

**AIR-1 Notes**

Pages: 72

**Handwritten notes by**



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## Engineering Ethics

- 1) Basic concepts - Morals, Ethics, values and Attitudes (MEVA)
- 2) Theory of ethics
- 3) Code of conduct and code of ethics
- 4) IPR and Plagiarism
- 5) Ethical dilemma and ethical issues
- 6) Corruption and whistleblower
- 7) Miscellaneous Topics
  - (a) Environmental Topics
  - (b) Business Ethics
  - (c) Media Ethics etc.
- 8) Principles and Values that guide Engineering Ethics.

### Relationship b/w

- 1) Science
- 2) Ethics
- 3) Engineering
- 4) Technology

→ Science is a body of systematized knowledge gathered by observing and measuring events.

→ Outstanding features of science:

- 1) Observation - Studies events of interest with as much precision and accuracy as possible.  
to observe  
At definite  
Cause-effect  
relationship  
→ Science permits controlled observation i.e. experimentation
- 2) Measurement - assignment of numbers to objects and events according to some rule.

→ To achieve definite cause-effect relationship:

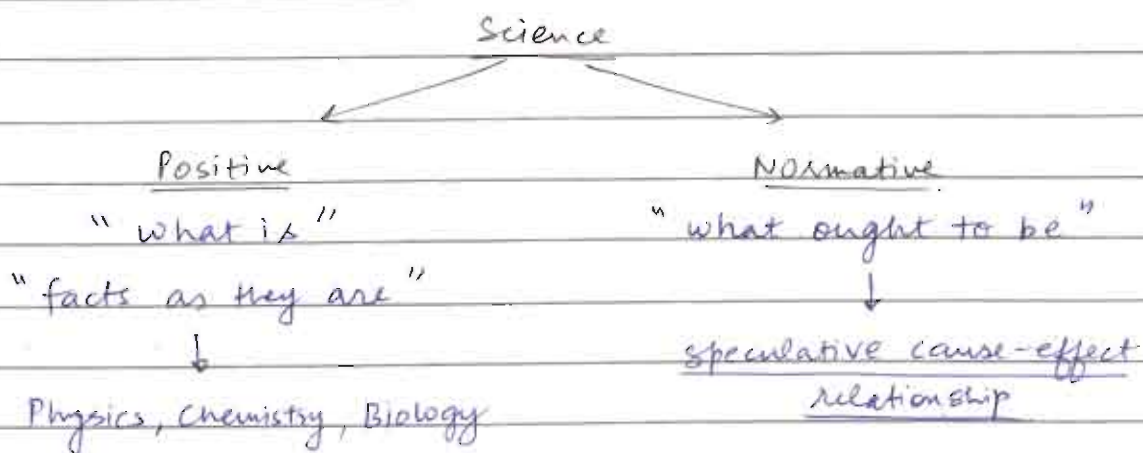
- 1) Replication
  - 2) Verification
  - 3) Skepticism
- } Objectivity <sup>assumes</sup>

→ Subjectivity leads to suspect cause-effect relationship or speculative

⇒ Engineering is transforming science to create products for human comfort and to create systems that maximize human efficiency and minimize human labour.  
↳ application of science for practical purpose

⇒ Engineering is about process and Technology is about product otherwise there is not much difference b/w the two

⇒ Ethics is a normative science that enables the individual to distinguish b/w right and wrong and follow the path of righteousness.



⇒ Why should an engineer study ethics?

- 1) Public Service ⇒ Public Welfare ⇒ Ethics

2) Ethical dilemma } ⇒ eg → Employer Loyalty v/s Public Loyalty.

↳ how to resolve.

⇒ MEVA → Morals, Ethics, Values and Attitudes

→ MEVA are mental constructs that serve as an instrument for behaviour regulation.

↳ a human without ethics is like a beast loosed on the world (Camus)

⇒ Behaviour regulators

- ↳ Thoughts
- ↳ Emotions

⇒ How MEVA serves as an instrument for behaviour regulation

1) When our behaviour violates our morals we experience "GUILT" (Emotion)

something which I dislike

Guilt is an aversive state that an individual experiences when there occurs moral transgression (अपराध)

