

A 1259

B.E./B.Tech. DEGREE EXAMINATION, MAY/JUNE 2007.

Seventh Semester

Civil Engineering

GE 035 — PROFESSIONAL ETHICS

(Common to All Branches except Bio-Medical Engineering)

Time : Three hours

Maximum : 100 marks

Answer ALL questions.

PART A — (10 × 2 = 20 marks)

1. State the three features of moral problems which make them complex.
2. Define Moral Autonomy.
3. Give the reasons why there should be laws to regulate engineering work.
4. State the significance of the following quotation. "Take out your engineering hat and put on your management hat".
5. State the extended definition of 'safety'.
6. Describe briefly the importance of 'safe exit'.
7. Contrast agency loyalty and identification loyalty.
8. List the central elements of collegiality. How can the collegiality be misused?
9. What are ethical pluralism and ethical relativism?
10. What should an ethical expert witness, even though hired by a company, expected to do?

PART B — (5 × 16 = 80 marks)

11. (a) (i) List the four Ethical Theories or Theories about Right Action, and indicate, very briefly, the most important feature of each one of them. (6)
- (ii) Read the following ethical problem about building large dams, and apply each one of the four ethical theories to find whether large dams should be built. Compare the solutions provided by each theory. (10)

“Building of large dams across rivers, most often leads to great benefit to the society, by providing supplies of irrigation and drinking water, flood control and power generation. However, these benefits often come at the cost of people who live in areas that will be flooded by the construction of the dam. They lose their homes, livelihood, and are put to other suffering”.

Or

- (b) (i) Describe the levels of moral development in human beings as proposed by Lawrence Kohlberg. How do the views of Carol Gilligan differ from that of Kohlberg? (7)
- (ii) What are the requirements for a person to be called a professional? (3)
- (iii) State the steps to be used for solving ethical dilemmas. (6)
12. (a) (i) State and explain the similarities and contrasts between standard experiments and engineering as experimentation. (10)
- (ii) Name the four features of engineers as responsible experimenters, and explain any two of these features, including the contemporary difficulties engineers face in having them. (6)

Or

- (b) (i) Describe the roles of “Codes of Ethics” formulated by various professional engineering societies. Indicate the relative importance of the broad categories into which these roles are classified. (10)
- (ii) What are the limitations of the codes? (3)
- (iii) Why are laws related to technology not always effective? (3)

13. (a) (i) What is risk? List the factors which influence the assessment and acceptance of risk by the public. (6)
- (ii) Write a note on Risk-Benefit Analysis, including its conceptual difficulties (6)
- (iii) Does reduction of risk associated with a product always result in increased costs for the manufacturer? Explain. (4)

Or

- (b) Explain what methods engineers can use in trying to overcome the uncertainties of design? (16)

14. (a) (i) When do the employee engineers develop identification loyalty? What should the employers do in order to cultivate identification loyalty among the employees? (4)
- (ii) What is whistle blowing? What is its ethical basis? What are the conditions which need to be satisfied before an employee blows whistle? (8)
- (iii) How can the employers prevent whistle blowing? (4)

Or

- (b) (i) Name and describe four important responsibilities of engineers as employees. (8)
- (ii) Write a detailed note about the employee rights and professional rights that the engineers are entitled. (8)

15. (a) (i) Write a detailed note on the various aspects connected with the wide new field of computer ethics. (10)
- (ii) Explain the environmental problems that are global in nature, not confined to national boundaries, using examples. (6)

Or

- (b) (i) What care should be taken by the multinational companies, while transferring hazardous technology? Give your answer with Bhopal tragedy as the example. Also describe appropriate technology. (6)
- (ii) How can the engineers balance their professional ethics and responsibilities as managers? (4)
- (iii) Is it ethically correct, for the multinational companies, to 'be a Roman when in Rome'? Give one argument in favour and one argument against. (6)