

2.6 Science and spirituality

Warming up!

1. Get into pairs/group and match the columns:

'A' Column	'B' Column
(1) Science	(a) The study of the basic nature of knowledge, reality and existence, especially as an academic subject.
(2) Religion	(b) The study of the nature of God and religious belief.
(3) Spirituality	(c) Intellectual and practical activities in a systematic study of the structure and behaviour of the physical and natural world through observation and experiment.
(4) Philosophy	(d) The belief in and worship of a superhuman controlling power - God.
(5) Theology	(e) The quality of being concerned with the human spirit or soul as opposed to material or physical things.

Ans. (1) - (c): (2) - (d): (3) - (e); (4) - (a): (5) - (b).

2. Given below are some incomplete Quotes. Complete them choosing from the words SCIENCE/RELIGION/SPIRITUAL and make them meaningful:

- **SCIENCE** without religion is lame: **RELIGION** without science is blind.
- **SCIENCE** has outrun our **SPIRITUAL** power, we have guided missiles, but misguided man.
- On a **SPIRITUAL** journey, we all have the same destination.
- **RELIGION** is meant to awaken man's love for his Source - God!
- **RELIGION** provides a means of connecting with the Creator of Heaven and Earth, in the language of your heart and soul.
- **SCIENCE** is a beautiful gift to humanity; we should not distort it.

3. What's the difference between science and technology? Discuss in pairs and tell your answer to the class:

Ans. We generally assume that science and technology mean almost the same thing. However, there is a difference. The goal of science is the pursuit of knowledge for its own sake while the goal of technology is to create products that solve problems and improve human life. Simply put, technology is the practical application of science.

4. Do you think that science and faith are both important in our lives? Why? Discuss in your group and give a small presentation in front of the class:

Ans. Yes, both science and faith are important in our lives. There is no contradiction between the two. Both genuinely seek the truth. Science explores the truth about the body and the physical world. Faith introspects on the nature of the soul. Science helps us understand the

physical structure of the universe, while faith deals with human values and morals. Both complement each other. In the words of Einstein. Science without religion is lame; religion without science is blind.

5. We need science:

To understand the latest technology to know about the physical world and our universe

We need faith:

To enable our spirit to soar high to have hope and to believe in a reason for our existence

6. Refer to a dictionary to find out the meanings of the following words: Spiritual Spirituality Spiritualism Spiritualist.

Ans. Spiritual - relating to or affecting the human spirit or soul, as opposed to material or physical things

Spirituality - the quality of being concerned with the human spirit, or soul, as opposed to material or physical things
Spiritualism a system of belief or religious practice based on supposed communication with the spirits of the dead, especially through mediums

Spiritualist - an advocate of the doctrine that the spirit exists as distinct from matter, or that spirit is the only reality

English workshop

1. (A) Read Part I' and match the words in Column 'A' with associating words given in Column B'.

'A' Column	'B' Column
(1) Science and	(a) Created by fact and faith
(2)faith Science	(b) Success of societies
(3) Better Planet	(c) Betterment of humanity
(4) Creations and Discoveries	(d) Believers of science and religions
(5) Conflict	(e) Solves questions, discovers truth, conceives inventions

Ans. 1-b, 2-e, 3-a, 4-c, 5-d

(B) Read 'Part II'. Go through the given statements and say whether you agree or disagree to each of them.

(a) The Space Research set up facility was planned at Alleppey, Kerala

Ans. Disagree

(b) The person who could help and can be co-ordinated was the Bishop.com

Ans. Agree

(c) It Was quite easy to relocate so many people and destroy religious institutions for research centre -

Ans. Disagree

(d) Dr. Kalam joined ISRO in 1970

Ans. Disagree

(e) Science and spirituality seeks prosperity of the human life

Ans. Agree

2. Choose the correct alternative from the given statements.

(A) Dr. Kalam's father was an

Ans. Imam

(B) Dr. Kalam's friends discussed on

Ans. Science and spirituality

(C) According to Dr. Kalam, what is felt more than ever

Ans. A dialogue among culture, religions and civilization

(D) Dr. Kalam's father was a symbol of

Ans. Simplicity and divinity

(E) Spirituality takes care of.

Ans. Confusion, misery and failure

(F) How academic brilliance can diminish?

Ans. By a coating of dust

(G) What was most astonishing about 102 year old Swamiji?

Ans. He was a great scientist

(H) What Dr. Kalam gathered while swimming in silence a but the shores of MahapragyaJi?

Ans. sands of conscience

3. Among the three parts, there are people who touched and influenced the life of Dr. A. P. J. Kalam in one or the other ways. Complete the web chart by writing the names of such people.

