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Declaration and Statement of Authorship

I, bearing Registration Number, 103117086, agree and acknowledge that:

1. The assessment was answered by me as per the instructions applicable to each assessment, and that I have not resorted to any unfair means to deliberately improve my performance.
2. I have neither impersonated anyone, nor have I been impersonated by any person for the purpose of assessments.

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1.

Moral Problem can occur in any step of execution of project. May it be the planning, designing, manufacturing or even production phase. The main reasons for any type of moral issues arising in engineering are:-

a) Resource crunch
b) Opportunity
c) Attitude

a) Resource crunch: The constraints of budget, technological obsolescence and time limits causes undesirable moral issues. This leads to manipulation and unsafe unethical execution of projects.

b) Opportunity: The emphasis on results and gains, projecting an own interests rather than the overall company's employees lead to unethical decisions and finally moral issues.

c) Attitude: Attitude of the employees is very important. They must realize their position and responsibility. The poor morale of employees due to poor working environment, lack of promotion, absence of recognition and reward system and so on affects their day to day activities and decisions leading to moral issues.

Professional Responsibility is a concept that refers to the fact that individuals and groups have morally based obligations and duties to others and to larger ethical and moral codes, standards and traditions.

Professional Accountability is the preparedness to give an explanation or justification to stakeholders for one's judgement, intentions and actions.

2.

We must have our own principles and adhere to it always. Being a professional, we have to understand our responsibility and act accordingly. We must be sure and precise of our company's policy.
Being a professional, one of the human values we must have is integrity. And we shouldn't compromise it.

For instance, a chief engineer is also responsible for getting the required materials. Now he/she should know the quality as well as the cost of the materials.
During this phase, when one of his/her friend approaches with a deal to give him/her a ~~lavish~~ fortune but provides with a sub-standard material, he should refuse it. Even though he will benefit however the price of this compromise makes the end product with low quality keeping the reputation of company at stake.

The chief engineer should therefore ~~be in~~ adhere to his/her integrity and refuse it.
The complete refusal to be compromised is thus one of the test of integrity.

3.

I think the ethical theory based on right is the best one because according to this theory the rights established by the society are protected and given the highest priority.
Rights are also considered ethically correct and valid because they ~~have the ability to~~ are endorsed by large population.

For example, when a friend borrow a notebook and loses it. The blame goes to the friend who borrowed the notebook because at that time she had the right to the notebook.

Since rights are defined by the society and are in our constitution as well, it helps a person / team to act ethically as well as according to the law.

4

There are numerous ethical issues faced by engineers. Some of them are briefly explained below:-

a) Public Safety
b) Environmental Protection
c) Whistle Blowing

a) Public Safety: Sometimes the engineers may be forced to neglect the safety checks to meet the production targets. Because the engineer is obliged to the employer, he/she has to neglect the ~~pu~~ safety of society.

b) Environmental Protection: The goals set up by the engineers are often conflicting with environmental goals. But now, due to technological advancement, proper EIA we can identify and rectify the issue. However, it is expensive and companies try to avoid this leading to some unethical decisions.

c) Whistle Blowing: The technical knowledge and organisational positions of engineers enable them to detect serious moral problems that affect the public welfare. Sometimes, they cannot bring appropriate attention to serious problems they detect unless they can convince others to act. Here, whistleblowing comes up naturally.

as the only option for engineers. It has drawn so much attention in engineering nowadays.

5.

6.

The engineer as an experimenter, owes four responsibilities to the society namely conscientious commitment, comprehensive perspective, unrestricted free-personal involvement and accountability.

A comprehensive perspective on relevant information is necessary. An engineer need to be constantly aware of the progress of the the experiment and he/she should be prepared to non address and mitigate side effects if any.

The engineer has to identify all the successful projects in the past similar to the present one. They should have a comprehensive perspective of the project with details of broken down stages of experimental stages.

For instance, while designing a building with steel, we need to first break down the project into many sections. Using help from professors or seniors we need to take account for the exact loading our building is going to take. It take enormous reading time as well as analyzing past records. If, earthquake details are there, we need to incorporate in our design so that our building is safe from seismic zone.
That is, only when necessary details are found we can design our building accordingly and this is what comprehensive perspective means.
Another instance, is while doing a homework. Before starting, we have to gather all possible data, relevant datas and find the correct ways to approach from books or even professors and then start the problem.