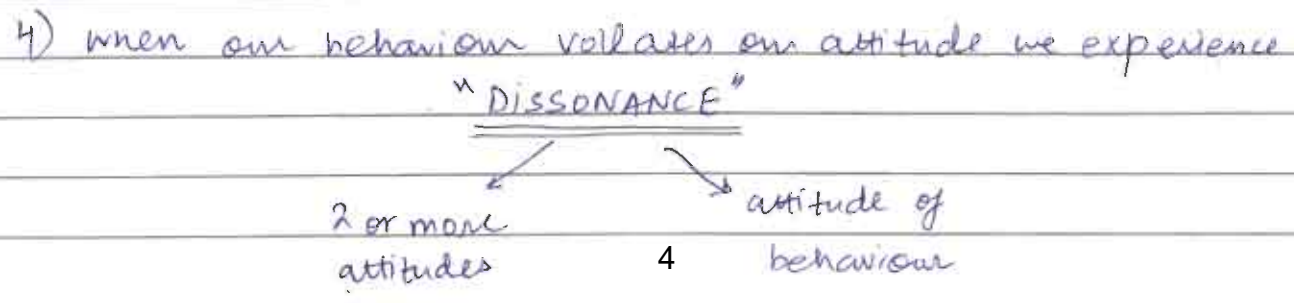
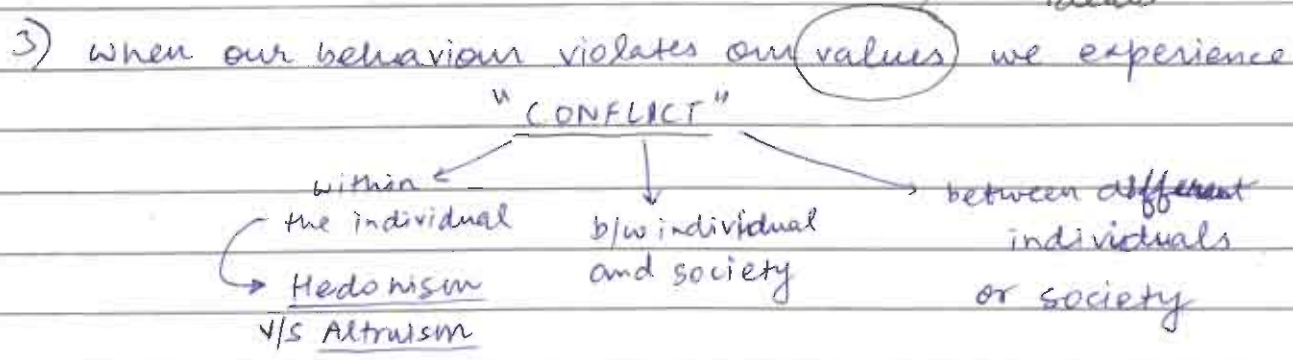
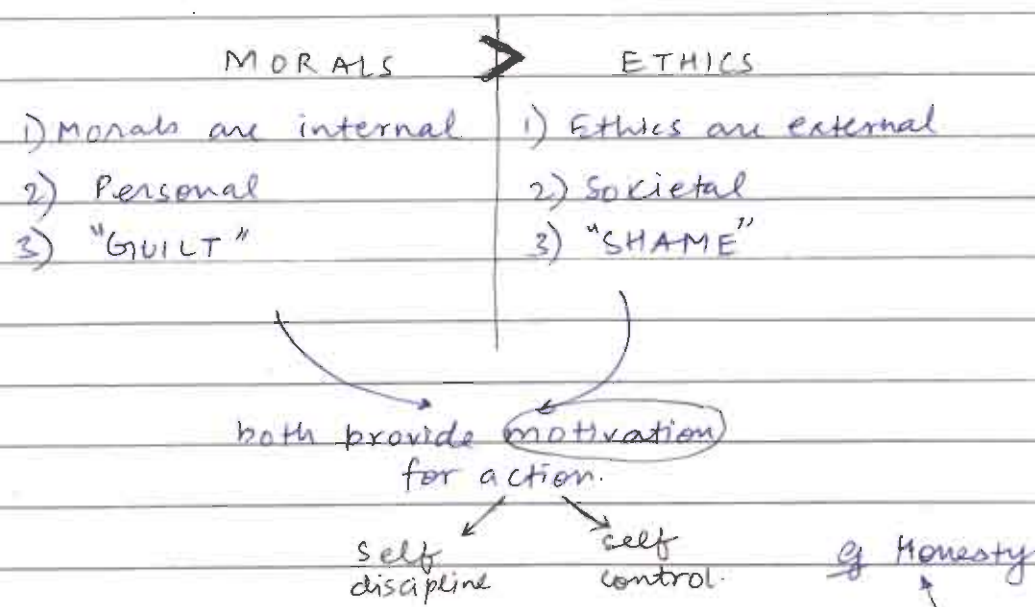
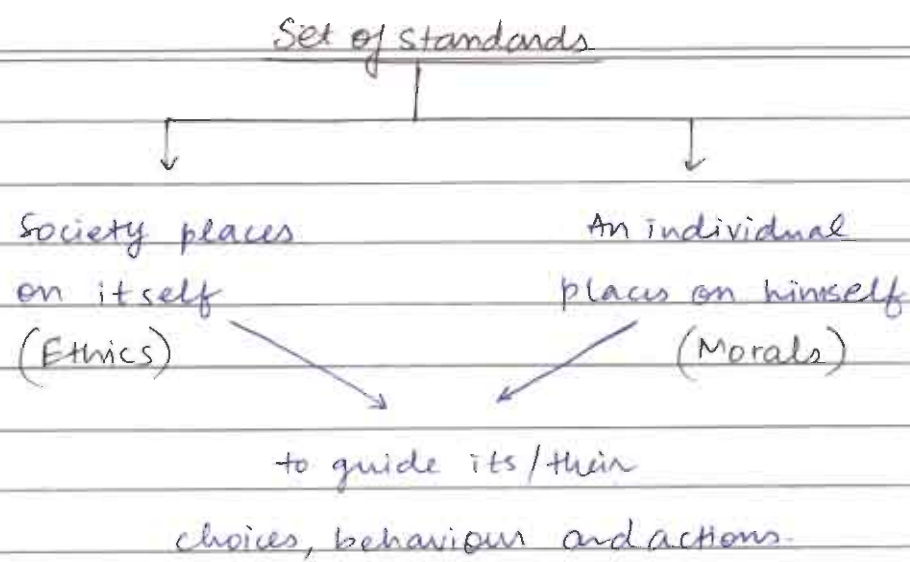
2) When our behaviour violates our ethics we experience threat of social ostracization. (outcasted from society)

