ESE-2025 Prelims Paper-I

Engineering Ethics



Office: F-126, (Lower Basement), Katwaria Sarai, New Delhi-110016 • Phone: 011-26522064

Mobile: 8130909220, 9711853908 • E-mail: info.publications@iesmaster.org, info@iesmaster.org

Web: iesmasterpublications.com, iesmaster.org



IES MASTER PUBLICATION

F-126, (Lower Basement), Katwaria Sarai, New Delhi-110016

Phone: 011-26522064, **Mobile**: 8130909220, 9711853908

E-mail: info.publications@iesmaster.org

Web: iesmasterpublications.com

All rights reserved.

Copyright © 2024, by IES MASTER Publication. No part of this booklet may be reproduced, or distributed in any form or by any means, electronic, mechanical, photocopying, recording, or otherwise or stored in a database or retrieval system without the prior permission of IES MASTER Publication, New Delhi. Violates are liable to be legally prosecuted.

First Edition : 2016

Second Edition : 2017

Third Edition : 2018

Fourth Edition : 2019

Fifth Edition : 2020

Sixth Edition : 2021

Seventh Edition: 2022

Eighth Edition : 2023

Ninth Edition : 2024

Typeset at: IES Master Publication, New Delhi-110016

PREFACE

Engineering professionals are required to serve the general public by strictly adhering to the codes of conduct, and giving utmost importance to the health, safety and welfare of the public.

Engineering Ethics is a textbook that explores the moral issues and decisions encountered by practicing engineering professionals, and the study of related questions about the moral ideals, character, policies and relationships of people and corporations involved in technological activities.

The main objective of this fourth and revised edition of Engineering Ethics is to prepare students for their professional responsibilities as Engineers. To help them recognise and think through ethically significant problem situations that are common in the field of engineering, and to evaluate the existing ethical standards for engineering practice.

A disaster during an engineering project can occur due to many factors such as overconfidence, negligence, poor maintenance, etc. If the necessary codes of Engineering Ethics are followed, most of the disasters can be avoided. The understanding of human character and values is ethics. Values provide a unique, personal and moral template to assess the intentions and actions of ourselves and others. It also differentiates the right from the wrong.

Starting from the very basic concepts of Ethics and Values, this book condenses and maps all important discussion on Ethical Theories, Professional Ethics, Principles of Ethics, Human Values and Psychology, and Ethical Governance in a manner that it all interlinks as one reads para, pages, and chapters. Thus, one gets a vivid picture of the moral issues and dilemmas faced by engineers. And the book also gives a critical insight into the major global issues concerning Environmental Ethics, Intellectual Property Rights (IPRs), Computer Ethics and Internet, etc.

Further, to acclimatise students with engineering ethics, and to build their analytical and reasoning skills in solving problems, this revised and updated book includes more than 285 questions for self practice and grasping the essence of Engineering Ethics.

Any constructive ideas, suggestions, feedbacks for improving the content of future editions will be greatly appreciated.

IES Master Publication

New Delhi

CONTENTS

Section	Description			Page No.
	Preface			
Chapter 1	UNDERSTANDING THE BASIC CONCEPTS OF ETHICS AND VALUES			
	1.1	Epistemology		1
		1.1.1 Objecti	vist epistemology	1
		1.1.2 Constru	uctionist Epistemology	1
		1.1.3 Subjec	tivist Epistemology	2
	1.2	Values		3
		1.2.1 Definin	g Values	3
		1.2.2 Classif	ication of Values	4
	1.3	Social Change		5
		1.3.1 Meanin	g of Social Change	5
		1.3.2 Types	of Social Change	5
		1.3.3 Factors	s Influencing Social Change	5
	1.4	Social Norms		6
	1.5	Societal Devel	opment	6
	1.6 Role of Socialization in the Development of Values		7	
	1.7	Moral values		8
		1.7.1 Definin	g Moral Values	8
		1.7.2 Classif	ication of Moral Values	8
		1.7.3 Definin	g Morality	8
		1.7.4 Classif	ication of Morality	8
	1.8	Ethics and Eth	nical values	9
		1.8.1 Definin	g Ethics	9
		1.8.2 Definin	g Ethical Values	9
		1.8.3 Classif	ication of Ethical Values	9
		1.8.4 Core E	thical Values	9
		185 Dichote	omy between Morals and Ethics	10

