

Science and Hope of Survival

Comprehension I:

Question 1

a. "If you are so clever, why are you so poor?"

The professional addressed as 'you' in the statement above refers more than others to a _____

(Choose the best option from below)

- i) Scientist
- ii) Lawyer
- iii) Doctor
- iv) Businessman

Answer:

The professional addressed as 'you' in the statement is i) Scientist

Question 2

Read paragraph (1) and (2) carefully and fill in the blanks in the table below:

Answer:

Professionals	A Writer	A Scientist	A Lawyer
Vocation	Writing	Experiment, Research	Arguing
Field of Activity	Literature	Discovery	Justice
Reward	Appreciation	Honour	Money

Question 3

Some words below relate to business, some to science, and some to both. Categorize them accordingly:

Answer:

Field of Science	Field of Business	Both
Rational thinking	Wealth	Commerce
Exploring nature	Profit and loss	Playing to popular sentiments
Discovery	Advertisement	Friendship
Research	Exploitation of nature	Universality

Question 4

The writer says, "I found myself in Geneva." It expresses, more than anything else, the writer's _____.

(Choose the right option and fill in the blank)

- i) Pleasure
- ii) Surprise
- iii) Anxiety
- iv) Annoyance

Answer:

The writer's surprise.

Question 5

Read the statements below and determine whether they are true or false according to the text.

Statements	Yes/No
The war was going on between the US and the USSR when the Geneva meeting was called.	No
Everyone lived under the fear of annihilation by nuclear weapons.	Yes
In a nuclear war, the first who strikes will be the survivor.	No
The three superpowers were willing to ban nuclear weapon tests.	Yes

Question 6

Earth tremors are caused by two factors. One is an earthquake. What is the other factor?

Answer:

The other factor is a nuclear test.

Question 7

Which of the following qualities helped scientists come up with a solution to the problem? Which of them did not? Mark ✓ for the right qualities and × for the wrong ones.

Answer:

Qualities	Mark (✓/×)
Self-assessment	✓
Self-praise	×
Popularity	×
Experience	✓
Self-discipline	✓
Respect for evidence	✓

Question 8

What was the important decision that politicians took before the Geneva Summit?

Answer:

The important decision taken before the Geneva Summit was the "Nuclear Test Ban."

Question 9

"Immersion in science does not go with common sense" suggests _____.

(Complete the sentence with the right option)

- i) Foolishness of scientists
- ii) Absent-mindedness of scientists
- iii) That scientists do not bother about the results of their work

Answer:

ii) Absent-mindedness of scientists.

Question 10

With whose help can the world be prepared to face challenges posed by natural calamities?

Answer:

With scientists' help, the world can be prepared to face challenges posed by natural calamities.

Question 11

Write the names of three subjects that come under the category of basic science.

Answer:

The three subjects that come under basic science are Physics, Chemistry, and Mathematics.

Question 12

Who can best ensure our safety in the world?

Answer:

Scientists, with their advanced tools and research, can best ensure our safety.

Think About the Text**Question 1**

The pursuit of science is an exciting adventure. Do you agree? Compare it with other types of adventure, like sports.

Answer:

Yes, the pursuit of science is an exciting adventure. Like sports, scientific research involves risks, challenges, and uncertainty. Scientists embark on experiments without knowing the outcome, just as athletes take on competitions with unpredictable results. However, unlike sports, achievements in science benefit humanity by improving health, technology, and everyday life.

Question 2

Which sentence in the text suggests that the author was more involved in theoretical research than in its application to warfare?

Answer:

The sentence "I did not give much thought to how it connects with real life." from the third paragraph suggests that the author was more involved in theoretical research.

Question 3

"A paradox may refer to a person, thing, or situation that has two opposite features and seems strange." In light of this definition, how is 'MAD' a paradox?

Answer:

MAD (Mutually Assured Destruction) is a paradox because nations build nuclear weapons for self-defence. However, if they use them, it would lead to total destruction, including their own, defeating the purpose of defence.

Question 4

What was the 'problem' faced by nuclear powers? Was it a violation of the agreement or the detection of a violation?

Answer:

The problem was both the violation of the agreement and its detection. If nations signed a nuclear test ban, there was no sure way to verify if others were secretly conducting nuclear tests.

Question 5

Why were technical experts summoned by the three superpowers?

Answer:

The superpowers had enough nuclear weapons to destroy each other. Since nuclear strikes could happen within 20 minutes, they wanted to find a solution to prevent war.

Technical experts were summoned to develop a method to detect secret nuclear tests.

Question 6

In which area did Keilis-Borok's theoretical knowledge have a direct application?

Answer:

Keilis-Borok researched seismic waves caused by earthquakes. His knowledge became useful in detecting underground nuclear explosions, which produce similar tremors.

Question 7

Why was it difficult for opposing sides of the "Iron Curtain" to find a solution to the problem?

Answer:

Due to Cold War tensions, there was mutual distrust between nations. Despite political differences, scientists worked together, setting aside nationalistic concerns for the greater good.