"SHAME"

⇒ Morals are far stronger and powerful behaviour regulator as compared to ethics.

⇒ External forces v/s Internal forces.

Hedonism - physical pleasure  
 Altruism - selfless service to society.



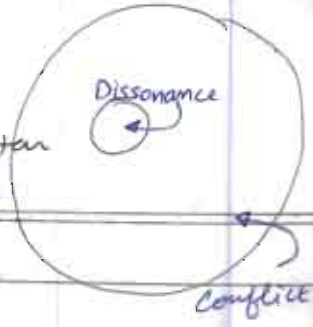
~~before~~

→ abstract

Because I value music

↳ therefore I have a positive attitude towards guitar

concrete



Mashmallow experiment ⇒ Emotional Intelligence.

- ↳ Life is all about how to delay gratifications.
- ↳ succumb to temptations.

→ something which we want to avoid.

⇒ DISSONANCE → is a negative drive state that an individual experiences when there occurs incompatibility b/w his attitudes or b/w his attitude and behaviour or discrepancy b/w his attitude and behaviour. (discrepant v/s congruent).

⇒ Why does MEVA often fails to act as a self regulatory mechanism

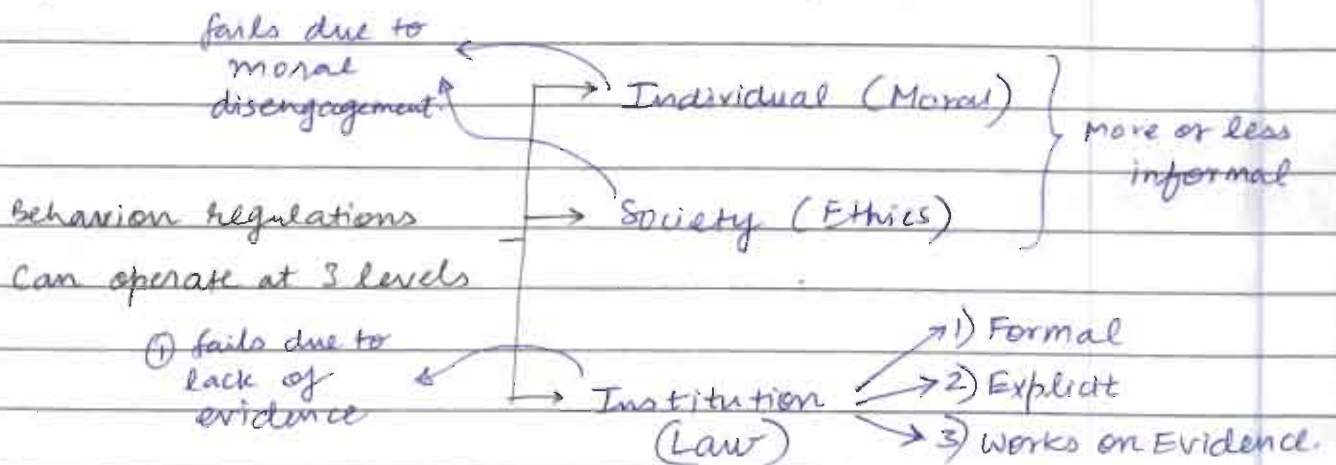
- 1) Selective perception and interpretation of ~~his~~ ones actions
- 2) Justification of ones actions.

{ MORAL  
DISENGAGEMENT }

→ Selective ~~etc~~ activation and deactivation of morals and values.

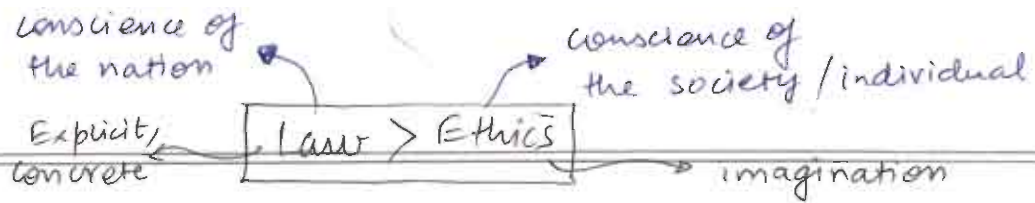
→ Selective perception of information and facts.

