

## 2.6 Science and Spirituality

### Warming Up!

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

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

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

- ..... without religion is lame; ..... without science is blind.
- ..... has outrun our ..... power, we have guided missiles, but misguided man.
- On a ..... journey, we all have the same destination.
- ..... is meant to awaken man's love for his Source – God !
- ..... provides a means of with the Creator of Heaven and Earth, in the language of your heart and soul.
- ..... 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.

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.

5. We need science

\_\_\_\_\_ to understand latest technology

We need faith

\_\_\_\_\_ to enable our spirit to soar high.

6. Refer to a dictionary to find out the meanings of the following words.

Spirit – a person's mind or feelings or soul.

- Spiritual
- Spirituality
- Spiritualism
- Spiritualist



### Part I

We often witness conflict between two groups of people – one that believes in science and the other that believes in religion.

Dr Kalam was a great scientist – this is indisputable. But he was also convinced that fact and faith can, together, create a better planet. He once told me, ‘Science and faith *must* coexist for the human good. Science provides focus – focus helps us solve questions, discover the truth and conceive inventions. Faith provides **perspective** – perspective helps us see how our creations and discoveries go on to impact a combination vital for the success of societies. Science accelerates progress and faith **curbs** it within reasonable limitations. If the two function true to their roles, they will work together for the betterment of humanity.’

Dr Kalam’s own life was nourished by multiple faiths.

His father, a boatman, also served as an *imam* at their local mosque, and his two best friends were from two different religions – one was a Hindu and the other was a Christian. Pakshi Lakshmana Shastri was the head priest of the famous Rameswara temple and a Vedic scholar, and the Reverend Father Bodal had built the first church on Rameswara Island. Dr Kalam recalled how ‘All three of them, in the unique attire of their religion, used to sit and discuss the community’s problems and find solutions. Throughout the nation and the world, the need to have a frank dialogue among cultures, religions and civilizations is felt now more than ever.’

When asked where he got his humility from Dr Kalam would always attribute it to his father. In him, he saw how simplicity and divinity could go together. Even though his father was a boatman and Dr Kalam went on to become the President of India, they shared the same values in life. Both believed that if one leads a spiritual life then that spirituality can lift them out of any kind of confusion misery or failure.

- ◆ **perspective** : view, particular attitude towards something

- ◆ **curbs** : controls, keeps something within limit

- ◆ *Why do science and faith have to go hand in hand ?*



## Part II

In the 1960, when Dr Kalam joined ISRO, 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. It was here that he learnt about the true meaning of religious service. Professor Sarabhai and his team had selected a site in Thumba, Kerala, to set up their space research facility. It was an ideal site due to its proximity to the magnetic equator. But there was a major roadblock in getting possession of the site as it was 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. Government officials predicted that it would be impossible to relocate so many people from the site and destroy religious institutions for the sake of a space research centre.

But upon Dr Sarabhai's persistence, it was suggested that they approach the only person who could help them in this situation – Father Pereira, the then bishop of the region.

Dr Sarabhai and Dr Kalam approached Father Pereira on a Saturday evening. The Reverend said, 'Oh Vikram, you are asking me for my children's abode, for my abode, and for God's abode. How is it possible?' Father Pereira then invited the party to visit the church on a Sunday morning. Dr Sarabhai, his team, and the forever-inquisitive disciple, Dr Kalam, took up the offer.

At church the next Sunday, the Reverend invited Dr Sarabhai up to the dais after the prayer service. Turning to everyone present, he said, 'Dear children, here is a scientist, Dr Vikram Sarabhai. What does science do for us? We benefit from the devices that science has developed to light up our homes. I am able to talk to you using this **mic**, thanks to technological advancement. Medical science allows doctors to diagnose and treat patients. Science and technology enhance the overall comfort and quality of human life. And what do I do as a preacher? I pray for you, for your well-being, and for your peace. In short, Vikram and I are doing the same job. Both science and spirituality seek the Almighty's blessings for the prosperity of the human

- **fledgling** : new and inexperienced

- ◆ *Why was the site in Thumba selected for building the space research centre?*

- ◆ *What shaped Dr Kalam's thoughts on religion?*

- ◆ *What was the major obstacle in getting possession of the site?*

- **mic** : microphone, mike

- ◆ *Who helped to solve the problem of acquiring the site?*



◆ *How did the people respond to the appeal made by Rev. Pereria? Would you have given the same response?*

● **reverberated** : echoed loudly

◆ *How can we lead a pure life?*

● **obscuring** : making unclear

◆ *Whose philosophy actually had an impact on the writer?*

● **resonated** : echoed, resounded

◆ *What advice did Dr Kalam give the narrator after his graduation?*

mind and body.