Ans. Pole model

1. pakshi lakshmana shastrigal
2. Reverend father bodal
3. Professor vikram sarabhai
4. Reverend peter benard pereira
5. sri sivananda

4. Write the significance of the following years, as given in the text.

Ans. 1960. joined esro

1970. 1st unsuccessful launch

1980. 1st successful launch

2009. Invited to attend 102nd birthday party of maha swamiji

2012. Launched what can i give movement

5. Who said to whom and when?

(a) "Can we give up God's abode for such a great scientific mission?"

Ans. Reverend Father Pereira said this to the people in the Church, one Sunday, after Dr Sarabhai and Dr Kalam approached him to request the people to give up the church land for the building of a space research centre.

(b) "And then God will shine through us."

Ans. Professor Satish Dhawan to Dr Kalam when they were talking about academic brilliance.

(c) "I wonder what power Mahaswamiji possesses, that keeps him so strong."

Ans. The narrator (Srijan) said this to Dr Kalam while discussing the Mahaswamiji 102nd birthday celebrations

6. Answer the following in your own words, and write in your notebook.

1. What makes Dr Kalam a humble personality?

Ans. Even though Dr Kalam was indisputably a great scientist, he had deep faith and espoused the cause of the betterment of humanity. This shows that he was indeed a humble personality.

2. How were different virtues inculcated in Dr Kalam?

Ans. Dr Kalam inculcated the virtue of humility from his father who was a boatman. He learnt from his father how simplicity and divinity could go together.

3. How did the Reverend relate and compare the work that he and Dr Sarabhai did for the people?

Ans. The Reverend said that Dr Sarabhai was a scientist. We benefit from the devices that science has developed in many ways, in our homes and in the fields of medicine and technology. A priest prays for the peace and well-being of his people. Thus both science and spirituality seek the Almighty's blessing for the prosperity of the human mind and body. In short, both are doing the same job.

4. What was so remarkable about Dr Sri Sri Shivakumara Mahaswamiji?

Ans. The remarkable aspect about Dr Sri Sri Shivakumara Mahaswamiji was that he had dedicated his life to the service of humanity.

5. Why is there an urgent need to replace "What can I take" with "What can I give"?

Ans. There is an urgent need to replace 'What can take' with 'What can I give' for the very survival of humanity. Unless we realize the gravity of the message, this planet will become a hub of environmental degradation, social evils, inequity and corruption. If we do not take up the challenge, our planet will not be liveable and the human race will not prosper.

7. In your note book, write a short paragraph on each of the following covering respond to up their profession and personality traits with examples.

(a) Rev. Peter Bernard Pereira

Ans. Rev. Father Bernard Pereira was the priest in-charge of the church in Thumba, Kerala. He was a person who immediately understood the dilemma in the minds of Dr Kalam and Professor Sarabhai. He realized that he would have to make a sacrifice in the interests of science. At the same time he could not do this without the approval of his congregation. So he put the concept before the entire gathering in forceful terms and got unanimous support for the setting up of the space research centre.

(b) Dr Sri Sri Shivakumar Mahaswamiji

Ans. Rev. Father Bernard Pereira was the priest in-charge of the church in Thumba, Kerala.

He was a person who immediately understood the dilemma in the minds of Dr Kalam and Professor Sarabhai. He realized that he would have to make a sacrifice in the interests of science. At the same time he could not do this without the approval of his congregation. So he put the concept before the entire gathering in forceful terms and got unanimous support for the setting up of the space research centre.

(C) Dr A. P. J. Abdul Kalam.

Ans. Ans. Dr. A. P. J. Abdul Kalam was a great scientist. He was so humble and he said that he got this humility from his father. Dr. Kalam joined ISRO in 1960 when it was just a fledgling organization. His interactions with the great scientist Professor Vikram Sarabhai and the Reverend Peter Bernard Pereira, shaped his thoughts on religion and learnt about the true meaning of religious service. From Professor Dhavan, he got to know how one can be academically accomplished. From Mahaswamiji he realised the value of generosity. He learned many good qualities from great people like Pramukh Swami, Mahapragya Ji, Professor Brahma Prakash, Father Pereira, Dr. Sarabhai, Swami Sivananda of Rishikesh and his father. He believed that faith and fact can create a better planet for all of us; spirituality can lift us out of any kind of confusion, misery or failure. He was truly a patriot because he said that one should use one's degree to transform the society where one lives. In 2012, he started a movement

"What Can I Give, through which he tried to combat corruption, environmental degradation and social evils.

