics.
3. Explain integrity and honesty in ethics.
4. Explain the importance of self-confidence in ethics.
5. List important time wasters. How can one manage time properly?
6. Explain caring, sharing and living peacefully.
7. Explain commitment and empathy.
8. Explain civic virtue and respect for others and also explain importance of cooperation.
9. Explain character and spirituality and their importance in ethics.
10. Explain the role of Yoga and meditation in the field of professional excellence and stress management.

**UNIT – 2**  
**ENGINEERING ETHICS**  
**PART – A**

**1. Define Ethics? (May-08,09,Dec-10)**

- Study of right or wrong.
- Good and evil.
- Obligations & rights.
- Justice.
- Social & Political deals.

**2. Define Engineering Ethics? (Dec-10)**

- 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. Differentiate Moral and Ethics?(May-08,Dec-08)**

**MORAL:**

- Refers only to personal behaviour.
- 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 behaviour.
- Critical reflection on what one does and why one does it.
- Refers only to professional behaviour.

**4. 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.

### **5. 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.

### **6. 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.

### **7. Define Moral Autonomy?**

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

### **8. 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.

### **9. 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.

### **10. What are the senses of Responsibility?**

- Obligations
- General moral capacities of people
- Liabilities and accountability for actions
- Blameworthiness or praiseworthiness

### **11. 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

## **12. What are the three types of Inquiry?**

Normative Inquiry – Based on values.

Conceptual Inquiry – Based on meaning.

Factual Inquiry – Based in facts.

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

♣ Vagueness

♣ Conflicting Reasons

♣ Disagreement

## **14. 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.

## **15. 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.

## **16. Give the need for Authority?**

Authority provides the framework in which learning can take place.

## **17. Define Integrity?**

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

## **18. What is the need for Moral Autonomy in the field of Engineering Ethics?**

Definition:

Autonomy means self-governing or self-determining i.e., acting independently. Moral autonomy means the right or the wrong conduct which is independent on ethical issues.

It deals with the improvement of an individual's moral thoughts which make him to adapt good habits. Moral autonomy is concerned with the independent attitude of a person related to ethical issues. It helps to improve the self-determination among the individuals.

Need for moral autonomy in the field of engineering ethics:

Moral autonomy is a skill and habit of thinking ethical problems in rational manners. These ethical issues are to be found out on the basis of moral problems. The general responsiveness of moral values are derived only from the training that we have received as a child with response to the right of others and ourselves. These moral concerns can be initiated or imparted among the engineers, mainly by engineers of various subjects and also by the way of their friends, or by social events occurring around them or by books and movies. So the main aim of all the courses of applied ethics is only to improve their abilities in order to face the moral issues critically. This can be achieved by improving the practical skills which are helping in producing effective independent or self-determination thoughts among the individuals about the moral problems.

### **19. State the Important or Uses of Ethical Theories.**

Ethical theories have three important uses:

- (a) Understanding moral dilemma.
- (b) Justify professional obligations and ideals.
- (c) Relating ordinary and professional morality.

### **20. 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.

## **PART – B**

1. (a). Explain the scope of Engineering Ethics. Highlight the importance of Ethics.  
(b). Explain in details about the senses of Engineering Ethics.
2. (a). Discuss in detail the various types of Moral issues  
(b). Specify the various types of Ethical inquiries available.
3. Discuss in detail about the concept of
  - a). Moral Dilemmas.
  - b). Moral Autonomy.
4. Discuss in details about
  - a) Gilligans Theory ( 8 Marks)
  - b) Kohlbergs Theory ( 8 Marks)
5. Explain about a) Consensus and Controversy (8 Marks)  
b) Heinzs Theory (8 Marks)
6. Explain in detail about Professional and Professionalism.
7. Explain in details the professionalism ideals and virtues.
8. Discuss in details the various theories about right action.
9. Explain in detail the traits of Self Interest, Customs and Religions.
10. Explain in details the various ethical theories and their uses.

**UNIT – 3**  
**ENGINEERING AS SOCIAL EXPERIMENTATION**  
**PART – A**

**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 consent 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, inter changeability, 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?**

- A Codes are restricted to general and vague wording.
- A Codes can't give a solution or method for solving the internal conflicts.
- A Codes cannot serve as the final moral authority for professional conduct.
- A 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.