		1.8.6	Character	11	
		1.8.7	Theories and Approaches Towards Understanding Ethics	11	
		1.8.8	Theory of Justice	17	
	1.9	Ethica	l and Moral dilemma	18	
		1.9.1	Defining Ethical Dilemma	18	
		1.9.2	Defining Moral Dilemma	18	
		1.9.3	An Engineering Perspective	18	
	1.10	Ethica	l and Moral autonomy	18	
		1.10.1	Lawrence Kohlberg's Theory	19	
		1.10.2	Carol Gilligan's Theory	19	
		1.10.3	Abraham Maslow's Theory of Hierarchy of Needs	20	
	1.11	Ethics	vs law	20	
Chapter 2	AN INTRODUCTION TO ENGINEERING ETHICS 31 -				
	2.1	Meani	ng nature and scope of engineering ethics	32	
		2.1.1	Meaning	32	
		2.1.2	Nature of Engineering Ethics	32	
		2.1.3	Scope of Engineering Ethics	33	
	2.2	Evolu	tion of engineering ethics as a distinct discipline	34	
	2.3	Signif	cance of ethics in engineering profession	34	
		2.3.1	Technology and Society	34	
		2.3.2	Engineering as Social Experimentation	34	
	2.4	Challe	nges to engineering ethics	35	
		2.4.1	Social Challenges	36	
		2.4.2	Economic Challenges	36	
		2.4.3	Political Challenges	36	
		2.4.4	Environmental Challenges	36	
		2.4.5	Technical Challenges	36	
		2.4.6	Cultural Challenges	36	
	2.5	A glob	oal approach to engineering ethics	36	
	2.6	Funda	mental principles of engineering ethics	37	
Chapter 3	ETHI	ICS AN	D VALUES IN ENGINEERING PROFESSION 42 -	- 57	
	3.1	Engin	eering as a profession	43	

Functions of Attitude60

4.2.2

(viii) Contents

		4.2.3	Types of Attitude	61
		4.2.4	Influence of Attitude on Human Behavior	61
		4.2.5	Moral Attitude	61
	4.3	Behaviour		62
	4.4	Aptitud	de	62
	4.5	Perception		62
		4.5.1	The Perceptual Process	62
		4.5.2	Perceptual Distortion in Public Services	62
	4.6	Emotio	ons and Emotional Intelligence	63
		4.6.1	Types of Emotions	63
		4.6.2	Emotional Intelligence	63
		4.6.3	Aspects of Emotional Intelligence	64
		4.6.4	Cognitive v/s Emotional Intelligence	64
		4.6.5	Emotional Resilience	64
		4.6.6	Skills For Developing Emotional Intelligence [EI]	64
		4.6.7	Application and Relevance of Emotional Intelligence (EI) in Human Life	64
	4.7	Decisi	on Making	65
		4.7.1	Characteristics of Decision Making	65
		4.7.2	Advantages of Decision Making	66
		4.7.3	Steps Involved in Decision Making Process	66
		4.7.4	Why Rational and Right Decisions are Not Possible?	67
	4.8	Leade	rship and Communication	68
		4.8.1	The Traits Approach	68
		4.8.2	Behavioral Approaches	69
		4.8.3	Situational/Contingency Approaches	69
		4.8.4	Contemporary Issues in Leadership	69
		4.8.5	Communication	69
Chapter 5	ORG	ANIZAT	IONAL BEHAVIOUR AND MANAGEMENT 74 -	- 92
	5.1	Introd	uction to the concept of organization	74
	5.2	Functi	ons of an Organization	75
	5.3	Marke	t structures	75
		5.3.1	Type of market structure	76

