

II/IV B.Tech Regular Degree Examination

April 2017

Civil Engineering

Fourth Semester

Professional Ethics and Human Values (14CE402)

Scheme of Valuation

Question No:1

(1×12=12Marks)

- a. Morals:** Morals are the welfare principles enunciated by the wise people, based on their experience and wisdom. They were edited, changed or modified or evolved to suit the geography of the region, rulers (dynasty), and in accordance with development of knowledge in science and technology and with time.
- Ethics:** ethics helps to know the people's beliefs, values, and morals, learn the good and bad of them, and practice them to maximize their well-being and happiness.
- b. 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.
- c. 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.
- d. Self Interest:** It is nothing but one's personal good. It refers to the goodness of oneself in the long run.
- e. Moral Dilemma:** A moral dilemma is a conflict in which you have to choose between two or more actions and have moral reasons for choosing each action.
- f. Right Ethics:** Rights are legal, social, or ethical principles of freedom or entitlement; that is, rights are the fundamental normative rules about what is allowed of people or owed to people.
- g. Risk:** Risk is a potential that something unwanted and harmful may occur. It is the result of an unsafe situation, sometimes unanticipated, during its use.
Risk = Probability of occurrence × Consequence in magnitude.
- h. Trade Mark:** Trademark is a wide identity of specific good and services, permitting differences to be made among different trades.
- i. Discrimination:** The unjust or prejudicial treatment of different categories of people, especially on the grounds of race, age, or sex.
- j. Moral Leadership:** Moral Leadership means adopting reasonable means to motivate the groups to achieve morally desirable goals. This leadership presents the engineers with many challenges to their moral principles.
- k. IEEE:** The **Institute of Electrical and Electronics Engineers**.

- 1. Consulting Engineers:** The consulting engineers work in private. There is no salary from the employers. But they charge fees from the sponsor and they have more freedom to decide on their projects.

Unit –I

2. a) Human values are:

- (1) Right conduct,**
- (2) Peace,**
- (3) Truth,**
- (4) Love, and**
- (5) Nonviolence.**

2.b) Service Learning: Service learning refers to learning the service policies, procedures, norms, and conditions, other than ‘the technical trade practices’. The service learning includes the characteristics of the work, basic requirements, security of the job, and awareness of the procedures, while taking decisions and actions. It helps the individuals to interact ethically with colleagues, to effectively coordinate with other departments, to interact cordially with suppliers as well as the customers, and to maintain all these friendly interactions. 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. It is distinguished in the following ways

1. Connection to curriculum
2. Learner’s voice
3. Reflection
4. Partners in the community.

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. An individual may exhibit civic virtues by voting, volunteering, and organizing welfare groups and meetings.

The duties are:

1. To pay taxes to the local government and state, in time.
2. To keep the surroundings clean and green.
3. Not to pollute the water, land, and air by following hygiene and proper garbage disposal.

For example, not to burn wood, tyres, plastic materials, spit in the open, even not to smoke in the open, and not to cause nuisance to the public, are some of the civic (duties) virtues.

4. To follow the road safety rules.

On the other hand, the rights are:

1. To vote the local or state government.
2. To contest in the elections to the local or state government.
3. To seek a public welfare facility such as a school, hospital or a community hall or transport or communication facility, for the residents.
4. To establish a green and safe environment, pollution free, corruption free, and to follow ethical principles. People are said to have the right to breathe in fresh air, by not allowing smoking in public.
5. People have inalienable right to accept or reject a project in their area. One has the right to seek legal remedy, in this respect, through public interest petition.

(OR)

3 a) Honesty is a virtue, and it is exhibited in two aspects namely,

- (a) Truthfulness and
- (b) Trustworthiness.

Truthfulness is to face the responsibilities upon telling truth. One should keep one's word or promise.

Trustworthiness is maintaining integrity and taking responsibility for personal performance.

