Chapter 3.3: Stephen Hawking

Warming Up | Q 1 | Page 114

Get into pairs and match the prominent personalities with the disabilities they had :

'A'	'B'
(1) John Milton	The great German composer and musician who became deaf at the age of 28 years
(2) Beethoven	The great English poet who became blind at the age of 43 years.
(3) Stephen Hawking	An American enterpreneur, animator, voice actor, had a learning disability.
(4) Walt Disney	Famous scientist of the 20th century who was paralyzed.
(5) Albert Einstein	A great inventor who has over 1000 patents had a learning disability and became deaf.
(6) Thomas Edison	Great 20th Century scientist and noted physicist who had a learning disability.
(7) Hellen Keller	Dancer whose leg had to be amputated because of an accident.
(8) Sudha Chandran	Was blind and deaf.
(9) Tanay Grey-Thompson	Had polio and was elected as the President of the United States for four terms.
(10) Franklin Roosevelt	Is a wheelchair racer.

SOLUTION

'A'	'B'
(1) John Milton	(b) The great English poet who became blind at the age of 43 years.
(2) Beethoven	(a) The great German composer and musician who became deaf at the age of 28 years.
(3) Stephen Hawking	(d) famous scientist of the 20th century who was paralyzed.
(4) Walt Disney	(c) An American entrepreneur, animator, voice actor, who had a learning disability.

(5) Albert Einstein	(i) Great 20th century scientist and noted physicist who had a learning disability.
(6) Thomas Edison	(e) Great inventor who has over 1000 patents and who had a learning disability and became deaf.
(7) Hellen Keller	(h) Was blind and deaf
(8) Sudha Chandran	(g) Dancer whose legs had to be amputated because of an accident.
(9) Tanay Grey-Thompson	(j) Is a wheelchair racer.
(10) Franklin Roosevelt	(i) Had polio and was elected President of the United States for four terms

Warming Up | Q 2 | Page 114

Word Building.
(a) Reduplication: The root/stem of a word is repeated exactly the same or with a slight change.
For example, tweet-tweet, pitter-patter, chit-chat, bang-bang, riff-raff

(b) Blending: Parts of two or more words combine to form a new one.
For example,
- breakfast + lunch = brunch
- smoke + fog = smog
- motor + hotel = motel

(c) Clipping: Reducing a word to one of its syllables or a part of it.
For example,
- Mathematics - Maths
- Advertisement - Ad
- Laboratory - Lab

(d) Acronym: Words formed from the first letter of each of the words involved.
For example,
- radar, scuba, Unicef, Nasa
- BBC, CID, USA, ATM, VIP
- DOB, KYC, PM, GN, TY, etc.

In your notebook, write five examples of each of the above types of word-building devices. (You may take the help of a Dictionary/Internet)
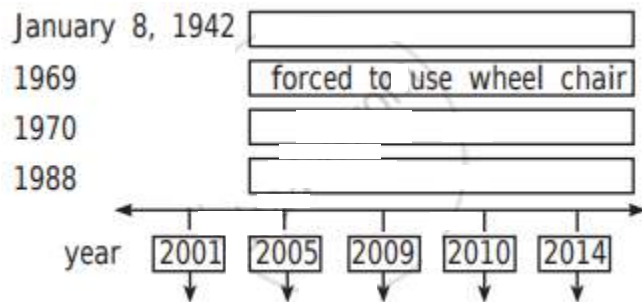
SOLUTION

a. **Reduplication:** bow-wow; hee-haw; cheep cheep: chomp-chomp: ping-pong

b. **Blending:** bionic, carjack, Chunnel, cineplex, cyborg, emoticon, infotainment, internet, liger (lion + tiger), netizen, telethon, vidiot, workaholic

c. **Clipping:** exam, gym (gymnasium), 'flu (influenza), gas (gasoline), memo (memorandum)
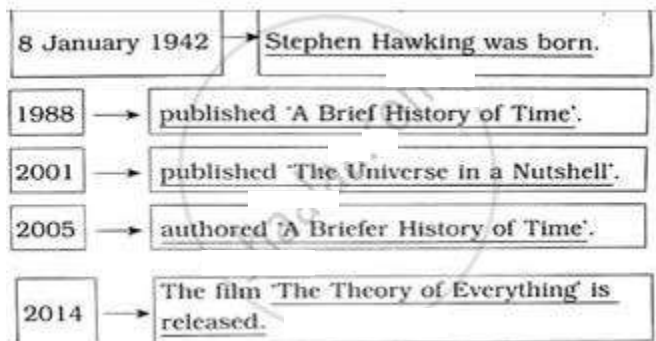
d. **Acronym:** laser, CD-ROM, IOU, K9, PIN

ENGLISH WORKSHOP [PAGES 119 - 121]

English Workshop | Q 1 | Page 119

Observe the timeline and search the occurrences according to it. Prepare a chart.