8. Write in your own simple words what the following expressions convey in the context they occur in the text.

(a) Faith and fact can, together, create a better planet.

Ans. It means that fact helps us to understand some of the basic knowledge of the planet and faith provides us with a sense of purpose from which we can see how our creations and discoveries go on. So if these two are used perfectly, then definitely it could create a better planet for all of us.

(b) Dr Kalam's own life was nourished by multiple faiths.

Ans. It means that in his life, there were lots of great people having faith in their work who made Dr. Kalam a successful person. With their faiths, he developed himself.

(C) But there was a major roadblock.

Ans. It means there was an obstacle in getting the possession of the site for Space Research Centre because that site was actually the fishing grounds of Thumba's fishermen. Moreover, it had an old church of St Mary Magdalene, a bishop's house and a school, which was under the administration of the church. So the officials thought that it was difficult to shift so many people with their religious place.

(d) Only when the dust is removed, does the mirror shine and the reflection becomes clear.

Ans. It means that on our soul, there are lots of impurities of greed, selfishness, lust and it makes us a bad or evil person. When we can remove this dust by living pure and ethical, and by serving humanity, then through us God will shine.

(e) Through his (Kalam's) words of wisdom. I was getting to learn from countless great minds.

Ans. The writer got the words of wisdom from Dr. Kalam but actually Dr. Kalam had received all these words from lots of great people like his father, Dr. Sarabhai, Professor Dhavan, Mahaswamiji etc.

(f) He gathered the sands of conscience to be our guide, our best friend.

Ans. It means that our guide or true friend is our conscience which most of time helps us take right decisions in our lives. So Dr. Kalam was trying to listen his conscience to give the answer to Shrijan Pal.

(g) What can I take?' is the thought which is responsible for all the wrong, see around us.

Ans. It means that this thought of only taking taking from others makes us selfish and greedy. Because of this thought, we have destroyed the environment carelessly, have been corrupted and behaved with others in an unfair way and also have destroyed our families.

9. (A) From the lesson, pick out one word for each of the following:

(a) increase the speed

Ans. Accelerate

(b) point of view

Ans. perspective.

(c) nearness in space

Ans. proximity.

d) a place of residence

Ans. Abode

(e) eager to know everything

Ans. Inquisitive

(f) echoed loudly

Ans. Riverberated

(g) Giving away much to needy

Ans. Munificence

(h) without making a difference

Ans. Indiscriminately

(B) Arrange the following words in the alphabetical order.

1. inventions, indisputable, interactions, inequity, institutions, inquisitive, indiscriminately.

Ans. inventions, indisputable, interactions, inequity. institutions, inquisitive, indiscriminately.

(C) Find from the lesson the noun forms of -

1. combine

Ans. Combination

2. solve

Ans. Solution

3. simple

Ans. Simplicity

4. divine

Ans. Divinity

5. advance

Ans. Advancement

6. tranquil

Ans. Tranquility

7. liveable

Ans. Live, life

8. strong

Ans. Strength

10. Match the word connectors with reference to part I, II, III respectively. Make sentences of each of these connectors.

Words.	Connector
government	person
betterment of	curbs
pure and ethical	degradation
community's	launch
religious	dialogue
astonishing technological	silence
frank	motivation
social	aspect
faith	life
inquisitive	centre
academic	officials
environmental	problems
pin-drop	humanity
alternate	service
remarkable	bodies
silent	evils
famished	advancement
unsuccessful	brilliance

- Ans.** (1) Some government officials came to our village to investigate the killings.
 (2) Gandhi's efforts were for the betterment of humanity
 (3) The hermit was revered for living a pure and ethical life.
 (4) We formed a core team to look into the community problems.
 (5) We need religious discipline in order to develop a conscience.
 (6) The most astonishing aspect of this great king's personality is his humility.
 (7) The district required more skilled manpower for technological advancement,
 (8) The teacher had a frank dialogue with the youth about his drug problem.
 (9) He left his good secure job in order to dedicate himself to social service.
 (10) In order to make progress, people should avoid conservative faith curbs.
 (11) The local thieves fear the Inspector Morse because he is an inquisitive person.
 (12) All through his school and college days he displayed academic brilliance.
 (13) Plastics are major contributors to environmental degradation.
 (14) There was pin-drop silence when the sad news was announced.
 (15) The owner was provided alternate accommodation until his flat was renovated.
 (16) Lal Bahadur Shastri was a remarkable person,
 (17) Our inner beliefs should be the silent motivation to do good to others.
 (18) The doctor opened a dispensary in the village in order to cater to famished bodies.
 (19) At the first attempt it was an unsuccessful launch
 (20) ISRO is a space research centre in Bengaluru.