5.5 Allocation of Power and Authority
5.5.2 Sources of Authority
5.5.3 Types of Authority 7 5.5.4 Relationship of Responsibility and Accountability 8 5.6 Requirements of the Organization and Employees and the overall goal 8 5.6.1 Benefits of Mechanization and Automation 8 5.6.2 Drawbacks of Mechanization and Automation 8 5.7 Employer-Employee Relationship 8 5.7.1 Proper Channels of Communication 8 5.7.2 Proper Mechanism for Conflict Resolution 8 5.7.3 Opportunity for Employee Motivation & Growth 8 5.8 Role of Management and Engineers 6 5.9 Organizational Control 8 5.9.1 Types of Control 8 5.9.2 Means of Control 8 5.9.3 Loyalty 8 5.9.4 Professionalism and Loyalty 8 5.10.1 Conflicts and Issues in the Organization and their Resolution 8 5.10.2 Issues in the Organization and their Resolution 8 5.10.3 How to Resolve Conflicts and Issues 8
5.5.4 Relationship of Responsibility and Accountability 8 5.6 Requirements of the Organization and Employees and the overall goal 8 5.6.1 Benefits of Mechanization and Automation 8 5.6.2 Drawbacks of Mechanization and Automation 8 5.7 Employer-Employee Relationship 8 5.7.1 Proper Channels of Communication 8 5.7.2 Proper Mechanism for Conflict Resolution 8 5.7.3 Opportunity for Employee Motivation & Growth 8 5.8 Role of Management and Engineers 8 5.9 Organizational Control 8 5.9.1 Types of Control 8 5.9.2 Means of Control 8 5.9.3 Loyalty 8 5.9.4 Professionalism and Loyalty 8 5.10.1 Conflicts and Issues in the Organization and their Resolution 8 5.10.2 Issues in the Organization and their Resolution 8 5.10.3 How to Resolve Conflicts and Issues 8
5.6 Requirements of the Organization and Employees and the overall goal 8 5.6.1 Benefits of Mechanization and Automation 8 5.6.2 Drawbacks of Mechanization and Automation 8 5.7 Employer-Employee Relationship 8 5.7.1 Proper Channels of Communication 8 5.7.2 Proper Mechanism for Conflict Resolution 8 5.7.3 Opportunity for Employee Motivation & Growth 8 5.8 Role of Management and Engineers 8 5.9 Organizational Control 8 5.9.1 Types of Control 8 5.9.2 Means of Control 8 5.9.3 Loyalty 8 5.9.4 Professionalism and Loyalty 8 5.10.1 Conflicts and Issues in the Organization and their Resolution 8 5.10.2 Issues in the Organisation and their Resolution 8 5.10.3 How to Resolve Conflicts and Issues 8
5.6.1 Benefits of Mechanization and Automation 8 5.6.2 Drawbacks of Mechanization and Automation 8 5.7 Employer-Employee Relationship 8 5.7.1 Proper Channels of Communication 8 5.7.2 Proper Mechanism for Conflict Resolution 8 5.7.3 Opportunity for Employee Motivation & Growth 8 5.8 Role of Management and Engineers 8 5.9 Organizational Control 8 5.9.1 Types of Control 8 5.9.2 Means of Control 8 5.9.3 Loyalty 8 5.9.4 Professionalism and Loyalty 8 5.10 Conflicts and Issues in the Organization and their Resolution 8 5.10.1 Susues in the Organization and their Resolution 8 5.10.2 Issues in the Organization and their Resolution 8 5.10.3 How to Resolve Conflicts and Issues 8
5.6.2 Drawbacks of Mechanization and Automation 8 5.7 Employer-Employee Relationship 8 5.7.1 Proper Channels of Communication 8 5.7.2 Proper Mechanism for Conflict Resolution 8 5.7.3 Opportunity for Employee Motivation & Growth 8 5.8 Role of Management and Engineers 8 5.9 Organizational Control 8 5.9.1 Types of Control 8 5.9.2 Means of Control 8 5.9.3 Loyalty 8 5.9.4 Professionalism and Loyalty 8 5.10 Conflicts and Issues in the Organization and their Resolution 8 5.10.1 Conflicts of Interest 8 5.10.2 Issues in the Organization and their Resolution 8 5.10.3 How to Resolve Conflicts and Issues 8
5.7 Employer-Employee Relationship 8 5.7.1 Proper Channels of Communication 8 5.7.2 Proper Mechanism for Conflict Resolution 8 5.7.3 Opportunity for Employee Motivation & Growth 8 5.8 Role of Management and Engineers 8 5.9 Organizational Control 8 5.9.1 Types of Control 8 5.9.2 Means of Control 8 5.9.3 Loyalty 8 5.9.4 Professionalism and Loyalty 8 5.10 Conflicts and Issues in the Organization and their Resolution 8 5.10.1 Conflicts of Interest 8 5.10.2 Issues in the Organisation and their Resolution 8 5.10.3 How to Resolve Conflicts and Issues 8
5.7.1 Proper Channels of Communication 8 5.7.2 Proper Mechanism for Conflict Resolution 8 5.7.3 Opportunity for Employee Motivation & Growth 8 5.8 Role of Management and Engineers 8 5.9 Organizational Control 8 5.9.1 Types of Control 8 5.9.2 Means of Control 8 5.9.3 Loyalty 8 5.9.4 Professionalism and Loyalty 8 5.10 Conflicts and Issues in the Organization and their Resolution 8 5.10.1 Conflicts of Interest 8 5.10.2 Issues in the Organisation and their Resolution 8 5.10.3 How to Resolve Conflicts and Issues 8
5.7.2 Proper Mechanism for Conflict Resolution 8 5.7.3 Opportunity for Employee Motivation & Growth 8 5.8 Role of Management and Engineers 8 5.9 Organizational Control 8 5.9.1 Types of Control 8 5.9.2 Means of Control 8 5.9.3 Loyalty 8 5.9.4 Professionalism and Loyalty 8 5.10.1 Conflicts and Issues in the Organization and their Resolution 8 5.10.1 Conflicts of Interest 8 5.10.2 Issues in the Organisation and their Resolution 8 5.10.3 How to Resolve Conflicts and Issues 8
5.7.3 Opportunity for Employee Motivation & Growth
5.8 Role of Management and Engineers 8 5.9 Organizational Control 8 5.9.1 Types of Control 8 5.9.2 Means of Control 8 5.9.3 Loyalty 8 5.9.4 Professionalism and Loyalty 8 5.10 Conflicts and Issues in the Organization and their Resolution 8 5.10.1 Conflicts of Interest 8 5.10.2 Issues in the Organisation and their Resolution 8 5.10.3 How to Resolve Conflicts and Issues 8
5.9 Organizational Control 8 5.9.1 Types of Control 8 5.9.2 Means of Control 8 5.9.3 Loyalty 8 5.9.4 Professionalism and Loyalty 8 5.10 Conflicts and Issues in the Organization and their Resolution 8 5.10.1 Conflicts of Interest 8 5.10.2 Issues in the Organisation and their Resolution 8 5.10.3 How to Resolve Conflicts and Issues 8
5.9.1 Types of Control 8 5.9.2 Means of Control 8 5.9.3 Loyalty 8 5.9.4 Professionalism and Loyalty 8 5.10 Conflicts and Issues in the Organization and their Resolution 8 5.10.1 Conflicts of Interest 8 5.10.2 Issues in the Organisation and their Resolution 8 5.10.3 How to Resolve Conflicts and Issues 8
5.9.2 Means of Control
5.9.3 Loyalty
5.9.4 Professionalism and Loyalty
5.10 Conflicts and Issues in the Organization and their Resolution
5.10.1 Conflicts of Interest
5.10.2 Issues in the Organisation and their Resolution
5.10.3 How to Resolve Conflicts and Issues
5.11 Regulation of Engineers through Professional Codes and Code of Ethics
5.11.1 Aspects of "Engineering as Social Experimentation"
5.11.2 Work Ethics
5.11.3 Professional Codes
5.11.4 Concept of Moral Responsibility and Official Responsibility (Responsibility vs. Obligation)8
Chapter 6 ETHICAL GOVERNANCE in BUSINESS AND GOVERNMENT
6.1 Ethics in governance9
6.2 Concept of Good Governance9
6.3 Probity in Governance9