SOLUTION

English Workshop | Q 2 | Page 119

Make a list of books written by Stephen Hawking.

Name of the book	What's in it? (topics covered)	His contribution to the world
1. _____	(a)_____	
2. _____	(b) _____	
3. _____	(c) _____	
4. _____	(d) _____	

SOLUTION

Book	What's in it? (topics covered)	His contribution to the world
1. A Brief History of Time	1. Overview of space and time, existence of God and the future	1. An account of cosmology for the masses
2. The Universe in a Nutshell	2. Guide to cosmology's big theories	2. Illustrated easier to understand
3. A Briefer History of Time	3. Touched upon newest developments in the field like the String theory	3. Simplified the original work's core concepts
4. The grand design	4. God could not have create a universe	4. The big bang was the inevitable consequence of the laws of physics and nothing more.

English Workshop | Q 3 | Page 119

Make a list of Hawking's physical inabilities after 1963.
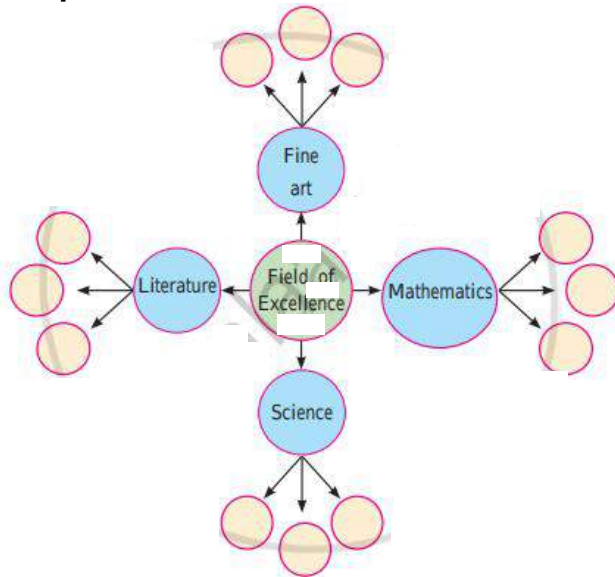(a) _____ (d) _____
(b) _____ (e) _____
(c) _____ (f) _____

SOLUTION

Hawking's physical inabilities after 1963:

(a) could not go anywhere except in a wheelchair

(b) an ever-worsening physical state

(c) needed someone 24/7 to manage his care and work

(d) except for feeding himself and getting out of bed, had need of assistance for virtually everything else

(e) speech increasingly slurred, finally lost his voice for good

(f) ability to do his work in peril.

English Workshop | Q 4 | Page 119

Shape your mind. Complete the network of cluster diagrams with the name of great personalities and their contribution.

SOLUTION

1. Field of excellence: Fine Art
Satyajit Ray (film director) rose to fame with 'Pather Panchali
• combined humanism and simplicity in his film making
• won Honorary Oscar Award in 1992

Vasudeo Gaitonde (painter)
•started Bombay Progressive Arts Group
•combined Zen philosophy and calligraphy to create abstract paintings
•awarded Padma Shri posthumously in 1971

Rabindranath Tagore (poet)
•wrote 'Gitanjali
•combined nationalism, and spiritualism to express his ideas
•won Nobel Prize for English Literature in 1913

2. Field of excellence: Mathematics
Srinivasa Ramanujan Field: Mathematics
•famous for the Ramanujan prime, the Ramanujan theta function
•One of the Fellows of the Royal Society
•the first Indian to be elected a Fellow of Trinity College, Cambridge

Euclid Field: Geometry
•Father of Geometry
•his book Elements' served as the main textbook to teach Mathematics until the early 20th century

Shakuntala Devi Field: Numbers
•known as the human-computer

- 6 years old: demonstrated her arithmetic abilities at the University of Mysore
- she could give the 23rd root of a 201-digit number in 50 seconds
- in 2013, honoured with a Google Doodle for what would have been her 84th birthday

3. Field of excellence: Literature
Shakespeare (poet, dramatist)
- wrote many plays like Macbeth. Hamlet, and also many sonnets.
- combined humanism and felicity of verbal expression in his writings, known especially for his characterizations
- considered by many as the greatest writer in English

Charles Dickens (novelist)
- wrote many novels depicting conditions in the Victorian era
- combined verbal descriptions with strong characterizations
- considered by many as the greatest novelist of the Victorian era.