Work Ethics: Work ethics is defined as a set of attitudes concerned with the value of work, which forms the motivational orientation. The 'work ethics' is aimed at ensuring the economy (get job, create wealth, earn salary), productivity (wealth, profit), safety (in workplace), health and hygiene (working conditions), privacy (raise family), security (permanence against contractual, pension, and retirement benefits), cultural and social development (leisure, hobby, and happiness), welfare (social work), environment (anti-pollution activities), and offer opportunities for all, according to their abilities, but without discrimination.

b) 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. This is said to be the great virtue of Indian philosophy and for Indians. Sometimes, spirituality includes the faith or belief in supernatural power/God, regarding the worldly events. It functions as a fertilizer for the soil 'character' to blossom into values and morals.

Spirituality includes creativity, communication, recognition of the individual as human being (as opposed to a life-less machine), respect to others, acceptance (stop finding faults with colleagues and accept them the way they are), vision (looking beyond the obvious and not believing anyone blindly), and partnership (not being too authoritative, and always sharing responsibility with others, for better returns).

Spirituality is motivation as it encourages the colleagues to perform better. Remember, lack of motivation leads to isolation. Spirituality is also energy: Be energetic and

flexible to adapt to challenging and changing situations. Spirituality is flexibility as well. One should not be too dominating. Make space for everyone and learn to recognize and accept people the way they are. Variety is the order of the day. But one can influence their mind to think and act together. Spirituality is also fun. Working is okay, but you also need to have fun in office to keep yourself charged up. Tolerance and empathy are the reflections of spirituality. Blue and saffron colours are said to be associated with spirituality.

UNIT-II

4 a) Ethical Theories/Approaches: Several ethical theories have been developed over different times, each of them stressing certain ethical principles or features. Each stresses a view and many a times, we find that these theories converge and reinforce the ethics, in deciding upon the actions and justifying the results.

1. Utilitarian Theory
2. Duty Ethics
3. Rights Theory
4. The Virtue Theory
5. Self-realisation Ethics
6. Justice (Fairness) Theory

b) Moral Autonomy: Moral autonomy is defined as, decisions and actions exercised on the basis of moral concern for other people and recognition of good moral reasons. Alternatively, moral autonomy means 'self determinant or independent'. The autonomous people hold moral beliefs and attitudes based on their critical reflection rather than on passive adoption of the conventions of the society or profession. Moral autonomy may also be defined as a skill and habit of thinking rationally about the ethical issues, on the basis of moral concern.

(OR)

5 a) Kohlberg Theory: Moral development in human being occurs overage and experience. Kohlberg suggested there are three levels of moral development, namely pre-conventional, conventional, and post-conventional, based on the type of reasoning and motivation of the individuals in response to moral questions.

In the pre-conventional level, right conduct for an individual is regarded as whatever directly benefits oneself. At this level, individuals are motivated by obedience or the desire to avoid punishment or to satisfy their own needs or by the influence by power on them. All young children exhibit this tendency. At the conventional level, people respect the law and authority. Rules and norms of one's family or group or society is accepted, as the standard of morality. Individuals in this level want to please or satisfy, and get approval by others and to meet the expectations of the society, rather than their self interest (e.g., good boy, good girl). Loyalty is regarded as most important. Many adults do not go beyond this level.

At the post-conventional level, people are called autonomous. They think originally and want to live by universally good principles and welfare of others. They have no self-interest. They live by principled conscience. They follow the golden rule, 'Do unto others as you would have them do unto you'. They maintain moral integrity, self-respect and respect for others.

b) **Criteria required for Profession:**

1. Advanced expertise: The expertise includes sophisticated skills and theoretical knowledge in exercising judgment. This means a professional should analyse the problem in specific known area, in an objective manner.

2. Self-regulation: One should analyse the problem independent of self-interest and direct to a decision towards the best interest of the clients/customers. An autonomous judgment (unbiased and on merits only) is expected. In such situations, the codes of conduct of professional societies are followed as guidance.

3. Public good: One should not be a mere paid employee of an individual or a teaching college or manufacturing organization, to execute whatever the employer wants one to do. The job should be recognised by the public. The concerted efforts in the job should be towards promotion of the welfare, safety, and health of the public.