Question 8

How are scientists able to work despite political and cultural differences?

Answer:

Scientists respect hard evidence and facts, which are universal. They collaborate based on logic and data rather than political ideologies.

Question 9

List the lessons the writer learned at the Geneva Summit.

Answer:

1. Scientists worldwide think alike and collaborate beyond borders.
2. Science offers hope for survival and well-being.
3. The writer no longer felt alone as a scientist abroad.

Question 10

Give examples that illustrate the writer's claim that scientists are the most practical people in the world.

Answer:

The writer cites scientific advancements in technology, industry, defence, and entertainment as evidence of scientists' practicality. Examples include:

- Antibiotics in medicine
- Electronics in daily life
- Biotechnology in agriculture
- Synthetic fibres in textiles
- Forensic genetics in law enforcement

Question 11

Who is headhunted by financial institutions and pharmaceutical industries? Why?

Answer:

- Financial institutions recruit theoretical physicists for their analytical skills.
- Pharmaceutical industries seek biological researchers to develop new medicines.

Question 12.

Some statements are given below. Are they true? Why / Why not? Discuss with your partner.

- a) Money is more powerful than intellectual resources.
- b) Intellectual resources help the survival of mankind.
- c) Basic research is a way of stalling disasters.

Answer:

Statement	True/False	Explanation
Money is more powerful than intellectual resources.	False	Money cannot solve all problems; science and knowledge improve life.
Intellectual resources help mankind's survival.	True	Science helps combat diseases, discover new energy sources, and improve safety.

Statement	True/False	Explanation
Basic research is a way of preventing disasters.	True	Scientists study ecological changes to predict earthquakes, tsunamis, and storms.

Question 13

Imagine you and your classmates are selected to represent India in a scientific meeting in Russia on nuclear tests. How would you prepare?

Answer:

We would:

1. Research nuclear testing policies of different countries.
2. Understand international treaties like the Nuclear Test Ban Treaty.
3. Prepare arguments on environmental impact, safety concerns, and peaceful alternatives.
4. Collaborate with experts in nuclear physics to back our claims with evidence.
5. Present India's stance on nuclear testing and its effects on global peace.

Enrich your vocabulary Collocations

Task 1: Take a look at the underlined words in the given paragraph. The word 'train' collocates (combines naturally) with 'fast' and not with 'brisk'.

I boarded the fast train to Delhi along with my parents and sister last evening. After reaching Delhi we checked into a hotel which was booked earlier. I had a quick glance at the menu and placed orders for some snacks. The next morning, my father and I took a brisk walk in the garden outside the hotel and looked for birds in the trees. But we were disappointed as there had been a rapid decline in the number of birds.

Task 2 : Following the example given above, fill in the blanks with the correct collocations (appropriate combination of words) choosing from those given in brackets.

The Government sanctioned a few crores of rupees to build a stadium in our town. The builders made _____ with the stadium. While the work was in progress, unfortunately, a boulder rolled down on a worker and he was injured.

Immediately, he was rushed to a nearby hospital. I wished him _____. The Government took _____ against the builders. The builders made _____ of the bills of the hospital.

(a speedy recovery, a prompt payment, a swift action, a rapid progress)

Task 3: Champaka is in Goa. She writes a letter to her friend, Suma. She consciously uses collocations leaving options for Suma to choose the right collocations. How would Suma use them?

Hi Suma

The weather's fantastic here. We make/ walk/ take a stroll along the beach every morning. My grandpa made/ got/ accepted friends with some foreigners here yesterday. He changed/ exchanged/ passed some interesting ideas with them. I happened to read an article on climate change in one of the local newspapers. It was excellent and said that rising/rising/ going/ sea levels are the menacing/disturbing/changing factors for the ecological balance. They are causing irreparable/ inseparable/ acute damage to the environment. I will be back in Bengaluru next week and we can discuss more about these things. Take care. Bye,
Champaka

Answer:

Hi Suma,

The weather's fantastic here. We **take** a stroll along the beach every morning. My grandpa **made** friends with some foreigners here yesterday. He **exchanged** some interesting ideas with them. I happened to read an article on climate change in one of the local newspapers. It was excellent and said that **rising** sea levels are the **disturbing** factors for the ecological balance. They are causing **irreparable** damage to the environment. I will be back in Bengaluru next week, and we can discuss more about these things.

Take care.

Bye,

Champaka

Task -4: Match the words in the box on the left with the words that they collocate with on the right. Note some words shown in box A may collocate with more than one word in box B. After matching, frame appropriate sentences. You may follow the given examples.

A	B
make lay draw combat raise commit	doubts money crime violence laughter gesture parallel emphasis

Sentences:

1. Sunder's joke drew hilarious laughter from the audience.
2. She made a kind gesture by helping the elderly man cross the road.
3. The scientist laid a parallel between climate change and industrial pollution.
4. His suspicious behaviour drew doubt from his colleagues.
5. Strict laws should be enforced to combat violence in society.