‘Dear children, Dr Vikram says that, within a year, he wants to build scientific facilities near the sea coast, replacing all the settlements that now stand there. Now, can you give up your abode? Can I give up my abode? Can we give up God’s abode for such a great scientific mission?’ Dr Kalam recalled how he witnessed ‘a pin-drop silence for a long moment’. Then everyone got up, and the whole church **reverberated** with the deafening noise of a collective ‘amen’.

And so work on the research centre was soon under way. But not without alternate accomodation being offered to the affected fishermen, the church and the Reverend Pereira.

### Part III

A few years later, in the early 1980s, Professor Satish Dhawan, the Director of ISRO, under whom Dr Kalam had made his first unsuccessful launch in 1970 and then a successful one in 1980, had provided him with more soul-shaping wisdom.

One day in 2012, we were discussing the number of Ph.Ds Dr Kalam had received. He said to me, ‘Srijan, Professor Dhawan had so many master’s degrees – all from the best institutions, no less – so I asked him how one can become so academically accomplished. He responded saying that academic brilliance is no different from the brilliance of a mirror, which can be diminished by a coating of dust. Only when the dust is removed, does the mirror shine and the reflection becomes clear. We can remove the impurities **obscuring** our souls by living pure and ethical lives, and by serving humanity. And then God will shine through us.’ These words took me back to my meeting with Dr Kalam after my graduation from IIMA, in 2009. At the time, he had advised me to use my degree and gold medal to transform the society I lived in. Back in the present moment, it suddenly struck me that Dr Kalam’s advice had, in fact, directly **resonated** from Professor Dhawan’s beliefs. The more I lived and worked with Dr Kalam, the more I realized that through his words of wisdom I was getting to learn from countless great minds.

In April 2009, Dr Kalam was invited to attend



the 102nd birthday celebrations of His Holiness Dr Sri Sri Shivakumara Mahaswamiji in the Tumkur district of Karnataka. Mahaswamiji is a remarkable person, who has dedicated his life to the service of humanity. His greatest contribution is the establishment of a free residential education system for more than nine thousand children in the *ashram*. The most astonishing aspect of the entire event of his birthday was that the 102 year old Swamiji stood on his feet without any support! He looked as steady and alert as any other youngster present there. This display of inner strength touched Dr Kalam deeply.

A couple of days later, we were discussing this unusual birthday party. I said to him, ‘Sir, do you know, only four out of 1 lakh people cross the age of 100?’ I had googled the subject beforehand. He replied, ‘But how many of these four would be able to stand tall for half an hour, give a wise **discourse**, and then go on to feed thousands of children?’ Of course nobody could know the exact answer to his question but the question itself led to many other relevant **queries**. ‘I wonder what powers Mahaswamiji possesses that keep him so strong at such an advanced age? Maybe it’s a balanced diet and a healthy lifestyle, or perhaps it’s **genetics**?’ I asked.

Dr Kalam sat contemplating deeply.

He recollected the **tenet** of goodness of action from Pramukh Swamiji. Then, perhaps swimming in silence to the shores of Mahapragyaji, he gathered the sands of conscience to be our guide, our best friend. Deeper down in the space-time of memory, he must have heard Professor Brahma Prakash’s words about the need of living a pure and ethical life, and Father Pereira’s and Dr Sarabhai’s lesson of selflessness in service. Eventually his thoughts would have settled on Swami Sivananda of Rishikesh, in whom he saw great **tranquility**, and finally they must have come full circle with the memory of the life of simplicity of his father, who always **espoused** the value of giving back.