		6.3.1 Measures to Achieve Probity	94		
	6.4	Accountability	94		
		6.4.1 Types of Accountability	94		
		6.4.2 Accountability v/s Responsibility	95		
	6.5	Aspects of Accountability	95		
		6.5.1 Openness and Transparency	95		
		6.5.2 Corruption	96		
		6.5.3 Whistle Blowing	99		
	6.6	Good Corporate Governance	101		
	6.7	Ethics in Design and Quality	102		
	6.8	Recommendations of 2nd ARC Report for improving ethics in governance	103		
	6.9	Consumer Protection Act-1986	104		
	6.10	The Consumer Protection Bill, 2018	104		
Chapter 7	PHIL	PHILOSOPHERS, ADMINISTRATIVE AND MANAGEMENT THINKERS110 – 12			
	7.1	Indian Moral Thinkers	110		
		7.1.1 Kautilya	110		
		7.1.2 Mahatma Gandhi	110		
		7.1.3 Dr. B.R Ambedkar	111		
		7.1.4 Dr. Amartya Sen	111		
		7.1.5 Dr. A.P.J. Abdul Kalam	111		
	7.2	Western Moral Thinkers	112		
		7.2.1 Socrates	112		
		7.2.2 Plato	112		
		7.2.3 Aristotle	113		
		7.2.4 Machiavelli	113		
		7.2.5 Karl Marx	113		
		7.2.6 Immanuel Kant	113		
		7.2.7 Jeremy Bentham	114		
		7.2.8 John Stuart Mill	114		
	7.3	Modern Industrial thinkers	115		
		7.3.1 Frederick Winslow Taylor	115		
		7.3.2 Henry Fayol	115		

