



GENERAL SIR JOHN KOTELAWALA DEFENCE UNIVERSITY

Faculty of Engineering

Department of Civil Engineering

BSc Engineering Degree

Semester 5 Examination – May/June 2019

(Intake 34 – All Engineering Streams)

CE 3142 PROFESSIONAL ETHICS

Time allowed: 2 hours

INSTRUCTIONS TO CANDIDATES

This paper contains 4 questions on one page

Answer all questions

This is a closed book examination

This examination accounts for 70% of the module assessment. The marks assigned for each question and parts thereof (out of 100 for this paper) are indicated in square brackets

If you have any doubt as to the interpretation of the wordings of a question, make your own decision, but clearly state it on the script

Assume reasonable values for any data not given in or provided with the question paper, clearly make such assumptions made in the script

All examinations are conducted under the rules and regulations of the KDU

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1. (a) Explain with illustrative examples, the similarities and dissimilarities between Moral Values and Ethical Values. (09 Marks)
(b) Explain the following concepts with examples : (i) Objectivity (ii) Transparency (iii) Integrity (iv) Conflict of Interest. (4 x 4 =16 Marks)

Moral values refer to universally accepted norms of behavior in civilized society such as those depicted in religious precepts like “refrain from stealing, killing, telling lies, giving false evidence etc.”. Ethical values refer to expected behavior in an organization or profession in accordance with the goals, responsibilities and dignity of such organization or profession. Most of the Ethical Values are common to moral values but Ethical Values go beyond moral values reflecting the goals and responsibilities of a particular organization or profession.

- (i) *Objectivity: Taking decisions and expressing views solely based on facts.*
- (ii) *Transparency: Taking decisions with openness and according to declared principles.*
- (iii) *Integrity: Being truthful, honest and being true to one's conscience and convictions in taking decisions or expressing opinions.*
- (iv) *Conflict of Interest: Situation where a person takes decisions of a business or professional nature in an organization when one or more of persons affected by the decision have a connection (business or any other form of relationship) with the person taking the decisions (which could affect his impartiality) or the person himself has an undeclared personal interest in the decision preventing impartiality.*

2. (a) As an Ethical Obligation, Engineers are expected to ensure sustainable management of earth's resource and minimize adverse environmental impacts of their engineering works for the sake of present and future generations.
Taking a real or hypothetical engineering project related to your field of Engineering, describe the challenges in satisfying the above concept and how the challenges could be overcome.
Your answer must describe the components of the project, the difficulties in satisfying the above concept and your suggestions to eliminate or minimize the contravention of the above obligation. . (15 Marks)

*Description of the project (03 Marks)
Identifying environmental impacts..... (06 Marks)
Steps to eliminate or minimize the impacts (06 Marks)*

- (b) Explain the impact of deforestation on ecological conservation. (10 Marks)

Deforestation has the following impacts:

(Any three of the following will get 10 marks: Two will get 06 marks and one will get 03marks)

Erosion of soil and giving rise to floods due to fast movement of surface runoff

Reduction of absorption of carbon dioxide and greenhouse gases and reduction of emission of oxygen. This can cause change of weather patterns giving rise to droughts and floods.

Destruction of endangered plants and animals leading to their extinction.

Reduction of habitat for animal species causing some species like elephants to encroach on human habitations giving rise to conflict between man and animals.

Reduction of groundwater recharge due to fast movement of surface runoff.

Disturbance of air movement reducing upward movement of air to form water bearing clouds which cause rainfall.

3. Considering any worksite, factory or workshop you have seen, describe the procedure that should be followed in assessing and eliminating or minimizing risk to life and property. In your answer, describe:
 - (a) The worksite, factory or workshop you have chosen and the machinery, human resources and operations related to same. (03 Marks)
 - (b) Identification of specific items that need to be considered in relation to risk. (04 Marks)
 - (c) The steps involved in eliminating or minimizing risk to life and property. (18 Marks)

Description of site..... .(03 Marks)

Identification of hazards(04Marks)

Arranging the hazards in the order of associated damage(03 Marks)

Allocation of probability of occurrence of each hazard based on past records, user manuals, maintenance records, and visual inspection of the relevant items.(04 Marks)

Arranging the hazards on a priority basis based on damage severity and associated probability..... .(04 Marks)

Preparation of a plan of action to eliminate or minimize risks....(04 marks)

Implementation of the plan of action..... .(03 Marks)

4. List any two Ethical Values related to each of the following:

- (a) Publishing Research.
- (b) Using Computers.
- (c) Conducting (commercial) Business Operations.
- (d) Promoting Human Rights.
- (e) Practicing as a Professional Engineer

(5 x 5 =25)

Note: The answers given below for this question are possible sample answers. Any relevant answers outside these may be taken as acceptable.

(a) The following have to be avoided as unethical

- 1. Plagiarism***
- 2. Fabrication and falsification***
- 3. Non-publication of data***
- 4. Faulty data-gathering procedures***
- 5. Misleading authorship***
- 6. Harsh comments about other authors***
- 7. Violating copy rights***
- 8. Non –acknowledgement of information obtained from other publications***

(b)

- 1. Do not use a computer to harm other people.***
- 2. Do not interfere with other people's computer work.***
- 3. Do not snoop around in other people's files.***
- 4. Do not use a computer to steal.***
- 5. Do not use a computer to bear false witness.***

- 6. Do not use or copy commercial software for which you have not paid.**
- 7. Do not use other people's computer resources without authorization.**
- 8. Do not appropriate other people's intellectual output.**
- 9. Think about the social consequences of the programs you write.**
- 10. Use a computer in ways that show consideration and respect.**

(c)

- 1. Do not engage bribery in order to get bids and tenders accepted or to get confidential information from competitor business employees. In fact, it is a crime that is legally punishable in most countries today.**
- 2. Do not engage in gender discrimination at workplace, employee harassment, causing poor working conditions, and child labor. (Labour related issues)**
- 3. Do not force workers to work at below minimum wages, violate worker rights, and do not compromise health, safety, and environmental standards.**
- 4. Show honesty, integrity, and openness in consumer relationships, addressing warranty and guarantee claims in an open and transparent manner.**
- 5. Do not use deceptive advertising to increase sales.**
- 6. Do not engage in business practices like dumping goods at loss making prices just to earn market shares or to oust a new competitor from business.**
- 7. Do not adulterate food items or sell date expired items**

(d)

1. *Do not discriminate people based on factors such as race, colour, sex, language, religion, political or other opinion, national or social origin, property, birth or other status.*
2. *Do not subject any human being to torture or to cruel, inhuman or degrading treatment or punishment.*
3. *Ensure everyone has the right to recognition everywhere as a person before the law.*
4. *Ensure everyone charged with a penal offence has the right to be presumed innocent until proved guilty according to law in a public trial at which he has had all the guarantees necessary for his defence.*
5. *Ensure everyone has the right to a nationality.*
6. *Ensure everyone has the right of equal access to public service in his country.*
7. *Ensure that Parents have a prior right to choose the kind of education that shall be given to their children.*

(e)

1. *Safety and the health public must be given priority in all activities.*
 2. *Conservation of the ecological system must be practiced as far as possible.*
 3. *Financial and material resources must not be wasted in projects carried out.*
 4. *The dignity of the Profession must be preserved in behavior and all activities.*
 5. *Must cooperate in any inquiry held for public or professional good.*
 6. *Must engage in Professional Development activities.*
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