UNIT-III

6.a) **Role of Engineers as Responsible Experimenters:**

The engineers facilitate experiments; they are not alone in the field. Their responsibility is shared with the organizations, people, government, and others. No doubt the engineers share a greater responsibility while monitoring the projects, identifying the risks, and informing the clients and the public with facts. Based on this, they can take decisions to participate or protest or promote. The engineer, as an experimenter, owe several responsibilities to the society, namely,

1. A conscientious commitment to live by moral values.
2. A comprehensive perspective on relevant information. It includes constant awareness of the progress of the experiment and readiness to monitor the side effects, if any.
3. Unrestricted free-personal involvement in all steps of the project/product development (autonomy).
4. Be accountable for the results of the project (accountability).

b.) **Balanced outlook on Law:**

The 'balanced outlook on law' in engineering practice stresses the necessity of laws and regulations and also their limitations in directing and controlling the engineering practice. Laws are necessary because, people are not fully responsible by themselves and because of the competitive nature of the free enterprise, which does not encourage moral initiatives. Laws are needed to provide a minimum level of compliance.

- Code for Builders by Hammurabi
- Steam Boat Code in USA
- Proper Role of Laws.

7a).Code: exhibit, rights, duties, and obligations of the members of a profession and a professional society.

Limitation of Codes: The codes are not remedy for all evils. They have many limitations, namely:

1. General and vague wordings. Many statements are general in nature and hence unable to solve all problems.
2. Not applicable to all situations. Codes are not sacred, and need not be accepted without criticism. Tolerance for criticisms of the codes themselves should be allowed.
3. Often have internal conflicts. Many times, the priorities are clearly spelt out, e.g., codes forbid public remarks critical of colleagues (engineers), but they actually discovered a major bribery, which might have caused a huge loss to the exchequer.
4. They cannot be treated as final moral authority for professional conduct. Codes have flaws by commission and omission. There are still some grey areas undefined by codes. They cannot be equated to laws. After all, even laws have loopholes and they invoke creativity in the legal practitioners.
5. Only a few enroll as members in professional society and non-members cannot be compelled.
6. Even as members of the professional society, many are unaware of the codes
7. Different societies have different codes. The codes cannot be uniform or same! Unifying the codes may not necessarily solve the problems prevailing various professions, but attempts are still made towards this unified codes.
8. Codes are said to be coercive. They are sometimes claimed to be threatening and forceful.

b) **Occupational Crime:** An occupational crime may be committed by

- (1) Wrong actions of a person through one's lawful employment or
- (2) Crime by an employee to promote one's own or employer's interest or
- (3) Theft or Pilferage by the employee.
- (4) Damage to the property or an employee of one's organisation.

UNIT-IV

8a). Environmental Ethics:

Environmental ethics is the study of

- (a) Moral issues concerning the environment, and
- (b) Moral perspectives, beliefs, or attitudes concerning those issues.

Engineers in the past are known for their negligence of environment, in their activities. It has become important now that engineers design eco-friendly tools, machines, sustainable products, processes, and projects. These are essential now to

- (a) Ensure protection (safety) of environment
- (b) Prevent the degradation of environment, and
- (c) Slow down the exploitation of the natural resources, so that the future generation can survive..

b) Weapon Development: The development of warfare and the involvement of engineers bring out many ethical issues concerned with engineers, such as the issue of integrity in experiments as well as expenditure in defense research and development, issue of personal commitment and conscience, and the issues of social justice and social health.

Engineers involve in weapons development because of the following reasons:

1. It gives one job with high salary.
2. One takes pride and honor in participating in the activities towards the defense of the nation (patriotic fervor).
3. One believes the he fights a war on terrorism and thereby contribute to peace and stability of the country. Ironically, the wars have never won peace, only peace can win peace!
4. By research and development, the engineer is reducing or eliminating the risk from enemy weapons, and saving one's country from disaster.

5. By building-up arsenals and show of force, a country can force the rogue country, towards regulation. Engineers can participate effectively in arms control negotiations for surrender or peace.

(OR)

9 a) **Computer Ethics:** Computer ethics is defined as (a) study and analysis of nature and social impact of computer technology,(b) formulation and justification of policies, for ethical use of computers.

Power Relationship:

Job Elimination

Customer Relations

Biased Software

Stock Trading

Unrealistic Expectations

Political Power

Military Weapons

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