

VALUE BASED QUESTIONS (PHYSICS)

Q1 Sumit has a cable TV connection from a local cable operator. He buys a new TV and plans to call the operator for a new connection. However, his friend Amit , who is an engineer, tells him” there is no need to pay extra for a new connection , I can use a wire to connect your TV to the cable “

Sumit refuses and says that he would rather get a proper and legal connection from the cable operator.

(a)What values (any two)have been demonstrated by Sumit in refusing the illegal connection? (1)

(b)Which band of frequencies transmit signals by reflection from ionosphere? What is the name given to this band? (1,1)

Q2 Scientists predict that a nuclear war will cause a severe nuclear winter and destroy all life on the planet.

(a) What is the cause of the above prediction by the scientists?Why? (1)

(b) Which human values would be violated if the nuclear holocaust takes place? (1)

(c) Which human values should be promoted in order to prevent such a nuclear war in future? (1)

Q3 Monika’s father requires financial assistance and is approached by a cell phone company to install a cell phone tower on the ceiling of his house. The company offers him a amount of Rs 40,000 per month.

Monika in the meantime comes across a newspaper report which states that excessive cell phone signals can cause damage to the human body. It was found especially in some cases where the cell phone signals had greater intensity than the permitted values.

(a) What should be Monika’s advice to her father? Should he allow the installation of the tower at his house for financial gain? (1)

(b) What human values are demonstrated by Monika in giving this advice to her father? (1)

(c) Which human values are violated by the cell phone company in using cell phone signals of greater intensity than the permitted values? (1)

(d) Can you think of a possible reason why cell phone signals cannot be transmitted using atmospheric reflection? (1)

Answers

1 (a) *Values are honesty, integrity, truthfulness, ethics*

(b) The band is 1500kHz upto 30/40 MHz .These are called sky waves.

2 (a)Cause of prediction is that nuclear war will cause heavy dust/debris which will stop the greenhouse effect responsible for maintaining the earth's temperature.

(b)Value violated are Concern for life, care for environment, compassion

***(c)Values which should be promoted are appreciation of other cultures and religions,
Brotherhood, universal love, forgiveness, global awareness***

3 (a)Monika should advice her father against installation of the cell tower as it is possibly harmful to the health of her family.

(b)Values exhibited by her are caring (for the family), wisdom, consciousness, discrimination.

(c)Values violated by the cell phone company are ethics, responsibility , care for environment.

(d)Cell phone signals are not reflected back by the ionosphere as they have very high frequencies.