

**Chapter: 7**

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

**2**

- 1 ..... 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

**Ans Dr Homi Bhabha** was named as the first Chairman of atomic energy commission.

- 2 ..... was the first completely indigenous communication satellite made by ISRO.  
a. Aryabhata              b. Insat 1 B              c. Rohini-75              d. Apple

**Ans Apple** was the first completely indigenous communication satellite made by ISRO.

**Q.2 Identify the wrong pair :**

**6**

1			surface to surface ballistic missile
	i. Prithvi	-	
	ii. Agni	-	surface to underwater ballistic missile
	iii. Akash	-	from surface to air attacking missile
	iv. Nag	-	anti-tank missile

**Ans Wrong Pair** -Agni-surface to underwater ballistic missile

**Correct Pair** -Agni-Idea of India's missile strength and India's borders remain secure

2	i. 1974	-	Sagar Samrat
	ii. Oil wells	-	8500
	iii. Natural Gas	-	33
	iv. Total Mineral Oil Production	-	38%
	v. Country's demand for crude oil	-	15%

**Ans Wrong Pair** - Country's demand for crude oil - 15%

**Correct Pair** - Country's demand for crude oil - 14%

3	i. Karbude	-	Shortest tunnel
	ii. Biggest bridge	-	River Sharavati

iii. Tallest Bridge	-	River Panval
iv. Drillship	-	Sagar Samrat

**Ans Wrong Pair** - Karbude - Shortest tunnel

**Correct Pair** - Karbude - Longest Tunnel

4	i. 1 <sup>st</sup> digit of Pin code	-	Postage
	ii. 2 <sup>nd</sup> digit of Pin code	-	Sub-region
	iii. 3 <sup>rd</sup> digit of Pin code	-	Main disbursement district
	iv. Last three Digit Of Pin code	-	Location of the local post office

**Ans Wrong Pair** - 1<sup>st</sup> Digit of Pin code - Postage

**Correct Pair** - 1<sup>st</sup> Digit of Pin code - Region

5	i. 1958	-	DRDO
	ii. 1969	-	NCSR
	iii. 1981	-	APPLE
	iv. 1968	-	ISRO

**Ans Wrong Pair** - 1969 - NCSR

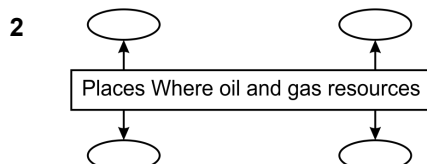
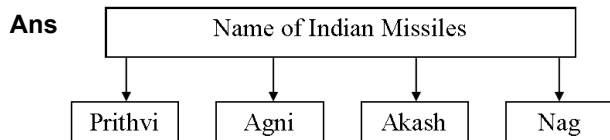
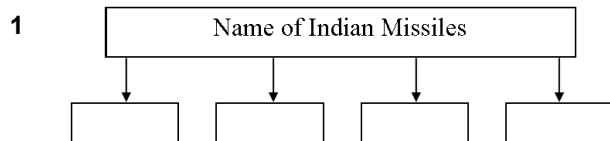
**Correct Pair** - 1969 - ISRO

- 6
- (1) Rohini - 75-Indigenously built rocket
  - (2) Aryabhata - First Indian satellite
  - (3) Bhaskar-1- Remote sensing experimental satellite
  - (4) INSAT 1-B - Earth station

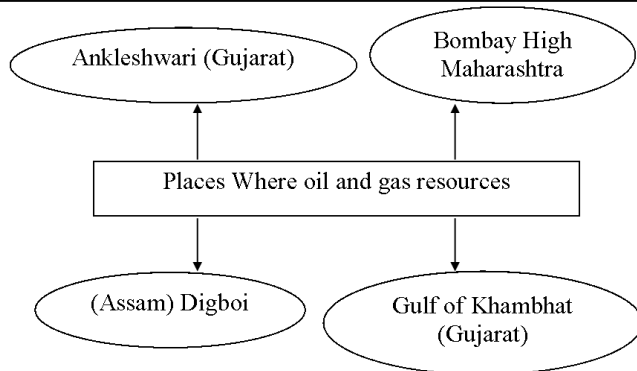
**Ans** Wrong pair: INSAT 1-B - Earth station