⇒ Why do we need laws when MEVA is in place



→ What is lawful may not be ethical.

→ What is ethical may be unlawful / illegal.



→ Mind is abstract, brain is concrete.

⇒ Moral arch of the universe bends at the elbow of justice.

⇒ How to ensure that MEVA becomes an effective tool for behavior regulation

- ① Reward pro-social behavior.
- ② Punish anti-social behavior.
- ③ These rewards and punishment should be fair, systematic and consistent.
- ④ Seeing the role model being rewarded/punished can also change behavior.
- ⑤ Increasing the perceived probability that on the display of undesired behavior one will be ~~caught~~ caught, punished when caught and punishment will be severe and no one will buy one justification.

### Structure of MEVA - Building Blocks

- mind
- may or may not be factually correct.
- (a) Cognitive → beliefs, opinions and ideas held by the individual towards ["knowing"] the MEVA object. (abstract)  
(Morals, Ethics, values are all abstract) [Attitude is an exception]
- (b) Affective → emotions and feelings generated wrt MEVA object  
→ provides energy for action  
→ makes MEVA an evaluative tool  
→ Hard to master as compared to cognition.  
→ one approaches MEVA object with mixed feelings (eg. Eros, Thanatos)
- heart

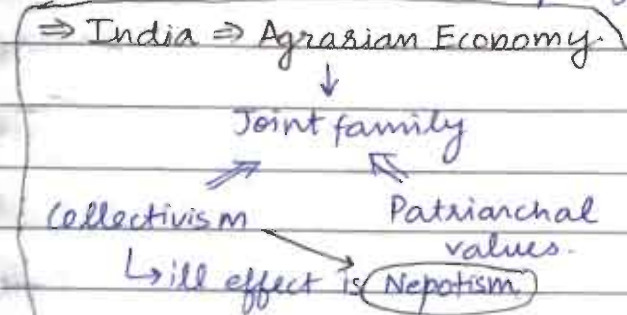
(c) Action tendency components - Our readiness to respond in specific ways to MEVA object ↳ does not imply an  
 ↳ predisposition (अवस्था) to act in specific actual response ways.

- ⇒ These 3 components of MEVA are generally consistent with one another and as well as the behaviour displayed.
- ⇒ Our thoughts, beliefs, action tendency and ultimate action should be consistent.

### Nature of MEVA

#### 1) Culture specific and Universal

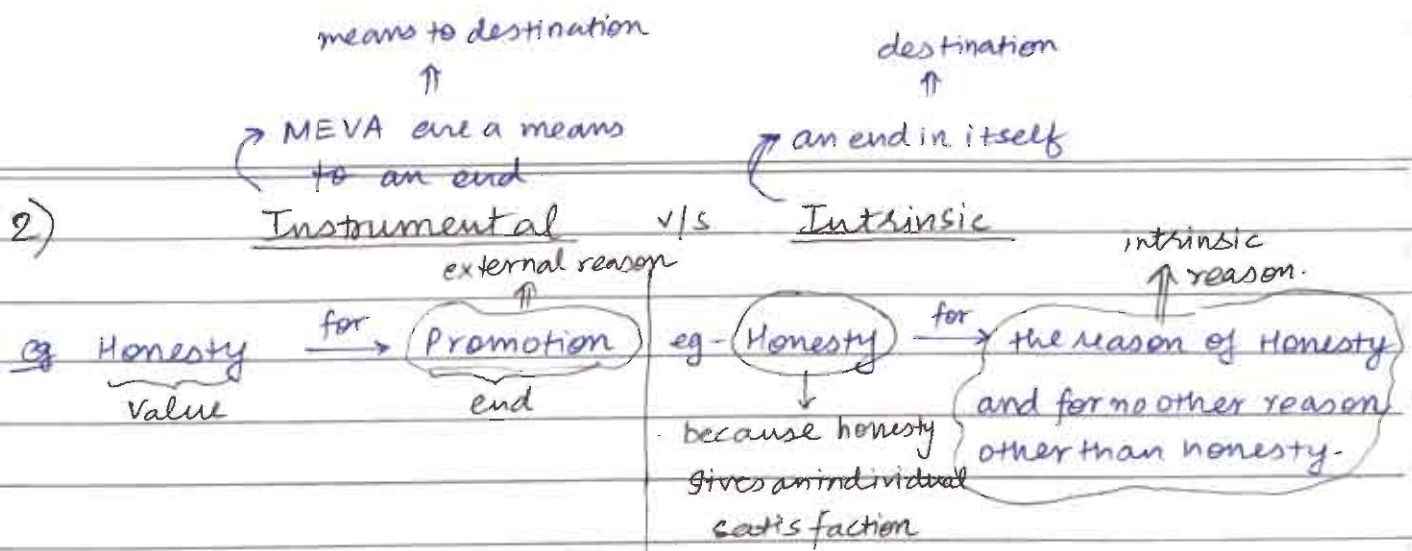
↳ each culture is unique.  
 ↳ Challenges faced by the people of a given culture are also unique.  
 ↳ Therefore, to meet these challenges MEVA should be culture-specific.