G. B. Shaw (playwright)
- wrote many plays such as 'Pygmalion', 'Man and Superman
- combined social satire with the wit to criticize many social mores and traditions
- leading literary figure of the 19th and 20th centuries

4. Field of excellence: Science Marie Curie
Field: Physics, Chemistry
- pioneering work on Radioactivity: discovery of polonium and radium •first woman to win the Nobel Prize
- first person and only woman to win the Nobel prize twice
- the first woman to become a Professor at the University of Paris

Alexander Graham Bell
Field: Physics, Sound
- awarded the first US patent for the telephone in 1876
- groundbreaking work in optical telecommunications and aeronautical
- received numerous honorary degrees and dozens of medals and awards
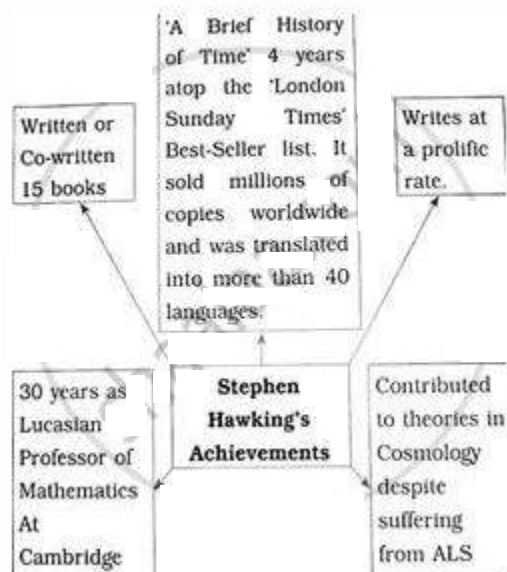
CV Raman
Field: Physics
- groundbreaking work in the field of light scattering
- won the Nobel Prize for Physics in 1930
- famous for the Raman effect
- 1954 awarded the Bharat Ratna
- also awarded the Lenin Peace Prize and made a Fellow of the Royal Society.

English Workshop | Q 5 | Page 120
Complete the following web.

The diagram shows:
- Written or Co-written 15 books
- 'A Brief History of Time' 4 years atop the 'London Sunday Times' Best-Seller list. It sold millions of copies worldwide and was translated into more than 40 languages.
- Writes at a prolific rate.
- 30 years as Lucasian Professor of Mathematics At Cambridge
- **Stephen Hawking's Achievements**
- Contributed to theories in Cosmology despite suffering from ALS

English Workshop | Q 5 | Page 120

The following incident in Stephen Hawking's life is given in jumbled order. Arrange the incidents in proper sequence as per their order of occurrence in Hawking's life.
Hawking published 'A Brief History of Time' that contained the newest development

SOLUTION

Hawking was unable to attend a conference in Arizona.

English Workshop | Q 6 | Page 120
Explain how the life of Stephen Hawking proves the proverb 'Every cloud has a silver lining'. Write it down in your notebook.

SOLUTION

Every cloud has a silver lining.

This proverb 'Every cloud has a silver lining means that you should never feel hopeless because difficult times always lead to better days. Difficult times are like dark clouds that pass overhead and block the sun. But at the same time, on the outer edge of the clouds, you will invariably observe a silver lining that provides some measure of light and hope.

The problems and difficulties that we face in life are like those dark clouds. Stephen Hawking started experiencing problems with his health while he was barely 21, a student at Oxford. On occasion, he would trip and fall, or slur his speech. Later on, he was diagnosed with ALS, Amyotrophic Lateral Sclerosis. It was a disease in which the nerves that controlled his muscles were shutting down. He was given two and a half years to live. But as we know he went on to livenmore than a half-century beyond.

Thanks to early diagnosis, advanced medical treatment, and complete support from family, friends, and students, he lived a full life and made major contributions to existing theories in physics and cosmology. These, in fact, were the silver linings that brightened what would otherwise have been a lackluster life.