**12. Comment on the importance of learning from the past, using Titanic disaster, as an example?**

The Titanic lacked a sufficient number of lifeboats.

**13. Comment on the importance of learning from the past, using the nuclear reactor accident at Three Mile Island, as an example?**

Valves are notorious for being among the least reliable components of hydraulic systems. It was a pressure relief valve, and lack of definitive information regarding its open or shut state. Similar Malfunctions had occurred with the identical valves on nuclear reactors because of the same reasons at other locations, but no attention had been given to them.

**14. Give any two prominent features of contemporary engineering practice that differentiate casual influence and moral accountability in engineering?**

- Large-scale engineering projects involve fragmentation of work.
- Due to the fragmentation of the work, the accountability will spread widely within an organization.
- There is frequently pressure to move on to a new project before the current one has been operating long enough to be observed carefully.
- The contagion of malpractice suits currently afflicting the medical profession is carrying over into engineering.

**15. Are SRBs inherently too dangerous to use on manned spacecraft? If so, why are they part of the design?**

Yes, since they have the disadvantage that once the fuel is lit, there is no way to turn the booster off or even to control the amount of thrust produced. SRBs were used instead of safer liquid fuelled boosters because they required a much smaller research-and-development effort.

Numerous other design changes were made to reduce the level of research and development required.

**16. Under what conditions would you say it is safe to launch a shuttle without an escape mechanism for the crew?**

- Design specifications 310F
- Have given valid consent
- Instead of rubber, steel billets for O-rings
- Liquid fuelled boosters instead of Solid rocket boosters

**17. In your opinion, was the „Right for informed consent“ of the astronauts of Space Shuttle**

**Challenger respected?**

**18. Define Ethical Conventionalism?**

Ethical conventionalism is the view that a particular set of conventions, customs, or laws is self certifying and not to be questioned as long as it is the set in force at a given time or for a given place.

**19. Mention some universally accepted ethical principles.**

- Honesty
- Integrity
- Fulfilling commitments
- Abiding by agreements in both letter and spirit

## **PART – B**

1. How can engineer become a responsible experimenter? Highlight the code of ethics for Engineers.
2. What is the important code of ethics? Give brief account on '4' canons of codes of ethics quoted by international standard or association.
3. Discuss on the roles played by the codes of ethics set by professional societies.
4. Compare and contrast engineering experiments with standard experiments.
5. Explain with help of examples of that engineers would learn not only from their earlier design and operating results, but also from those of those of engineers of other engineers.
6. Explain in detail about engineers as responsible experimenters.
7. Explain detail about balanced outlook on law.
8. Explain detail about industrial standards.
9. Explain detail about engineering as experimentation.
10. State the various problems of law in Engineering.

**UNIT – 4**  
**SAFETY, RESPONSIBILITIES AND RIGHTS**  
**PART – A**

**1. Define Risk?**

A risk is the potential that something unwanted and harmful may occur.

Risk = Probability X Consequences.

**2. 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.

**3. What are the drawbacks in the definition of Lawrence?**

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

**4. 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

**5. 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

**6. What is the knowledge required to assess the risk?**

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

## **7. What are the analytical methods?**

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

## **8. 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.

## **9. 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.

## **10. What are the reasons for Risk-Benefit Analysis?**

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

## **11. 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.

## **12. 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.

### **13. 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)  $R = P * C$

### **14. 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.

### **15. What are the positive uncertainties in determining risks?**

There are three positive uncertainties. They are:

- a. Purpose of designing
- b. Application of the product
- c. Materials and the skill used for producing the product.

### **16. 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 benefitable ratio between risks and benefits is calculated.

### **17. 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.

### **18. What is the main barrier to educational attempts?**

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

### **19. 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.

### **20. What was the problem in the Chernobyl reactor?**

The problem was that,

- i. The output was maintained to satisfy an unexpected demand.
- ii. The control device was not properly reprogrammed to maintain power at the required level.