Promotes brotherhood and growth of society

↳ Generosity, Voluntary Donation  
 eg - Patriotism, Kindness, commitment  
 ↳ Every society aims to achieve Social integration  
 ↳ All values which promote brotherhood and bind people together will be universal.  
 ↳ Entity common to the human race is relatedness → Empathy  
 ↳ compassion, integrity  
 ↳ Industrial economy  
 ↳ Nuclear family ⇒ Individualism





→ What ~~was~~ is intrinsic may become instrumental and something which is instrumental may become intrinsic.

→ Something which is instrumental remains instrumental even when it is no longer tied with the original motive.

3) Absolute v/s Relative

→ Means are independent of ends and ends cannot justify means

→ A right is a right even when nobody does it, a wrong is a wrong even when everyone does it.

→ Context independent.

→ Deontological approach

↓  
Duty bound

→ ends justify the means or all that ends well is well.

→ i.e. consequences determine the morality of an action.

→ focus should be on greatest good of the greatest number.

↓  
Extreme state → Majoritarianism

→ context dependent

→ Teleological approach

↓  
end bound.

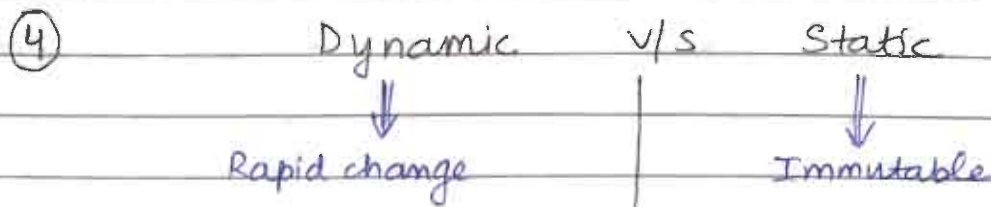
Relativism → Teleological

→ Consequentialism

→ Utilitarianism

↳ Every thing should be just in value of utility it holds.

MEVA is neither dynamic nor static, it is relatively permanent → difficult to change MEVA once established.



Argument → Values help us to adjust in our environment and environment is ~~not~~ dynamic, so should values not be dynamic.

→ Statement (1) → With changing environment, what changes is behaviour and not the underlying MEVA.

→ i.e. the modes of expression of values change and not the value themselves.

→ Different behavioural modes of expression ensure uniqueness of an individual.

→ Statement (2): MEVA provides the basis for our identity.

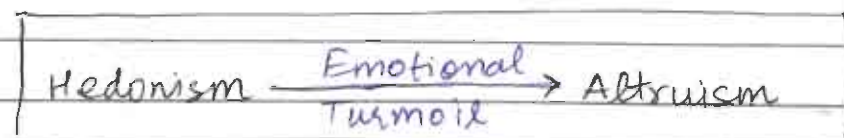
→ Identity gets formed after the investment of considerable time, labour and energy.

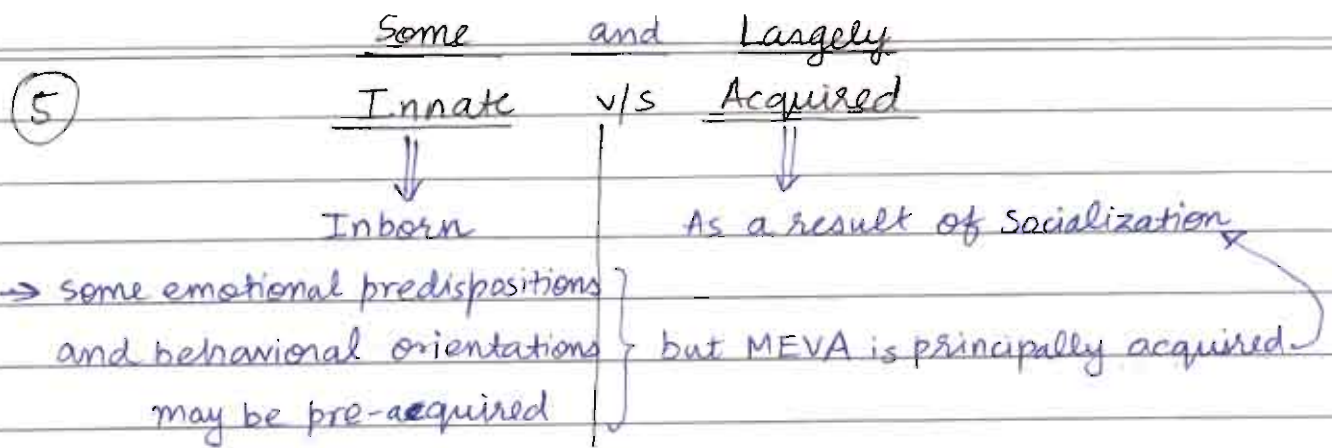
→ Because of this person is likely to resist any change in his identity ⇒ Relatively permanent nature of MEVA.