(xii) Contents

9.3	Ethics	and Aesthetics	134			
9.4	Morals	s, Manners and Etiquettes	135			
9.5	Values	as Totally Objective	135			
	9.5.1	The Supernatural Theory	135			
	9.5.2	The Natural Law Theory	135			
9.6	Values	as Totally Subjective	135			
	9.6.1	Criticisms of the Supernatural Theory	135			
	9.6.2	Criticisms of the Natural Law Theory	135			
	9.6.3	Criticism of the Subjective Position	136			
9.7	Values	as Both Subjective and Objective: A synthesis	136			
9.8	Morality and the Law136					
9.9	Morality and Religion136					
9.10	The Cost-Benefit Analysis, or End-Justifies-the-Means, Approach—A Problem for Utilitarianism137					
9.11	Criticis	sms of Kant's Duty Ethics	137			
	9.11.1	Consistency and Conflicts of Duties	137			
	9.11.2	The Reversibility Criterion	137			
9.12	Detern	ninism	137			
	9.12.1	Meaning of Determinism	137			
	9.12.2	Fatalism and Hard and Soft Determinism	137			
	9.12.3	Indeterminism	138			
Code	of Ethi	cs as Enumerated by Various Organization143 –	148			
Gloss	ary of l	Engineering Ethics149 –	156			
Additi	onal Pr	ractice Questions157 –	166			

Understanding the Basic Concepts of Ethics and Values



INSIDE

- Epistemology
- Values
- Role of Socialization in the Development of Values
- Moral Values
- Ethics and Ethical Values
- Ethical and Moral Dilemma
- Ethical and Moral Autonomy
- Ethics vs Law

OVERVIEW

The given chapter deals in detail with the basic understanding of the concepts of values, morals and ethics. It also talks about various ethical theories in depth. Then, it culminates into the concept of ethical and moral autonomy.

After going through this chapter, the reader would have a crisp understanding of the basic concepts and theories related to values, morals and ethics.

1.1 EPISTEMOLOGY

It is the philosophical study of the nature, origin and limits of human knowledge. It is derived from the greek word 'episteme' i.e., knowledge and 'logos' i.e., reason.

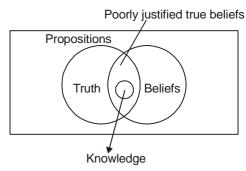
It is referred to as the theory of knowledge, especially with regard to its methods, validity and scope, and the distinction between justified belief and opinion.

It addresses the questions:

"What is knowledge"?

"How it is acquired"?

"What do people know"?

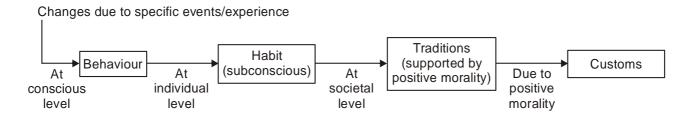


1.1.1 OBJECTIVIST EPISTEMOLOGY

It assumes that reality exist independent or outside of the individual mind. Objectivist seeks methods to test reality by collecting and analysing evidence to explore assetions, corroborate claims, and provide correspondence with the real world.

1.1.2 CONSTRUCTIONIST EPISTEMOLOGY

It rejects the idea that objective truth is waiting to be discovered. it assumes that truth comes into existence in and out of one's engagement with the



Example 3

Which of the following statement is corect with respect to the "societal development"?

- (a) Behaviour grows into habit, habits into tradition and tradition becomes custom.
- (b) Customs grow into mores and mores grow into custom.
- (c) Behaviours grow into customs and customs grow into traditions.
- (d) Folkways grow into tradition and traditions grow into customs.

[ESE-2019]

Ans. (a)

1.6 ROLE OF SOCIALIZATION IN THE DEVELOPMENT OF VALUES

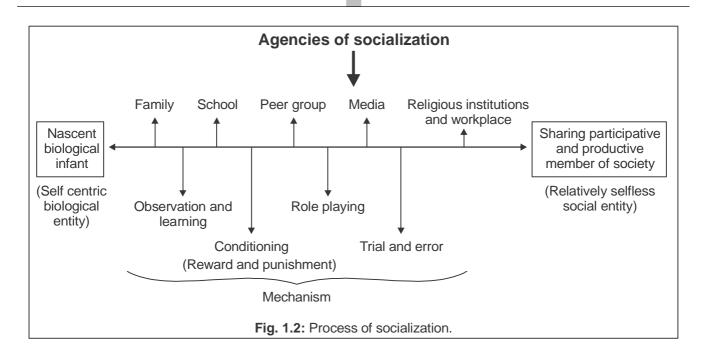
Socialization is a continuous process whereby an individual acquires a personal identity and learns. The norms, values, behaviour and social skills.

The process of socialization can be classified as follows:

 Primary socialization: Primary socialization is the stage that occurs from birth through adolescence. It is guided by family, primary caregivers, teachers, coaches, religious figures and peer groups. Family has a very significant role in primary socialization as it is the first institution which shapes a nascent biological entity. Hence, it is the values imparted by the family which play a major role in shaping basic character.