At long last, he spoke. ‘It is the very spirit of What Can I Give.’ He elaborated, ‘Mahaswamiji lives with the beliefs and **ethos** of our mission. He gives and gives – education to famished minds, food to famished bodies. In giving so much, he becomes strong. His

◆ *What was Mahaswamiji’s tremendous contribution ?*

◆ *What was unique about Mahaswamiji?*

- **discourse** : a formal talk including a debate.
- **queries** : questions

**Guess the meaning of :**  
**genetics**

◆ *What was the secret of Mahaswamiji’s fitness even at the age of 102 years ?*

- **tenet** : a principle or belief

- **tranquility** : peace, calmness

- **espoused** : gave support to

- **ethos** : characteristic spirit of a culture or era



• **munificence** : generosity

• **circumspectly** : cautiously

◆ *What makes society corrupt and unfair?*

• **inequity** : injustice

◆ *Which question inspires humanitarianism?*

• **astounding** : amazing, surprisingly impressive

**munificence** fuels his strength. That is what keeps him standing tall and active in life. The essence of a happy life and a peaceful society lies in one sentence - *What can I give?*

‘Turning to me, he asked, ‘What is the reverse of “What can I give?”

**Circumspectly** I replied, ‘What can I...take?’

‘Yes,’ he said, ‘and that is the thought which is responsible for all the wrong we see around us. We think that we can take from the environment and destroy it indiscriminately; we think of what we can take from other humans, leading us to corruption and **inequity**. This attitude of taking and taking even destroys families. To keep this planet liveable and the human race thriving, we have to replace this attitude of ‘what can I take’ with the goodness of ‘what can I give’.

The gravity of the message struck me. This challenge became my silent motivation.

Three years later, in 2012, this idea became a reality as our What Can I Give movement, through which Dr Kalam tried to combat corruption, environmental degradation and social evils.

It is important that we ask ourselves this question for in the answer lies the truth of humanity. So go ahead and question yourself.

What can I give?

The answers will be **astounding**.

– Adapted from the ‘What Can I Give’ by Srijan Pal Singh

## ENGLISH WORKSHOP

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

No	'A'		'B'
(i)	Science and faith	(a)	Created by fact and faith
(ii)	Science	(b)	Success of societies
(iii)	Better Planet	(c)	Betterment of humanity
(iv)	Creations and Discoveries	(d)	Believers of science and religions
(v)	Conflict	(e)	Solves questions, discovers truth, conceives inventions

(i) ..... (ii) ..... (iii) ..... (iv) ..... (v) .....



**(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 Allapi, Kerala - .....
- (b) The person who could help and can be contacted was the Bishop - .....
- (c) It was quite easy to relocate so many people and destroy religious institutions for space-research centre - .....
- (d) Dr. Kalam joined ISRO in 1970 - .....
- (e) Science and spirituality seeks prosperity of the human life .....

**(C) Go through 'Part III' and complete the following statements.**

- (a) The essence of a happy life and a peaceful society lies in one sentence - .....
- (b) To keep this planet liveable and the human race thriving, we have to .....
- (c) Mahaswamiji's greatest contribution is the .....
- (d) We can remove the impurities obscuring our souls by .....
- (e) The narrator, Srijan, realised that through Dr. Kalam's words of wisdom .....
- (f) Mahaswamiji possesses powers that kept him so strong were ..... or .....

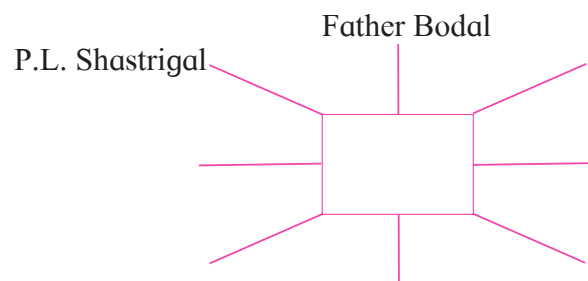
**2. Choose the correct alternative for the given statements.**

- (A) Dr. Kalam's father was an .....
  - (a) teacher
  - (b) scientist
  - (c) farmer
  - (d) *imam*.
- (B) Dr. Kalam's friends discussed on .....
  - (a) science and technology
  - (b) discoveries and inventions.
  - (c) science and spirituality
  - (d) community's problems and solutions.
- (C) According to Dr. Kalam, the need that is felt more than ever is .....
  - (a) a laboratory to conduct experiments.
  - (b) a new technology to find results.
  - (c) a dialogue among cultures, religions and civilizations.
  - (d) a dialogue between people of different professions.
- (D) Dr. Kalam's father was a symbol of .....
  - (a) trust and faith.
  - (b) simplicity and divinity
  - (c) teacher and disciple.
  - (d) father and friend.
- (E) Spirituality takes care of .....
  - (a) education, teaching and learning.
  - (b) science, technology and sci-fi.