→ Statement (3): Our identity provides us with a framework to deal with the objects around us.

→ The frame of reference given to us by our identity is likely to change when individual undergoes identity transformation.

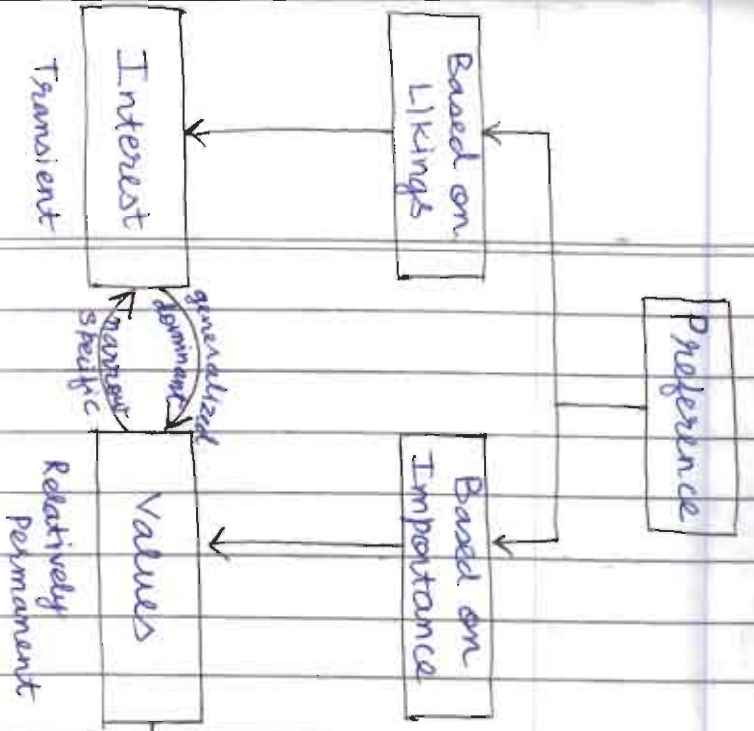
→ Thus it puts the individual in emotional turmoil and no individual wants that ⇒ Relative permanency.