6. The organization is raising money for disaster relief efforts.
7. The thief committed a crime by robbing the bank.

Speak well

Task 1: Read the dialogue between an interviewer and a scientist who is reluctant to talk about his experience and how the interviewer persuades him to open up.
Here's the refined version of your interview:

Interviewer: Good morning, sir. Congratulations on your successful trip to the Geneva Summit.

Scientist: Thank you.

Interviewer: Could you please spare some time, sir?

Scientist: Sorry. (Looks at his wristwatch)

Interviewer: (Politely) Sir, I urge you to share your experiences with our viewers.

Scientist: Can we meet some other day?

Interviewer: Sir, don't you think our viewers ought to know what happened at the Summit?

Scientist: You're right. But... (pauses)

Interviewer: Sir, you ought to enlighten us.

Scientist: Okay. (Juggles in his chair)

Interviewer: Were there differences of opinion on the Nuclear Test Ban?

Scientist: Of course, we differed, as we come from different cultural backgrounds.

Interviewer: Couldn't you arrive at a consensus, sir?

Scientist: Finally, we did. We all signed the agreement for the Nuclear Test Ban.

Interviewer: Thank you very much for sparing your time.

Scientist: You're welcome.

Read And Respond

Task 1: Read the given story. The bits of the story are jumbled. You can arrange them in the right order to complete the story. You can also give a suitable title to it.

Question 1.

"Your candle has burned out, brother," replied the stranger.

Answer:

In early times in Japan, bamboo and paper lanterns were made with candles inside. A blind man, visiting a friend one night, was offered a lantern to carry home with him.

Question 2.

"I do not need a lantern," he said. "Darkness or light is all the same to me."

Answer:

"I do not need a lantern," he said. "Darkness or light is all the same to me."

Question 3.

The blind man started off with the lantern and before he had walked far, someone ran into him. "Look out where you are going!" he exclaimed to the stranger. "Can't you see the lantern?"

Answer:

"I know you do not need a lantern to find your way," his friend replied. "But if you don't have one, someone else may run into you. So, you must take it."

Question 4.

In early times in Japan, bamboo and paper lanterns were made with candles inside. A blind man, visiting a friend one night, was offered a lantern to carry home with him.

Answer:

The blind man started off with the lantern and before he had walked far, someone ran into him. "Look out where you are going!" he exclaimed to the stranger. "Can't you see the lantern?"

Question 5.

"I know you do not need a lantern to find your way," his friend replied. "But if you don't have one, someone else may run into you. So, you must take it."

Answer:

"Your candle has burned out, brother," replied the stranger.

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Task 1: Read the conversation between Ram and Shashi. A friend of Ram and Shashi writes their conversation in a paragraph. Observe how he has done it.

Rama: Hi Krishna!

Krishna: Hi Rama, How are you?

Rama: I'm doing great! Guess what? We've planned a trip to Mullayanagiri hill station. You ought to come with us.

Krishna: Mullayanagiri? When are you going?

Rama: It's next Sunday!

Krishna: Hmm, I'll check my schedule and get back to you.

Rama: No, no! I would urge you to come with us. It's going to be amazing!

Krishna: Well, you'd better check with Govind. I might have some work on that day.

Rama: That's not an issue! You shouldn't miss this trip, shouldn't you?

Krishna: You make a good point. Alright, I'll come along. See you!

Rama: Great! See you then. Bye!

Krishna: Bye!

Science and Hope of Survival



This prose is written by Kellis Borok, a scientist researching seismic waves produced during earthquakes. It touches upon the idea that many young people aspire to be scientists, even though the profession doesn't offer as much financial reward as careers in business, law, or medicine.

According to Leo Tolstoy, a writer is not merely someone who writes but someone who cannot live without writing. Similarly, the author believes this applies to scientists. They may only receive money and honour after their discoveries, but they gain freedom, friendship, independence, and the satisfaction of revealing nature's secrets.

During the Cold War in the 1960s, while the author was in Moscow conducting research, he received a call from the President of the Russian Academy of Sciences. The President showed a letter from the Geneva conference where an American scientist, Frank Press, had quoted the author's work. The author was invited to attend the Geneva conference, where

experts from the US, UK, and Soviet Union were discussing nuclear weapons.

The three nuclear powers had enough weapons to destroy one another. The invention of stronger bombs created an imbalance, prompting the powers to agree on a ban on nuclear weapons tests. The challenge was detecting if a country violated the ban by conducting underground nuclear explosions. This problem was connected to the theory of seismic waves, as nuclear explosions and earthquakes both produce tremors.

In this critical situation, scientists and engineers from opposing sides worked together to find a solution. Their cooperation led to the Nuclear Test Ban agreement. The author learned that there are like-minded people worldwide, and science offers hope for survival and well-being. Despite the common belief that scientists lack practical sense, their research leads to new technologies, medical advancements, and solutions to global challenges, such as cancer cures and more efficient energy sources.

In times of disaster, from natural catastrophes to man-made crises, scientific research plays a crucial role in survival. The author emphasizes that science, when used for humanity's benefit, serves as a guardian and caretaker, offering hope for a better future.