



CV0001

Date

No.

Section A

- MCQ 1.) C
2.) C
3.) B
4.) B
5.) C
6.) B
7.) B
8.) C
9.) C (check www.worldometers.info)
10.) C

Short Ans

11.)
-) De-materializing = Reducing the materials required through efficient design techniques, while keeping the core functionality intact.

-) Durability = Select materials with high durability

-) Longevity = Select materials & design style which enhance durability & enable longer use of product

-) Recyclability = Use materials that can be recycled at end of life

-) Multi-functionability = Design for a variety of uses for the customer, reduce the need for upgrade

-) Disassembly = Design for product for easy disassembly for repair, recycling, & reuse.

12.) Social, with increase in energy usage \rightarrow more demand and same supply of energy, which means energy will become more expensive. Thus, maybe not everyone will be able to afford energy which means there will be a gap in the society.

Economic, as energy becomes more expensive all other economic aspects will also change.

Environmental, Unwise use of energy could lead to environmental damage. For example, climate change due to global warming \rightarrow mostly due to greenhouse gases from burning fossil fuels and deforestation.

T/F 13.) True

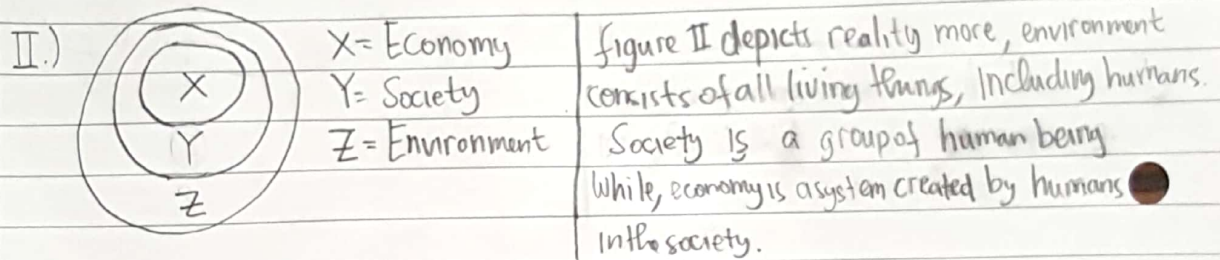
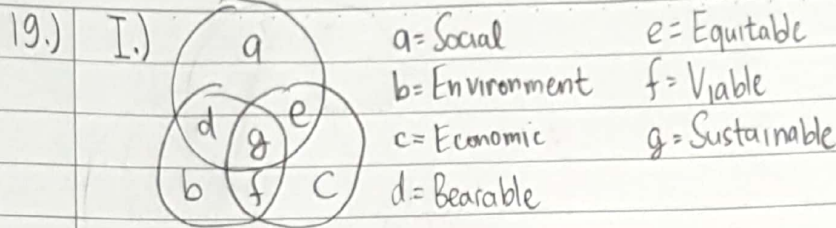
14.) True

Fill in the blanks 15.) Carrying Capacity

16.) Failure

17.) Sustainability

18.) Population, Affluence, Technology



Section B

- 1.) a.) A is for industry, because it is near the airport. Residential area should not be near the airport because of safety and noise concern.
 c) is for high rise residential and B is for low rise residential. High rise residential is usually equipped with the necessary everyday needs store (e.g 7-eleven) so there is no need for it to be near the Regional Centre. On the other hand, low rise residential needs to go to RC for those necessity.
- b) B → CBD → Airport
 5m + 10m = 25m
- c.) Provide 2 way road for B to CBD, so it is more convenient for resident at B to go to the CBD.
 → Close the road from RC to the airport. It is unnecessary to have this road because it is faster to take the route RC → CBD → Airport.
 → Provide a road from A to the airport. Maybe for the industry (if located at A), it may be easier to transport materials to the factory from the airport.
- 2.) a.) Change in lifestyle & Inaccurate projections
 b.) Eco-driving & Fuel Additives
 c.) Tie a place's history to its population and culture & reuse structure that are already present.
 d.) Pocket park & Rooftop garden
 e.) Land Reclamation & Floating Platforms
- 3.) a.) Telecommuting
 b.) Road pricing with ERP
 c.) Car pooling with Uber.



Section C

- 1.) A
- 2.) D
- 3.) B → not sure
- 4.) D
- 5.) B

Section D

- 1.)
 -) Damming of upstream river, which makes the downstream of the river have less water. Thus, countries near the downstream of the river will find it hard to get freshwater.
 -) Water pollution from the waste of industries, which makes water not potable and fresh anymore.
 -) Grow of fresh water demand as the population increase, but the supply stays the same

Section E

- 1.)
 -) Ensure the safety and well-being of the public
 -) Blowing the whistle on illegality or wrong-doing.
 -) Contributing one's services to worthy, non-profit groups and projects.
 -) Actively promote the ethical development and use of technology.
 -) Provide expert advice to non-experts.