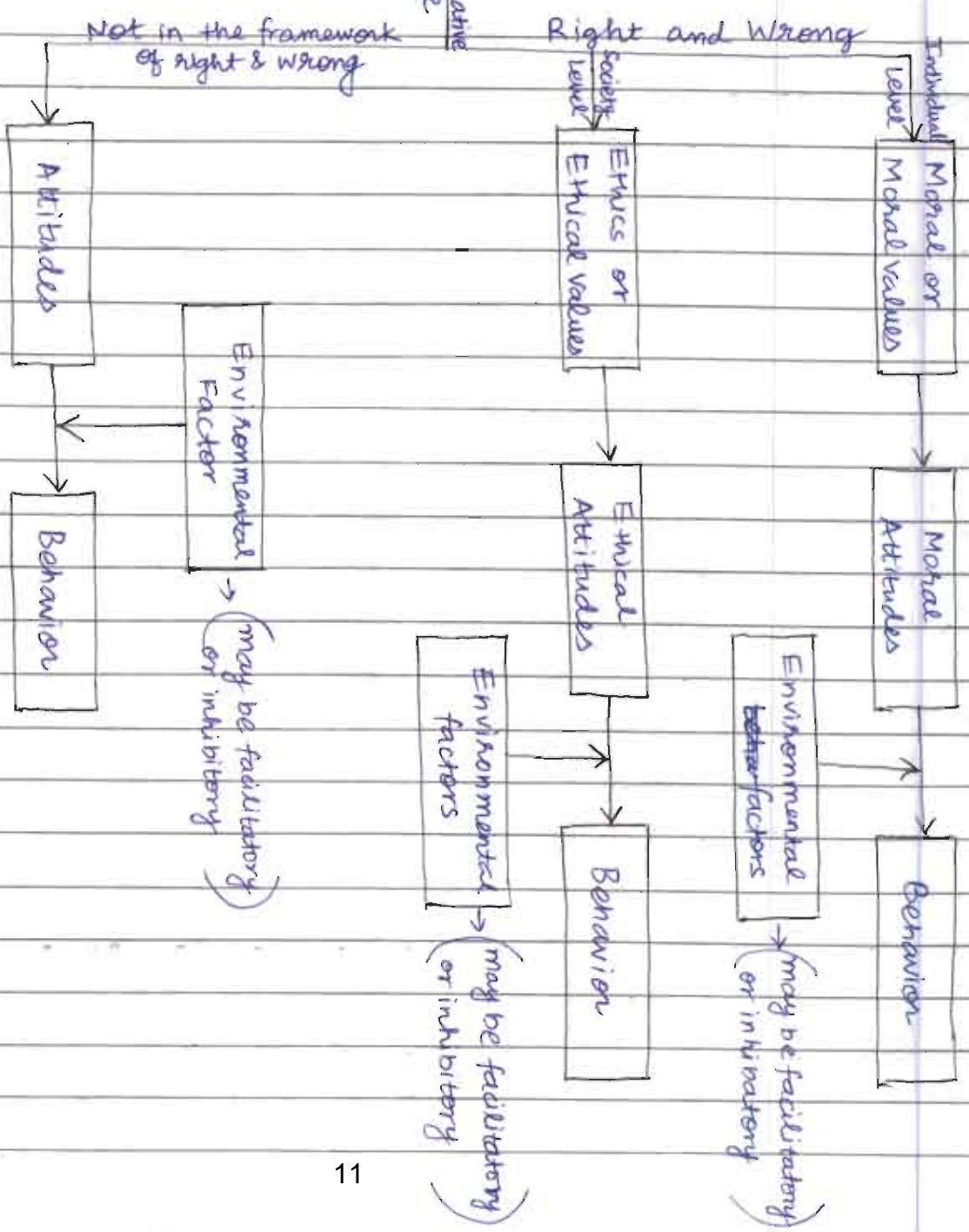


⇒ Inference from flowchart

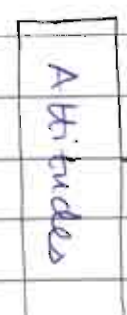
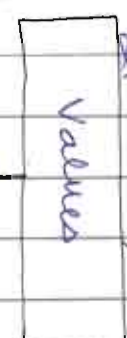
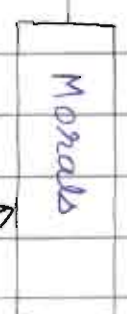
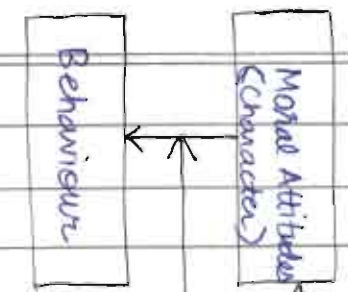
- 1) values are general determinants of behavior and attitudes are specific ~~behavior~~ determinants of behavior.  
i.e. <sup>attitude</sup>~~behavior~~ predicts behavior better than values.
- 2) Every attitude may convert into behavior provided environmental factors are facilitatory. If the environment is inhibitory generally a positive attitude may not result into behavioral action. [It is possible that moral/ethical attitude prevail over environment]
- 3) Everything is not black and white (right and wrong) there exist shades of grey. eg - Aesthetic attitude is neither moral nor ethical.



RELATIONSHIP BETWEEN MORALS, ETHICS, ATTITUDES AND BEHAVIOR



INTERRELATIONSHIP  
BETWEEN  
MEVA



Individual Right and wrong

Societal Right and wrong

Objectified

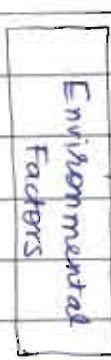
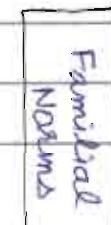
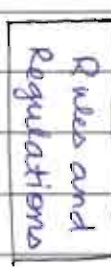
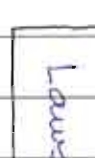
Personal