11. Simple sentence: subject + verb + object/complement/adverbial: Analysing a simple sentence is done by separating the subject and predicate. The predicate is further analysed into -

- (1) **There was silence.**
 (2) **Alexander Bell invented the telephone**
 (3) **They have a holiday.**
 (4) **The dancer danced gracefully.**
 (5) **The milkman comes daily.**
 (6) **The hostess served tea.**
 (7) **The kite soared upwards.**

Ans. Complement

Object

Complement

Adverbial

Adverbial

Object

Adverbial

- Say whether the predicates in the following sentences have an object/ a complement/and adverbial.

- (1) **There was silence.**

Ans. Complement

(2) Alexander Bell invented the telephone.

Ans. Object

(3) They have a holiday.

Ans. Complement

(4) The dancer danced gracefully.

Ans. Adverbial

(5) The milkman comes daily.

Ans. Adverbial

(6) The hostess served tea.

Ans. Object

(7) The kite soared upwards.

Ans. Adverbial

12. (A) Punctuate the following sentences to make them meaningful.

(1) dinesh took a bus that stopped at nanded railway station after crossing somwar peth

Ans. Dinesh took a bus that stopped at Nanded Railway Station after crossing Somvar Peth.

(2) dr apj abdul kalam was the first president of india by the way he was a great scientist orator and a humanitarian

Ans. Dr APJ Abdul Kalam was the past President of India. By the way, he was a great scientist, orator and a humanitarian.

(3) nouns are of different types common proper abstract concrete material

Ans. Nouns are of different types: common, proper, abstract, concrete, material.

(4) what a lot of noise you all make said the teacher cant you keep quiet for a while

Ans. "What a lot of noise you all make!" said the teacher, "Can't you keep quiet for a while?"

(5) Wow how lovely that cake looks they said we cant wait to eat it

Ans. "Wow! How lovely that cake looks!" they said, "We can't wait to eat it."

(B) Copy the first paragraph on page 92 in your notebook, carefully. Encircle all the punctuation marks with a coloured pencil/pen.

"Dear children amen.

Ans. Students do it your own

13. Project:

Read Dr. A.P.J. Abdul Kalam's 'Wings of Fire', and 'Ignited Minds, very renowned books and find the following:

(a) Subject of the book

(b) Special features of the book.

(c) Teachings/learnings/moral/message from the book.

(d) Your own opinion/idea/comment on the book.

Ans. Students do it your own

14. (A) Draft a speech that you would give at your School Assembly convincing junior students that the secret of true happiness lies in Giving and Sharing more than it Receiving and Taking.

Write it with the appropriate steps in your notebook.

Ans. Friends, It is through experience I have learned that 'As you give, so you live', There was a time in my life when I only wanted things. I was happy only when I received gifts. My main goal in life was to take as many things from others as I could. But then one day, on the way to market, I saw a poor hungry beggar boy running along the road. In his hand he held a loaf of bread. He ran to his mother, who was lying on the sidewalk and sat next to her feeding her. It touched me deeply that this boy who must have been hungry himself, found greater joy in feeding his famished mother. From that day onwards I started giving things to others. If I had two pens and someone wanted one, I would give it to him or her. I asked my mother to give my old shirt to a poor child from a nearby slum. For my birthday celebration, instead of having a party, I went along with my mother to the temple and fed a line of beggars. Giving things to others brings me great joy and happiness. Receiving something gives temporary satisfaction. But reaching out to others and seeing them smile, sharing things with others and making it worthwhile - these are far more precious than any precious stone that I may be fortunate enough to possess
Thank you.

(B) Divide your class in two groups and have a Debate on the topic "Science and Spirituality can go hand in hand".

Ans. For (view):

Both science and spirituality study aspects of our world. Both require mental discipline. Both require belief in certain axioms and truths. Hence both are valid. Science is the body. Spirituality is the mind. Science explores the creations of God. Spirituality delves into the nature of God. Both are two sides of the same coin. Both complement each other. It is inevitable therefore that science and spirituality go hand in hand.

Against (counterview): Science requires factual knowledge. It is a component of millions of physical laws. Spirituality is a free bird that soars on the wings of personal belief. It does not require proof. Only faith. How then can they be considered to be on the same plane? One is concrete; the other abstract. In order to draw upon spirituality, one may conjure up an image in the mind and be satisfied. Science seeks explanation only in logical reasoning based upon unlimited past experiences and developed into a truth by considering experiment after experiment The two are completely different in nature and cannot go hand in hand.