7

Pressurizing by your closed sub-ordinate is not a new experience for anyone working professionally. Being a chief engineer of a famous steel plant if I came to a situation as latter mentioned, I would take some relevant steps.

First, I will analyze the candidate and see his progress history. Through his reports and interviews I will get a thorough knowledge of his attitude and dedication. If he is a suitable candidate I will ask him to apply the normal way of recruitment. If he is the one, the members of the committee too will agree and he gets recruited.

However, if the candidate is irresponsible and doesn't have any technical knowledge I will guide him through the steps he has to take in order to become recruited. Maybe some course or even an internship. If he is interested, though it will take time I will try my best to recruit him. If he is arrogant and wants an easy escape I would leave him.

Being in a position, I have to act professionally and adhere to my integrity as well as the company's, since one of the traits of integrity is complete refusal to be compromised.

8.

The different strategies of Risk Management are pointed below.

a) Risk Identification
b) Risk Evaluation
c) Risk Control

a) Risk Identification: Identification of risk is very important. It can be identified using various techniques such as physical inspection, safety audit, job-safety analysis etc. It is the first step in Risk Management.

b) Risk Evaluation: After identification, risk has to be measured on the basis of economic, social or legal considerations. The economic and social considerations include financial aspects, insurance premium, overall effect on the profitability and possible loss of production. The legal considerations include code of practice, guidance note, fire prevention, pollution and product liability.

c) Risk Control: It consists of four areas risk avoidance, risk retention, risk transfer and risk reduction. Risk avoidance is the conscious decision the management has to undertake for avoiding a particular risk. Risk retention refers to a particular risk for which any consequent loss is financed by the organization. Risk transfer refers to the legal assignment of the cost of certain potential

losses from one party to another.
Risk reduction refers to the reduction elimination of all aspect of accidental loss that lead to a wastage of an organization's assets.

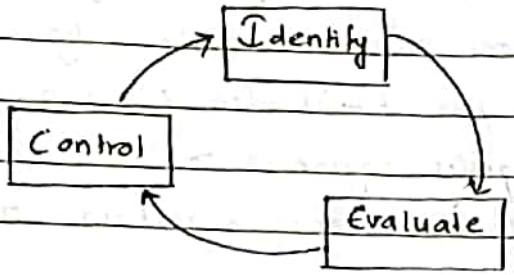

Fig: Risk Management.

The ethical codes for professionals are essential because it provides an ethical starting point for the professionals as well as others outside the profession. The ethical codes ensures quality in treatment of members of the profession and those the profession serves.

The codes provide a framework for conducting essential information functions, instituting polices and developing strategies for service.

Some of the major provision of ethical codes are briefly explained below:-

a) Guidance during unethical situation
b) Communicating ethical viewpoint of the profession.
c) Promoting values.

10.

Environment Ethics is the discipline in philosophy that studies the moral relationship of human beings to, and also the value and moral status of the environment and its non-human content.

Since engineers are the creators of technology that contributes to environmental degradation, there should be obligation to protect the environment. Therefore, it is when environment ethics helps them, because it obligates engineers to take conscious efforts to protect the environment as well as to maintain its stability from the hazardous pollutants.

Some of the environmental issues of concern to engineers are:-

a) Water Pollution
b) Air Pollution
c) Solid waste management

a) Water Pollution: Every industry produces waste materials that need to be discarded. Since rivers have the self-cleaning capacity there are used. But many industries using this has made a rivers, a dumpsites. Water pollution is therefore one of the major concern because it is directly consumed by animals and humans. The harmful chemicals causes health concerns that might be even deadly.

b) Air pollution: Manufacturing any product has to go through numerous steps. For instance, manufacturing a cement alone contributes about 8% of the carbon dioxide. Since air is the basic requirement for any living beings, inhaling polluted air directly affects the lungs.
Therefore, this is one of the major concern of any engineers.

c) Solid waste management: Waste is unavoidably generated. One thing that can be controlled is the amount of waste. Since, dumping waste is equally expensive because of the shortage of land, engineers growing concern is to reduce the waste so that the generated waste can be minimized and hence save the environment from dreadful after effect.