The life of Stephen Hawking proves that even though the difficulty we face might seem enormous, there is always hope, there are always ways to circumvent them and to keep on achieving and contributing to the world.

English Workshop | Q 7. (a) | Page 120
Do you agree or disagree with the following statement? Justify your stand/ answer by quoting a line from the text.
Stephen Hawking was diagnosed with Alzheimer's disease

SOLUTION

No. I do not agree.
The line from the text justifying this stand is Eventually however doctors did diagnose Hawking with the early stages of ALS

English Workshop | Q 7. (b) | Page 120
Do you agree or disagree with the following statement? Justify your stand/ answer by quoting a line from the text.
Hawking believed that man cannot live on other planets in the future.

SOLUTION

No, I do not agree.
The line from the text justifying this stand is:
He's convinced that time travel is possible and that humans may indeed colonize other planets in the future.

English Workshop | Q 7. (c) | Page 120
Do you agree or disagree with the following statement? Justify your stand/ answer by quoting a line from the text.
Though Hawking lost control over his body, he writes with a prolific rate with the help of assistants.

Yes, I do agree
The line from the text justifying this stand is: Through the program and the help of assistants. Stephen Hawking has continued to write at a prolificnrate.

English Workshop | Q 7. (d) | Page 120
Do you agree or disagree with the following statement? Justify your stand/ answer by quoting a line from the text.
Hawking has written or co-written more than 25 books.

No, I do not agree.
The line from the text justifying this stand is: Over the years. Stephen Hawking has written or co-written a total of 15 books.

English Workshop | Q 8. (a) | Page 120
The following incident in Stephen Hawking's life is given in jumbled order. Arrange the incidents in proper sequence as per their order of occurrence in Hawking's life.
Hawking's book 'The Universe in a Nutshell' offered an illustrated guide to cosmology's big theories.

Hawking published the book A Brief History of Time that offered an overview of space and time.

English Workshop | Q 8. (b) | Page 120
The following incident in Stephen Hawking's life is given in jumbled order. Arrange the incidents in proper sequence as per their order of occurrence in Hawking's life.
Hawking published the book 'A Brief History of Time' that offered an overview of space and time.

Hawking's book 'The University in a Nutshell' offered an illustrated guide to cosmology's big theories.

English Workshop | Q 8. (c) | Page 120
The following incident in Stephen Hawking's life is given in jumbled order. Arrange the incidents in proper sequence as per their order of occurrence in Hawking's life.
Hawking was unable to attend a conference in Arizona.

Hawking published 'A Brief History of Time' that contained the newest development.

The following incident in Stephen Hawking's life is given in jumbled order. Arrange the incidents in proper sequence as per their order of occurrence in Hawking's life.

Hawking was diagnosed with ALS while studying cosmology at the University of Cambridge.

SOLUTION

Hawking was diagnosed with ALS while studying cosmology at the University of Cambridge.

Fill in the blank with the proper form of the Verbs as per the Subject :

Mother _____ a good meal.

1. cook
   2. cooks

SOLUTION

The mother **cooks** a good meal.

Fill in the blank with the proper form of the Verbs as per the Subject :

Mother and her daughter _____ good meals.

1. cook
2. cooks

SOLUTION

Mother and her daughter **Cook** good meals.

Fill in the blank with the proper form of the Verbs as per the Subject :

The rise and fall of the Empire _____ recorded in History.

1. is
2. are

SOLUTION

The rise and fall of the Empire **is** recorded in History.

Fill in the blank with the proper form of the Verbs as per the Subject :

Neither Ritesh nor Alok _____ well.

1. play
2. plays

SOLUTION

Neither Ritesh nor Alok **Play** well.

English Workshop | Q 9. (e) | Page 120
Fill in the blank with the proper form of the Verbs as per the Subject :
Either of the two _____ guilty.
1. is
2. are

SOLUTION

Either of the two **are** guilty.

English Workshop | Q 9. (f) | Page 121
Fill in the blank with the proper form of the Verbs as per the Subject :
Everyone _____ mistakes.
1. make
2. makes

SOLUTION

Everyone **makes** mistakes.

English Workshop | Q 9. (g) | Page 121
Fill in the blank with the proper form of the Verbs as per the Subject :
That news _____ published today
1. is
2. are

SOLUTION

That news **is** published today.

English Workshop | Q 9. (h) | Page 121
Fill in the blank with the proper form of the Verbs as per the Subject :
Eight lakh rupees _____ a big amount.
1. was
2. were

SOLUTION

Eight lakh rupees **Was** a big amount.

