

Contents

Preface	vii
Syllabus	ix
Chapter 1 – Human Values	1–21
1.0 Objectives	1
1.1 Morals	2
1.2 Values	2
1.3 Ethics	5
1.4 Integrity	5
1.5 Work ethics	5
1.6 Service learning	7
1.7 Virtues	8
1.8 Respect for others	9
1.9 Living peacefully	9
1.10 Caring	10
1.11 Sharing	10
1.12 Honesty	11
1.13 Courage	12
1.14 Valuing time	13
1.15 Cooperation	13
1.16 Commitment	14
1.17 Empathy	14
1.18 Self-confidence	15
1.19 Challenges in the work place	16
1.20 Spirituality	20

Chapter 2 – Engineering Ethics 22–44

- 2.0 Overview 22
- 2.1 Senses of engineering ethics 23
- 2.2 Variety of moral issues 23
- 2.3 Types of inquiries 24
- 2.4 Moral dilemma 25
- 2.5 Moral autonomy 26
- 2.6 Moral development (theories) 27
- 2.7 Consensus and controversy 29
- 2.8 Profession 29
- 2.9 Models of professional roles 31
- 2.10 Responsibility 32
- 2.11 Theories about right action (Ethical theories) 36
- 2.12 Self-control 41
- 2.13 Self-interest 41
- 2.14 Customs 41
- 2.15 Religion 42
- 2.16 Self-respect 43
- 2.17 Case study: Choice of the theory 43

Chapter 3 – Engineering as Social Experimentation 45–54

- 3.0 Engineering as experimentation 45
- 3.1 Engineers as responsible experimenters 48
- 3.2 Codes of ethics 49
- 3.3 Industrial standards 51
- 3.4 A balanced outlook on law 51
- 3.5 Case study: The challenger 52

Chapter 4 – Safety, Responsibilities and Rights 55–89

- 4.0 Safety definition 55
- 4.1 Safety and risk 56
- 4.2 Risk analysis 56
- 4.3 Assessment of safety and risk 65
- 4.4 Safe exit 66
- 4.5 Risk-benefit analysis 66
- 4.6 Safety lessons from ‘the challenger’ 68
- 4.7 Case study: Power plants 69
- 4.8 Collegiality and loyalty 71

4.9	Collective bargaining	72
4.10	Confidentiality	74
4.11	Conflict of interests	77
4.12	Occupational crime	78
4.13	Human rights	80
4.14	Employee rights	81
4.15	Whistle blowing	83
4.16	Intellectual property rights	85
Chapter 5 – Global Issues		90–118
5.0	Globalization	90
5.1	Multinational corporations	90
5.2	Environmental ethics	94
5.3	Computer ethics	97
5.4	Weapons development	102
5.5	Engineers as managers	103
5.6	Consulting engineers	104
5.7	Engineers as expert witness	105
5.8	Engineers as advisors in planning and policy making	107
5.9	Moral leadership	108
5.10	Codes of ethics	109
5.11	Engineering council of India	118
5.12	Codes of ethics for TATA group	118
5.13	Ethics and codes of business conduct in MNC	118
Bibliography		119
Case Studies		120
Question Bank Part-A		140
Question Bank Part-B		154
Questions and Answers – Beyond the syllabus		166