 Secondary socialization: It occurs throughout life in which one encounter groups and situation out side the purview of primary socialization institutions.

It includes college, university, work place and other institutions becoming a part of life experience.



A social practice might have been considered moral because mistakenly insufficient evidence was discovered and brought forward in an intelligent way to effect the understanding of people by highlighting probable risks.

eg. child marriage, practice of sati etc.

(ii) Critical morality: It is the critical analysis of social institutions and social practices through a rational perspective based on social experience from the past and reason. Critical morality enjoys primacy in conceptual analysis of morality. e.g., abolition of child marriage, abolition of sati etc.

[Note: The difference between positive and critical morality based on emotion and reason is more relative than being absolute. Because critical morality once may become positive morality due to coming of new facts.]

1.8 ETHICS AND ETHICAL VALUES

1.8.1 Defining Ethics

The term ethics is derived from Greek word 'Ethikos', meaning habit or custom. Also related with Greek word 'Ethos', meaning character or habit.

The term 'Ethikos' is an adjective cognate with 'Ethos' i.e. having the same origin.

Ethics is a branch of moral philosophy. The term philosophy originated from two Greek root words - 'philo' meaning love or attraction and 'sophos' meaning knowledge or wisdom. Moral philosophy deals with study and inquiry of moral theories, questions and claims.

Ethics, being a branch of moral philosophy, deals with values which have societal / organization sanction (not personal sanctions). In restricted sense it can be termed as science (not a pure science) which aims at rational inquiry and justification of fundamental questions of what is good, what is bad, what is right and what is wrong, from the society or organisation perspective.

Ethics is not individualistic rather it is societal in nature.

Ethics can be defined as 'morality in action'. As Ethics aims at establishing a system of rules or codes to regulate individual, organisational or societal behaviours and actions.

1.8.2 Defining Ethical Values

Ethical values are those values which are upheld by a

society or organisation for regulating the bahaviour/ actions of its members for overall well being.

Ethical values differ from moral values in terms of nature. Moral values are individualistic based on conscience, whereas ethical values are society or organsiation based.

Ethical values help in making preferences/choices in decision making which are imperative for proper functioning and progress of a society or an organisation.

1.8.3 Classification of Ethical Values

Ethical values can be classified in the same fashion as values are being classified. On the basis of their nature, scope, expression, persistency in time frame and directionality.

Example 5

The basic ethical principle of 'Beneficence' states that

- (a) all our thoughts and actions must be directed to ensure that others benefit from these thoughts and actions
- (b) our actions must result in the least harm to the others
- (c) we should not impose our views on others
- (d) our actions must be fair to everyone

[ESE-2020]

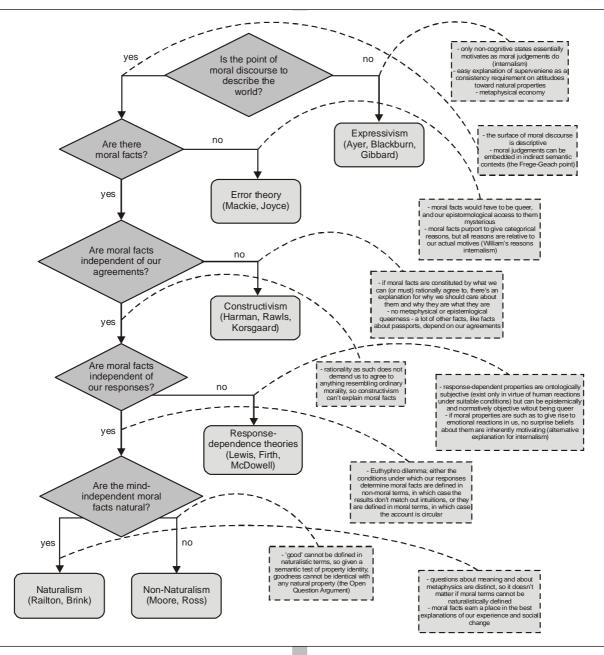
Ans. (a)

Sol. The basic ethical principle of 'Beneficence' states that all our thoughts and actions must be directed to ensure that others benefit from these thoughts and actions.

1.8.4 Core Ethical Values

Ethical values which are fundamental and foundational in nature are called core ethical values.

- (i) Trust Worthiness
- **(a) Honesty:** The quality of being honest; uprightness and fairness.
 - Honesty in communication: It is about the intent to convey the truth to the best of one's knowledge and available facts to avoid misleading and deceive. There are three dimensions to it.
 - Truthfulness: It is about not intentionally misrepresenting the facts. Intent is the crucial distinction between truthfulness and truth itself.



