

Answer Question 1 and either of 2 and 3.

1. Democritus was the Greek Kanāda; Kanāda was the Indian Democritus. – Explain. (5 marks)
2. Define the following terms: i) dialectical materialism. ii) falsifiability iii) paradigm iv) idealism v) epistemology vi) sense-data vii) dialectics viii) hypothesis ix) a priori x) mind-independent reality. (5 marks)

3. Fill in the blanks.

The first ever X-ray diffraction photo of the DNA molecule was taken by ..... The Nobel prize for the discovery of the Double Helix was given to ....., ..... and ..... Linus Pauling was wrong in thinking of a ..... helix structure of the DNA. Einstein won the Nobel Prize not for the theory of ..... but for his work on ..... Fred Hoyle and J V Narlikar are famous for the ..... theory of the universe. This theory does not accept that universe began with a single ..... (5 marks)

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Write down the alphabet corresponding to the correct choice for the following questions. Each correct answer: 1 mark. Wrong answer: -0.5.

1. "Some animals are not birds". What type of assertion is this?

- A. Universal affirmative
- B. Particular affirmative
- C. Universal negative
- D. Particular negative

2. "All monkeys have been observed to have tails, therefore all monkeys have tails". What type of reasoning is this?

- A. Intuitive
- B. Experiential
- C. Inductive
- D. Deductive

3. In which type of reasoning does conclusion follow from premises with some probability?

- A. Inductive
- B. Deductive
- C. Intuitive
- D. Scientific

4. "All cars run on engines. No cars run on engines". What is the relationship between these two assertions?

- A. Contradictory
- B. Contrary
- C. Subcontrary
- D. Subaltern

5. Which of the following pairs of assertions represent a subaltern relationship?

- A. All humans are mortal. Some humans are not mortal.
- B. All humans are mortal. No human is mortal.
- C. No human is mortal. Some humans are not mortal.
- D. All humans are mortal. Some humans are mortal.

6. If the first premise is "Every action has an equal and opposite reaction", and the second premise is "There is no reaction", then according to the Law of Contrapositive in deductive reasoning, what will be the conclusion (third statement)?

- A. Every reaction does not have an action.
- B. Every action does not have a reaction.
- C. There is no action.
- D. There is action.

7. Which of the following is not a basic element of the "Scientific Method"

- A. Observation
- B. Experience
- C. Causation
- D. Skepticism

8. Which of the following observations is a correct example of causation?

- A. The faster windmills are observed to rotate, the more wind is observed to be. Therefore wind is caused by the rotation of windmills.
- B. Children that watch a lot of TV are the most violent. Clearly, TV makes children more violent.
- C. Young children who sleep with the light on are much more likely to develop myopia in later life. Therefore, sleeping with the light on causes myopia.
- D. In cold countries the incidence of falling increases on the days there is sleet ice on the roads. Therefore, sleet ice causes people to fall.

9. In order to find a cause for the large number of dengue cases in near your home you go out and check all accumulated water (ponds, puddles, water collected in peoples' homes) and find that a majority of them contain the same type of mosquito larvae. Based on this set of observations, which of the following hypothesis can you draw?

- A. Water accumulation causes dengue
- B. Water accumulation is correlated with high incidence of dengue
- C. Mosquito larvae cause dengue
- D. Large number of mosquito larvae is correlated with high incidence of dengue

10. Which of the following observations will constitute a pattern?

- A. In a forest which has many tigers there are less number of deer.
- B. In a forest which has less tigers there are many deer
- C. Many tigers hunt deer but do not eat them
- D. Increase in the number of tigers in a forest correspond to the decrease in the number of deer