Science and Technology

Exercises

Q. 1 A. Choose the right option and rewrite the sentence.

..... was named as the first Chairman of atomic energy commission.

A. Dr. Homi Bhabha
B. Dr. Homi Sethna
C. Dr. A.P.J. Abdul Kalam
D. Dr. Raja Ramanna

2. ..... was the first completely indigenous communication satellite made by ISRO.

A. Aryabhatt
B. Insat 1 B
C. Rohini-75
D. Apple

Answer :

Ans-1 : Dr. Homi Bhabha was named as the first Chairman of atomic energy commission.

Note: The Indian Atomic Energy Commission was set up in 1948 with the objective to produce electricity from atomic energy, come up with technology for increasing the yield of food grains and develop nanotechnology.

Ans-2 : Aryabhatt was the first completely indigenous communication satellite made by ISRO.

Note: In 1975 with the help from Soviet Union India launched it's first completely indigenous communication satellite made by ISRO.

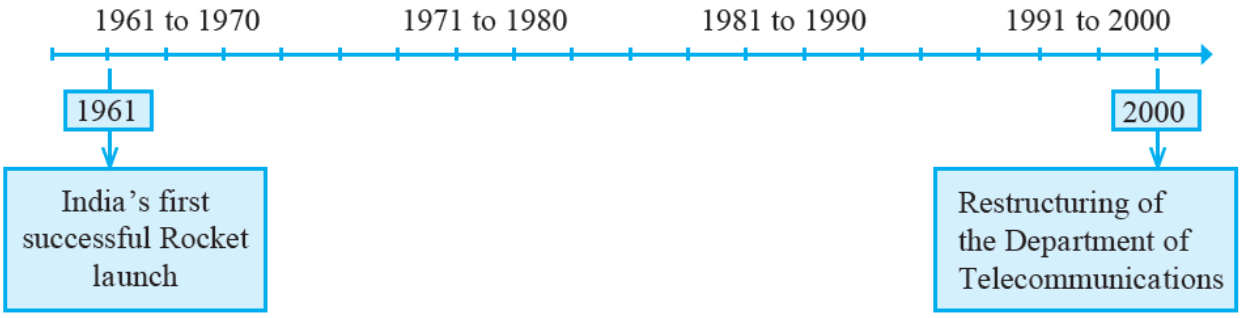
Q. 1 B. Identify the wrong pair.

1. Prithvi - surface to surface ballistic missile
2. Agni - surface to under water ballistic missile
3. Akash - from the surface to air attacking missile
4. Nag - anti-tank missile

Answer : Agni - surface to under water ballistic missile.

Note: Agni, like the Prithvi missile, was a surface to surface ballistic missile devised to strengthen India's military capability against China.

Q. 2 A. Prepare a timeline of the progress of India in science and technology.



Answer :

Year	Project
1961	India's first successful rocket launch
1963	Telex Services Started
1969	India's indigenously built rocket launched
1972	Overseas Communication Service was established
1974	India's first nuclear test & Oil exploration in Bombay High
1975	India's first satellite Aryabhatta launched
1976	International Subscriber Dialled Telephone Service was started
1979	India's first remote sensing Satellite Bhaskar launched
1981	first completely indigenously built satellite by ISRO (APPLE) launched
1983	INSAT B-1 launched for improving telecommunication
1984	First computerized reservation system & Kolkata metro started
1985	India's first indigenous nuclear reactor set up
1988	Prithavi Missile Test
1989	Agni Missile Test
1990	Akash & Nag Missile Tests
1994	Mobile Phone services started
1998	India's second nuclear test
2000	Department of telecommunication restructured

Q. 2 B. Explain the following concepts.

1. Space research
2. Telex service

Answer : 1. Indian National Committee for Space Research launched India's first research rocket from Thumba Equatorial Launch Center in Thumba in the State of Kerala in 1961. It was the beginning of Space Research Program in India.

2. The Telex service was started in 1961 by the Dept. of Telecommunication to rapidly transmit typed messages from one part of the country to another.

Q. 3 A. Explain the following with reasons.

Pandit Nehru established the Atomic Energy Commission.

Answer : With the objective of nurturing a scientific temper for national progress, our first Prime Minister Pt. Jawaharlal Nehru established the Atomic Energy Commission in 1948 under the Chairmanship of Dr. Homi Bhabha.

Q. 3 B. Explain the following with reasons.

India decided to conduct nuclear tests.

Answer : In 1974, India sucessfully conduct its first nuclear test in Pokharan, Rajasthan with the objective to using nuclear energy for peaceful purposes and self-sufficiency. The aggravating nuclear policy of China & Pakistan also played a role in India's decision to test the nuclear weapon. It put India in the league of USA, USSR, France, China and Germany who had their own missile programmes.

Q. 3 C. Explain the following with reasons.

USA imposed economic sanctions on India.

Answer : In 1998, India carried out its second successful nuclear test to demonstrate its nuclear preparedness while assuring the world that there would be no first use of the nuclear weapon. Yet USA imposed economic sanctions on India.

Q. 4 A. Write the answers in 25 to 30 words.

Write about Pokhran nuclear test.

Answer : The Pokhran tests were a series of five nuclear bomb test explosions conducted by India at the Indian Army's Pokhran Test Range in May 1998. It was the second instance of nuclear testing conducted by India. The objective was to using nuclear energy for peaceful purposes and self-sufficiency.

Q. 4 B. Write the answers in 25 to 30 words.

For which sector was Bhaskar–1 satellite expected to be useful?

Answer : Bhaskar–1 satellite was useful for India's development regarding water bodies, mineral deposits and weather forecasting. It was the first Experimental Remote Sensing Satellite built in India. Rich scientific data sent by SAMIR was used for oceanographic studies.

Q. 5 A. Write in brief.

Which of the everyday services are influenced by the satellite technology?

Answer : Everyday services like telecommunication, defence security, navigation, internet, television and radio broadcast etc are influenced by the satellite technology.

Q. 5 B. Write in brief.

Why is Dr. A.P.J. Abdul Kalam called as the 'Missile Man'?

Answer : Dr. A.P.J. Abdul Kalam called as the 'Missile Man' for his great contribution towards India's Missile Programme as the leader of Defence Research & Development Organisation (DRDO).

Q. 5 C. Write in brief.

How one can do computerized reservation for rail travel?

Answer : Earlier computerized reservation for rail travel could be done at the Railway Stations or though a travel agent, now with the advent of Internet anybody with an IRCTC account can book a ticket online from their computer or even mobile.

Q. 5 D . Write in brief.

Write the key features of Konkan Railway.

Answer : Konkan Railways was started in 1998 and has several records of technology to its credit. It stretches over four States (Maharashtra, Goa, Karnataka & Kerala) over a distance of 760 km. It has 12 tunnels, 179 big and 1819 small bridges. India's tallest bridge (64m tall) is on this line River Panval near Ratnagiri. It's a landslide prone zone, thus to avoid accidents sensors are fitted to the railway engines to detect topographic causalities.

Projects

Q. 1. With the help of the internet find information about 'Thumba Equatorial Launch Centre'.

Answer : The Thumba Equatorial Launch Centre is an Indian spaceport in Thumba, Trivandrum which is near the southern tip of the country and close to Earth's magnetic equator. It's a strategically important centre since is one of the furthest point from China, Pakistan and Bangladesh.