Societal

generally give rise to

Explicit and Formal

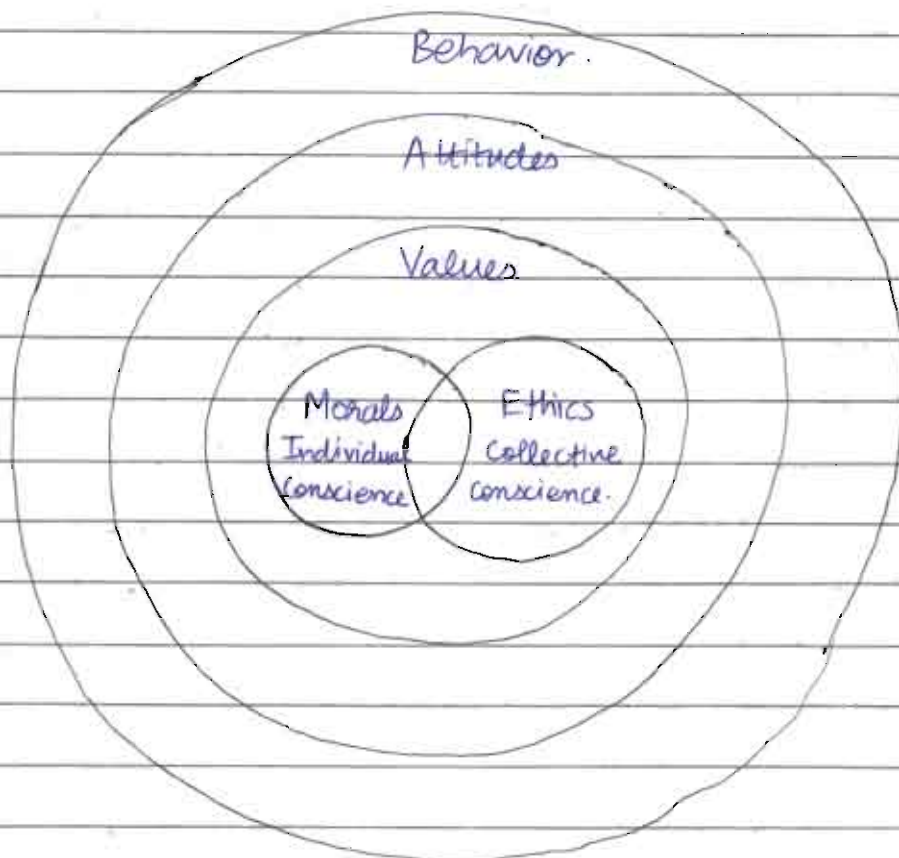
Implicit and Informal



(May be Facilitatory or Inhibitory)

## Inference from flowchart

- 1) When a single man leads to a social change → bottom up.  
When government " " " " → top down.
- 2) Ethics may change into morals and morals may change into ethics.
- 3) Cost-Benefit analysis governs who prevails over morals or ethics when they contradict each other.
- 4) Ethics is broad while Norm is specific.
- 5) Similarly laws are broad and rules and regulations are specific.



## ⇒ Development of MEVA

→ MEVA developed as a result of socialization.

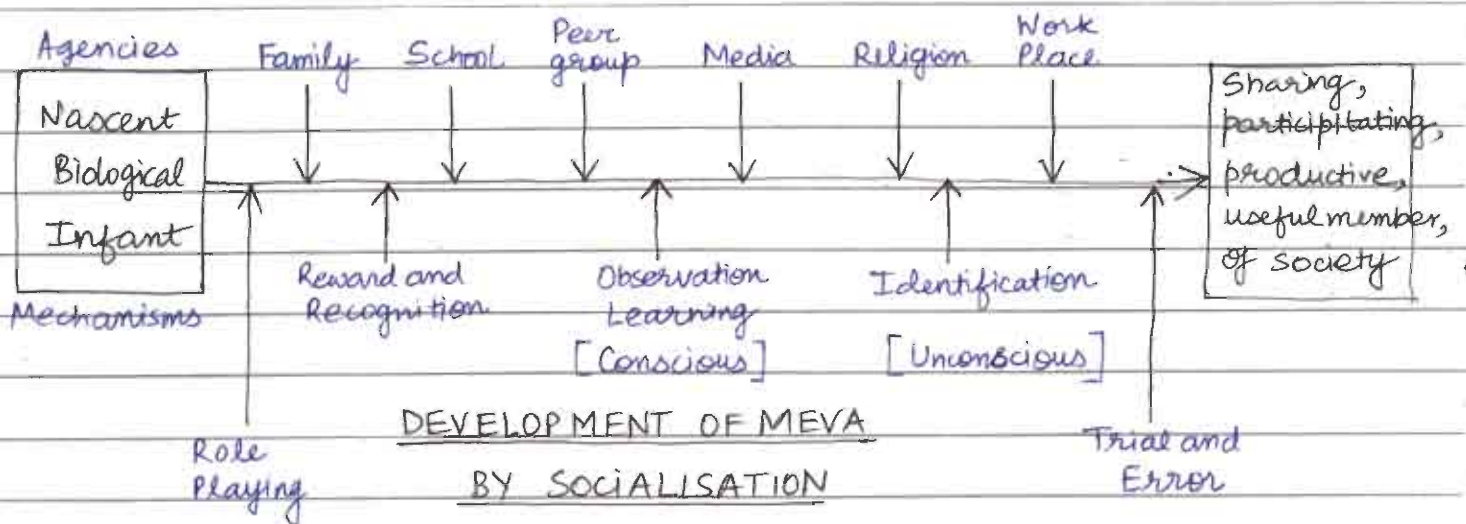
→ Socialization - It is a life long process of shaping an individual's social tendencies so that he becomes and remains a useful and productive member of it's society.

OR

→ Socialization - is the process by which:

(a) Culture is transmitted from 1 generation to next.

(b) Individual develops his personality by learning the contents of it's culture. Personality is culture transmitted into an individual while culture is personality of individuals combined.



An individual  
guided by  
self preservation  
~~guide~~  
drive

Conversion  
by Socialisation.

→ A relatively  
selfless  
individual.