(ii) Normative Ethics

Normative refers to **what ought to be** ? Rather than what is?

Ethics can be termed as a normative science contrary to pure science.

A pure science is based on facts, empiricism, universal principles and pure reason.

Alternatively, a normative science is based on value judgements rather than factual judgements. Value judgements are subjective rather than being objective like facts based judgement.

Therefore normative ethics deals with the enquiry of good, bad, right or wrong conduct based on what ought to be the good or right conduct i.e., morally ideal condition.

Normative ethics can be further subdivided as follows:

(a) Virtue ethics (Keyword - Character): Virtue refers to a character of high moral standards.

Virtue ethics define an act as a morally ethical act simply because it confirms to the high moral character rather than being a duty imperative (Deontology, Immanuel Kant) or due to the consequence of the act (Consequentialism, Jeremy Benetham & J.S. Mill).

e.g., According to virtue ethics, helping others in a time of need is moral/ethical because it is an act of charity or benevolence.

A virtue is an excellent trait of character. It is a disposition, well entrenched in its possessor.

- 1. Even if inequality is created in the society, it must be for the benefit of all. (might not be the same).
- Every person must enjoy most extensive amount of freedom, compatible with the others. (The 2nd point seems to be similar to concept of Duty & Rights ethics) (I have my rights, but also have a duty not to violate other's rights.)

1.9 ETHICAL AND MORAL DILEMMA

1.9.1 Defining Ethical Dilemma

"An agent regard himself as having **ethical** reasons to do each of the two actions, but doing both actions is not possible. Whatever action he does will render him ethically wrong."

This problem of decision making in terms of ethics is called ethical dilemma.

In ethical dilemma, a person is undecisive as which **ethical code** to follow. Adhering to one **ethical code** leads to transgressing other **ethical code**.

1.9.2 Defining Moral Dilemma

"An agent regard himself as having **moral** reasons to do each of the two actions, but doing both actions is not possible. Whatever action he does will render him morally wrong.

This problem of decision making in terms of morality is called Moral dilemma.

In moral dilemma, a person is undecisive as which moral value to follow. Adhering to one moral value leads to transgreesing other moral value.

In general both ethical and moral dilemma are used interchangeably but there is a difference.

"Ethical dilemma relocates moral dilemma away from an individualistic reflection on imperatives, utility or virtue into a social space."

1.9.3 An Engineering Perspective

"A traditional education does little to prepare you for morally courageous action... our obligation as individuals to speak out and correct wrong doing and injustices.... we have created an entire class of people to whom we outsource the need to speak out... [but] if you are part of that team, however small and unsuspecting your role, and you have a conscience, you bear partial responsibility for that outcome. With increasing specialization and complexity, the only truly effective police are those that have the expertise and those that are working on the inside... you can't legislate

morality", Marc Edwards.

This quote best describes the significance of ethical and moral decision making from an engineering perspective alike any other profession and its members.

An engineer has to face a number of day to day challenges in his profession, a significant number of which may be related to ethical and moral dilemma. The issues concerning an engineer as a professional can be discussed as follows.

- 1. **Micro ethics:** It deals with ethical issues related with individual professionals and internal relations of the engineering profession. *e.g.*, *health*, *safety*, *bribes*, *gifts*, *integrity*, *fair credit etc*.
- 2. Macro ethics: It deals with ethical issues concerned with collective, social responsibility of the engineering profession and societal decisions about technology. e.g., Sustainable development, product liability, human cloning, nanoscience and nanotechnology.

Traditionally, microethical issues were solely considered as far as ethics and ethical decision making was concerned in engineering profession.

The modern view adopts a holistic approach by integrating microethics and macroethics and even macroethics dominating the issue.

1.10 ETHICAL AND MORAL AUTONOMY

In philosophy, autonomy is an individual's capacity for self-determination or self-governance.

Ethical / moral autonomy, according to **Immanuel Kant**, is the capacity to deliberate and to give oneself the moral law, rather than merely heeding the instructions of others.

Moral autonomy can be construced as the aim of all ethical and moral deliberation and enquiry. It calls for internalization of moral code in order to have minimum external rules/regulations. Therefore, it aims at flourish of human being for a greater common well-being.

Kant further developed the idea of moral autonomy as having authority over one's decisions/actions, rather letting the principles by which one make decisions be determined by others (eg. political leaders, pastor or society etc.)

Kant connected the idea of self-government to morality. At the same time, moral autonomy is not about freedom to choose any moral or immoral position, rather it calls for being self-aware and practice to incoporate absolute or ultimate moral truth of well being of all.