English Workshop | Q 9. (i) | Page 121
Fill in the blank with the proper form of the Verbs as per the Subject :
The Committee _____ approved of it.
1. has
2. have

The Committee **Has** approved of it.

English Workshop | Q 9. (j) | Page 121
Fill in the blank with the proper form of the Verbs as per the Subject :
The cost of all the goods _____ risen.
1. has
2. **have**

SOLUTION

The cost of all the goods **have** risen.

English Workshop | Q 10. (a) | Page 121
From the following sentence, underline the Noun and encircle their Determiners that specify the noun in a noun phrase.
(articles/possessive pronouns/demonstratives or quantifiers)
He lost his voice for good.

SOLUTION

He lost his voice for good.

English Workshop | Q 10. (b) | Page 121
From the following sentence, underline the Noun and encircle their Determiners that specify the noun in a noun phrase.
(articles/possessive pronouns/demonstratives or quantifiers)
Over the years, Hawking has written 15 books.

SOLUTION

Over the years, Hawking has written 15 books.

English Workshop | Q 10. (c) | Page 121
From the following sentence, underline the Noun and encircle their Determiners that specify the noun in a noun phrase.
(articles/possessive pronouns/demonstratives or quantifiers)
These three books articulate his search for science's Holy Grail.

SOLUTION

These three books articulate his search for science's Holy Grail.

English Workshop | Q 10. (d) | Page 121
From the following sentence, underline the Noun and encircle their Determiners that specify the noun in a noun phrase.
(articles/possessive pronouns/demonstratives or quantifiers)
A few events prevented him from despondency.

A few events prevented him from despondency.

English Workshop | Q 10. (e) | Page 121
From the following sentence, underline the Noun and encircle their Determiners that specify the noun in a noun phrase.
(articles/possessive pronouns/demonstratives or quantifiers)
That dream made him realize it

That dream made him realize it.

English Workshop | Q 11 | Page 121
Complete the information from the following graphic organiser and prepare a summary.

Summary Maker

Title of the text :
(a) Name of the personality : _____
(b) Age : _____
(c) Books (As Author) : _____
(d) Field of Excellence : _____
(e) Achievements : _____

1. **Title of the text**	1. Stephen Hawking
2. **Name of the personality**	2. Stephen Hawking
3. **Age**	3. Born 8 January 1942
4. **Books as author**	4. • 'A Brief History of Time • 'The Grand Design • The Universe in a Nutshell' • 'A Briefer History of Time' • 'Black Holes and Baby Universes'
5. **Film**	5. "The Theory of Everything"
6. **Field of excellence**	6. Theoretical Physics, Cosmology

7. Achievements	7. Albert Einstein Award, 1978; Co-founder of Microsoft Research

English Workshop | Q 12 | Page 121

You have come to know from the text that 'The Theory of Everything' is a film describing the life and work of Stephen Hawking. Watch the film on the internet and write a complete review of it. You can take the help of the following points while writing the review of the film.

(1) Title
(2) Characters
(3) Story
(4) Dialogues
(5) Picturisation
(6) Music
(7) Special features (if any)
(8) Opinion / Views
(9) Message/Moral values.

SOLUTION

The Theory of Everything - Movie Review

The movie The Theory of Everything is based on the life of Stephen Hawking. He was diagnosed with ALS at the age of 21, but because of the love of fellow Cambridge student, Jane Wilde, whom he married, he went on to secure achievement after achievement and began to be called the successor to Einstein. He and Jane defy terrible odds and break new ground in the fields of medicine and science, achieving more than either could hope to imagine. Hawking's physical decline weakens his frail body. His mind, on the other hand, remains sharp, always in pursuit of that singe equation that would explain the elusive Theory of Everything. Right up to his mid-seventies. Stephen Hawking has no plans to retire.

The dialogue smoothly carries the narrative forward, at times indulging in monosyllabic repartee. which at times, provides crisp tongue-in-cheek humour. It is a very enjoyable film. It is tasteful and engaging and beautiful visually.

The music, which is quite haunting was nominated for the best musical score at the Oscars.

The film has been criticised for harping on the theme of Time' throughout. and for being too sentimental,

However, its message that a person can accomplish much in one's lifetime despite being afflicted with a severe physical disability is universally relevant. Moral values of love and loyalty uphold the film making it a treat to watch.