Corrected pair: INSAT 1-B – Space satellite

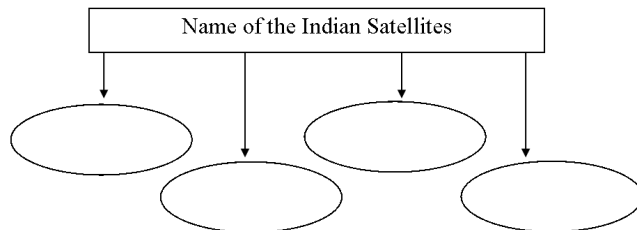
**Q.3 Complete the given concept map**



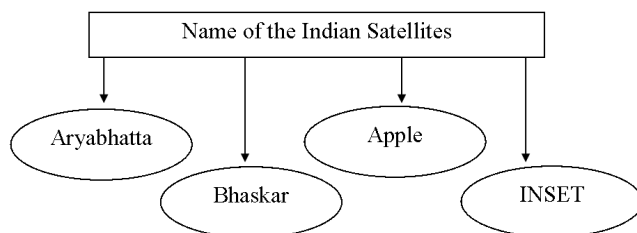
Ans



3



Ans



**Q.4 Explain the following concept / Short Notes**

4

1 Space research.

- Ans**
- In 1961, Indian National Committee for Space Research launched India's first research rocket from Thumba Equatorial Launch Centre in Thumba in The State of Kerala.
  - In 1969, our indigenously built rocket Rohini-75 was successfully launched.
  - In 1975, first Indian Satellite Aryabhata was successfully launched with the help from the Soviet Union.
  - This success proved that Indian scientists can indigenously build and launch satellite.
  - Indian scientists were confident that they could acquire the technology for sending a message from the earth station and to access the working of the satellite.

2 Telex Service

- Ans**
- In 1963, Department of telecommunications started the telex service under the ministry of Communications to transmit typed messages from one part of the country to another rapidly.
  - In 1969, the telex service started in Devanagari script in Delhi.
  - Later it spread all over the country.
  - Telex service began to be used in different fields.
  - With the rise of the internet after 1990, the significance of this service reduced.

**Q.5 Explain the statement stating reasons.**

6

1 Pandit Nehru established the Atomic energy Commission.

- Ans**
- India's first prime minister Jawaharlal Nehru wanted to nurture a scientific temper and bring about the nations progress.
  - From this perspective, Pandit Nehru set up the Atomic energy Commission.
  - Indian Atomic energy Commission was set on 10th August 1948.

2 USA imposed economic sanctions on India.

- Ans**
- On 11<sup>th</sup> May 1998, India carried out its second nuclear test to prove its Nuclear preparedness.
  - Three tests were done on this day, one of them was Hydrogen Bomb.
  - Prime minister Atal Bihari Vajpayee assured that there would be no first use of nuclear weapons by India, as a result USA imposed economic sanctions on India.

3 India decided to conduct nuclear tests.

- Ans**
- India successfully performed her first nuclear test at Pokharan, Rajasthan on 18<sup>th</sup> May 1974.
  - This was done in consonance with the policy of using nuclear energy for peaceful purposes and for self-sufficiency.
  - The reason why India decided to conduct nuclear tests was China's nuclear capability and Pakistan's desperate efforts to acquire nuclear weapons with China's help.
  - Dr. Homi Sethna, the chairman of the Indian Atomic Energy Commission and Dr Raja Ramanna, Director of the Atomic Research Centre played a major role in conducting this nuclear test.

**Q.6 Answer in brief**

**15**

**1** How one can do computerised reservation for rail travel?

- Ans**
- The technology adopted by railways has a big role in the history of modern India.
  - In order to bring efficiency, accuracy and coordination in the reservation system in rail travel, computerised reservation system was started for the first time in Delhi, 1984.
  - There are quite a few websites that allow you to book tickets online, of which IRCTC is notable.
  - IRCTC, short for "Indian Railway Catering and Tourism Corporation" is the railways' official website to book tickets.
  - Modes of payment online : Credit card, debit card, internet banking, cash cards.

**2** Write about Pokharan Nuclear test.

- Ans**
- India successfully performed her first nuclear test at Pokharan in Rajasthan on 18<sup>th</sup> May 1974 in consonance with the policy of using nuclear energy for peaceful purposes and for self-sufficiency.
  - The reason why India decided to conduct nuclear tests was China's nuclear capability and Pakistan's desperate efforts to acquire nuclear weapons with China's help.
  - U.S.A refused to give India the technology for defence related fields such as space research, communications and missile development.
  - As a result, India adopted a policy of developing its own missile development programme without depending upon the U.S.A.
  - Dr Homi Sethna, the chairman of the Indian Atomic Energy Commission and Dr Raja Ramanna, Director of the Atomic Research Centre played a major role in conducting this nuclear test.
  - Prime minister Indira Gandhi took the decision of carrying out a 'nuclear explosion'.
  - Pokharan was chosen on the basis of the required criteria for the location of the nuclear tests: far away from human settlement and no ground water reserves.