Example 10

Statement (I): What is legal may not always be ethical. **Statement (II):** Ethical standards and the law, share the same theme, i.e., what is permissible and impermissible.

[ESE-2018]

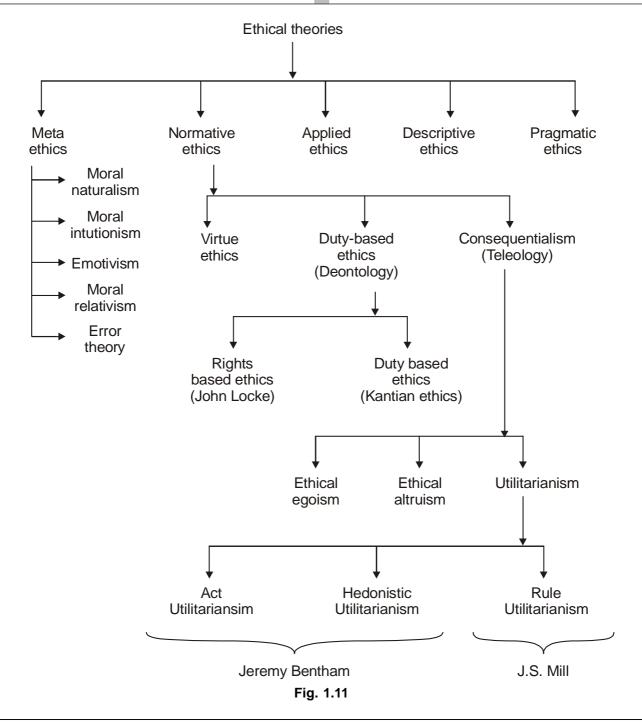
Ans. (b)

Sol. First statement is correct. Example - South Africa's apartheid regime. Social segregation

of Blacks was allowed legally but it was unethical.

Second statement is also correct. Ethical standards and the law share a common theme of distinguishing between what is permissible and impermissible in a given set of circumstances but the two of them are by no means interchangeable.

Hence, the answer is (b).



Questions

- 1. Consider the following statements regarding definition of 'moral':
 - Being or acting in accordance with standards and precepts of goodness
 - Arising from conscience or a sense of right and wrong
 - A concisely expressed precept or general truth, a maxim
 - 4. The principles of conduct governing an individual or a profession, standards of behaviourWhich of the above statements are correct?
 - (a) 1, 2, 3 and 4
- (b) 1, 2 and 4 only
- (c) 3 and 4 only
- (d) 1, 2 and 3 only
- 2. Which is/are the levels of study of ethics?
 - 1. At the level of individual
 - 2. At the level of engineering
 - 3. At the level of Government
 - 4. At the level of society
 - (a) only 1, 2 and 3
- (b) only 2, 3 and 4
- (c) only 1, 2 and 4
- (d) All of the above
- **3.** Which of the following does not constitute the foundation of ethics?
 - (a) Honesty
- (b) Justice
- (c) Integrity
- (d) Courtesy
- **4.** What refers to situations in which moral reasons come into conflict, or in which the application of moral values is problematic?
 - (a) Silo mentality
- (b) Preventive ethics
- (c) Ethical issues
- (d) Moral dilemmas
- **5.** Ethics is synonymous to .
 - (a) Morality
- (b) Money
- (c) Standards
- (d) Conduct
- 6. The general and abstract concepts of right and wrong behavior culled from philosophy, theology, and professional societies

- (a) Ethics
- (b) Morals
- (c) Etiquette
- (d) Law
- The ethical dilemma of choosing between two rights refers to
 - (a) Choosing between the lesser of two evils
 - (b) Deciding which of two employee rights is the most important
 - (c) Deciding to offer a bribe or lose out on an important opportunity
 - (d) Choosing between the two types of sexual harassment
- **8.** The cultural, organizational, community, interpersonal, or personal dynamics that should be considered when making ethical and professional issues are referred to as:
 - (a) Personal considerations.
 - (b) Contextual considerations.
 - (c) Environmental considerations.
 - (d) Ethical considerations.
- **9.** Which of the following parameters are evaluated in definition of "Moral Agents" ?
 - (a) whose actions and intentions can be morally evaluated
 - (b) whose personal character can be morally evaluated
 - (c) Both of the above
 - (d) None of the above
- **10.** In 'Normative Enquiry'; norms are to be identified for which of the following reasons?
 - (a) What is the reason behind work conflict?
 - (b) Which is the most desirable standard of behavior?
 - (c) What are the errors which resulted in unintended failures?
 - (d) What is the best principle in work ethics?
- **11.** Ethics is needed for practicising engineers because:
 - (a) Every decision engineer makes are not settled by rules.