- (c) confusion, misery or failure.  
 (d) crime, illiteracy and child labour.
- (F) How can academic brilliance diminish ?  
 (a) by disturbance and frustration.  
 (b) by going off track  
 (c) by a coating of dust.  
 (d) by losing focus and seriousness.
- (G) What was most astonishing about 102 year old Swamiji?  
 (a) He was a great speaker and orator.  
 (b) He was a great scientist.  
 (c) He was a great admirer of technology.  
 (d) He looked as steady and alert as any other youngster.
- (H) What Dr. Kalam gathered while swimming in silence at the shores of Mahapragyaji ?  
 (a) beautiful sea shores  
 (b) tree lined beaches  
 (c) sands of conscience  
 (d) beautiful sun-set.

**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.**



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

1960 .....  
 1970 .....  
 1980 .....  
 2009 .....  
 2012 .....

**5. Who said to whom and when?**

- (a) “Can we give up God’s abode for such a great scientific mission?”  
 .....  
 (b) “And then God will shine through us.”  
 .....  
 (c) “I wonder what power Mahaswamiji possesses, that keeps him so strong.”  
 .....



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

- (a) What makes Dr Kalam a humble personality?
- (b) How were different virtues inculcated in Dr Kalam ?
- (c) How did the Reverend relate and compare the work that he and Dr Sarabhai did for people?
- (d) What was so remarkable about Dr Sri Sri Shivakumar Mahaswamiji?
- (e) Why is there an urgent need to replace 'What can I take' with 'What can I give'?

**7. In your notebook, write a short paragraph on each of the following covering up their profession and personality traits with examples.**

- (a) Rev. Peter Bernard Pereira
- (b) Dr Sri Sri Shivakumar Mahaswamiji
- (c) Dr A. P. J. Abdul Kalam

**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. ....
- (b) Dr Kalam's own life was nourished by multiple faiths. ....
- (c) But there was a major roadblock. ....
- (d) Only when the dust is removed, does the mirror shine and the reflection becomes clear. ....
- (e) Through his (Kalam's) words of wisdom, I was getting to learn from countless great minds. ....
- (f) He gathered the sands of conscience to be our guide, our best friend. ....
- (g) 'What can I take?' is the thought which is responsible for all the wrong, seen around us. ....

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

- (a) increase the speed .....
- (b) point of view .....
- (c) nearness in space .....
- (d) a place of residence .....
- (e) eager to know everything .....
- (f) echoed loudly .....
- (g) giving away much to the needy .....
- (h) without making a difference .....



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

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

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

- |                  |                   |
|------------------|-------------------|
| 1. combine ..... | 5. advance .....  |
| 2. solve .....   | 6. tranquil ..... |
| 3. simple .....  | 7. liveable ..... |
| 4. divine .....  | 8. strong .....   |

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

No	Word		Connector
1.	government	(a)	person
2.	betterment of	(b)	curbs
3.	pure and ethical	(c)	degradation
4.	community's	(d)	launch
5.	religions	(e)	dialogue
6.	astonishing	(f)	silence
7.	technological	(g)	motivation
8.	frank	(h)	aspect
9.	social	(i)	life
10.	faith	(j)	centre
11.	inquisitive	(k)	officials
12.	academic	(l)	problems
13.	environmental	(m)	humanity
14.	pin-drop	(n)	service
15.	alternate	(o)	bodies
16.	remarkable	(p)	evils
17.	silent	(q)	advancement
18.	famished	(r)	brilliance
19.	unsuccessful	(s)	accommodation
20.	space-research	(t)	discipline

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

- (1) verb + object as in 'A doctor treats patients.' / 'He greeted the teacher.'
- (2) verb + complement as in 'They are very tired.' / 'I have a cold.'



(3) verb + adverbial as in (He walks slowly. / Raj arrived late. / The thief is hiding there.)

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

- (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. ....

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

- (1) dinesh took a bus that stopped at nanded railway station after crossing somvar peth
- (2) dr a p j 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
- (4) what a lot of noise you all make said the teacher cant you keep quiet for a while
- (5) wow how lovely that cake looks they said we cant 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’.

**13. Project :**

Read Dr. A.P.J. Abdul Kalam’s very renowned books ‘Wings of Fire’; and ‘Ignited Minds’, to 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

**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 in Receiving and Taking.**

**Write it with the appropriate steps in your notebook.**

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