## **PART – B**

1. (a).What are the main elements of IPR. Give examples of Discrimination. (8 marks)  
(b).State the necessity of Risk Benefit Analysis. (8 marks)
2. (a).Write short notes on Occupational crime. (8 marks)  
(b).Distinguish between employee rights and professional rights. (8 marks)
3. Discuss the significance of Intellectual Property rights. Also explain the legislation covering IPR in India.
4. Define Risk Benefit analysis. Why it is conducted? What are the limitations of RBA?
5. (a).Define the term Risk and Safety. How we an engineer assess the safety? (8 marks)  
(b).What is the factors that affect risk acceptability? What is the use of knowledge of risk acceptance to engineer? (8 marks)
6. Discuss the features, guideline and procedures of whistle blowing
7. Discuss Event Tree analysis with some practical example of risk analysis.
8. Explain the concept of liability with suitable example.
9. Explain the concept of Confidentiality in detail.
10. What are the types of conflicts of interests and the different ways to avoid conflicts of interests?

**UNIT – 5**  
**GLOBAL ISSUES**  
**PART – A**

**1. What are global issues?**

The social and environment aspects of engineer's profession and also the international context of engineering is called global issues. The global issues involve engineers as social experimenters.

**2. What are the three versions of Relativism?**

i. Ethical Relativism ii. Descriptive Relativism iii. Moral Relativism

**3. Differentiate between technology transfer and appropriate technology.**

The process by which technology is shifted to a novel setting and its subsequent implementation is called technology transfer. Whereas the process by which the suitable technology is properly identified, transferred and implemented in a new set of an environment is called appropriate technology.

**4. 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 non-discriminatory treatment.
- The right to physical security.
- The right to freedom of speech and association.
- The right to minimal education.
- The right to political participation.

**5. What are the reasons for the disaster at Bhopal?**

- The tanks used to store Methyl Iso-cyanate were overloaded to a tune of 75%.
- The emergency plant was also filled with a large amount of chemicals.
- The entire refrigeration unit had been shut down as a measure to reduce the cost and this led
- To increase of temperatures to a higher level.
- One of the disappointed workers unscrewed a pressure gauge on a tank and inserted a
- Hosepipe into it, knowing that it would cause damage, but not to this extent.

## **6. What is the important concept of environmental ethics?**

The new branch of applied ethics which is associated with the restoration of natural environment in a balanced state by not harming the human society through vast industrialization is called environmental ethics.

## **7. What are the characteristic features of human-centered environmental ethics?**

The conservation of natural resources for the benefit of present and future generations and the strong emphasis on the human awareness on the destruction of nature are the characteristic features of human-centered environmental ethics.

## **8. What is embezzlement?**

The process of committing computer crimes such as stealing or cheating clients and consumers and conspiracy in the fraudulent uses of computer networks is called embezzlement.

## **9. How engineers justify their involvements in weapons works?**

A steady and constant source of income for the livelihood of their families, better job promotional avenues with an enhanced salary and compulsive reservations in mental attitude are the primary factors with which engineers justify and compromise themselves to work defence industries.

## **10. What are the problems of Defence industry?**

- a) Problem of waste and huge cost in implementing and maintaining a weapons system.
- b) Problem of Technology creep.
- c) Problems in maintaining secrecy.
- d) Every country allocates large amount of its resources to defence sector [India spent  $\frac{1}{4}$  of its resource for defence]

## **11. What is an ethical climate?**

The favorable and workable atmosphere that is essential for the responsible conduct of an engineer is called ethical climate. This ethical climate enables engineers to contribute their maximum best to their corporate companies.

## **12. What are the special features of an ethical corporate climate?**

- Ethical values are widely appreciated by managers and employees.
- A corporate code of ethics is emphasized for using ethical language.
- Moral tone is set up in policies by management by providing suitable guidelines for
- Professional codes of ethics.
- Proper methods and procedures for conflict resolution are suitably evolved.

## **PART – B**

1. Explain in detail the various advantages and disadvantages of MNCs.
2. Discuss in details about Environmental Ethics.
3. Explain and enumerate the significance of the concept of Computer Ethics.
4. Describe in details about the Global issue of Weapons development.
5. Justify with suitable examples Engineers as Managers.
6. Justify Engineers as Expert witness and Advisors with suitable examples.
7. Explain in details about Moral Leadership.
8. Discuss in details about Code of Conduct.
9. Describe in details about Corporate Responsibility.
10. Explain in details about the Management of conflicts and the Principles of conflict Resolution.