**3** Write the key features of Konkan Railway.

- Ans**
- Konkan railway started in 1998.
  - There are several records of technology to the credit of konkan railway which stretches over the four states of Maharashtra, Goa, Karnataka and Kerala over a distance of 760kms.
  - There are twelve tunnels on this track.
  - The 6.5km tunnel at Karbude is the longest tunnel.
  - There are 179 big and 1819 small bridges on this track.
  - Out of these, the 2065.8m long bridge on River Sharavati near Honnawar is the biggest.
  - The 64m tall bridge on river Panval near Ratnagiri is India's tallest bridge.
  - For avoiding accidents on tracks that are prone to landslides, there are sensors fitted to the railway engines.

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

**Ans** Satellites are used almost everyday by everyone. Satellites help many scientists get a perceptive view at all kinds of objects anywhere in the world.

Satellites are used for many things such as :

- Television
- Telephones
- Oceanography
- Communication Centre
- Navigation

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

- Ans**
- Integrated Guided Missile Development programme was conceived by and carried out under the leadership of Dr. A.P.J Abdul Kalam.

- ii. In 1958, Defence Research and Development Organisation (DRDO) was established under the Department of Defence of the Government of India.
- iii. DRDO undertook the task of building the missiles.
- iv. The objective of this organisation was to make India self sufficient with respect to means, equipment and weapons required for defence.
- v. After 1983, this organisation developed several missiles under the leadership of Dr. A.P.J Abdul Kalam.
- vi. In 1988, India successfully tested the missile Prithvi and in 1989, the missile Agni.
- vii. Prithvi-1 a surface to surface ballistic missile was given to the Army, Prithvi-2 to Air Force and Prithvi-3 to Navy.
- viii. Thus, Dr. Kalam has made great contributions in the production of missiles and that is why known as the father of India's missile programme and As the 'Missile Man' of India.

**Q.7 Read the passage and answer the questions based on it.**

**12**

**1**

In 1956, the Oil and Natural Gas Commission was established to search for the deposits of mineral oil and natural gas and to increase their production. After Digboi in Assam, mineral oil deposits were found in Ankleshwar area in Gujarat. Later, mineral oil and natural gas deposits were found in the gulf of Khambhat in Gujarat.

In 1974, the Oil and Natural Gas Commission started digging an oil well in 'Bombay High' area with the help of Russian scientists by a drillship called 'Sagar Samrat'. From 1975, mineral oil and natural gas began to be extracted from there. Later, more than 8500 oil wells and 33 natural gas wells dug eventually in this area began to contribute 38% of the total mineral oil production in the country and met 14% of the country's demand for crude oil.

- i. Which place mineral oil and Natural gas found.
- ii. Full Form of ONGC.
- iii. Why Natural gas usage increased in India according to you ?

**Ans** i. Gulf of Khambhat in Gujarat and Bombay High area mineral Oil and Natural gas found.

- ii. Oil and Natural Gas Commission.
- iii. India's appetite for natural gas is set to surge over the coming years, sharply lower prices of the fuel and a push up by the government to increase the usage of gas. Natural gas is considered to be a relatively clean fuel, India has been on a constant economic growth path from past two decades and so natural gas consumption has increased to thrust the past growing economy.

**2**

India's first Prime Minister Pandit Jawaharlal Nehru wanted to nurture a scientific temper and bring about the nation's progress. From this perspective, he set up the Indian Atomic Energy Commission on 10th August 1948. Dr Homi Bhabha was appointed as the first Chairman of the Commission were to produce electricity from atomic energy, increase the yield of food grains and make them last longer, set up the technology for achieving this and develop nanotechnology. In 1956, the Department of Atomic Energy set up 'Apsara', a nuclear reactor functioning on atomic energy.

In 1969, an atomic power station was set up at Tarapur. A Reactor Research Centre was set up at Kalpakkam in Tamil Nadu to successfully use Thorium for generating atomic power. The role of reactors is important in developing atomic power.

- i. What was the objective behind establishment of Atomic Energy Commission?
- ii. Which nuclear reactor was set up in the year 1956?
- iii. What was established in the year 1969 and where?
- iv. State the objective of Atomic Energy Commission.

**Ans** i. Pandit Jawaharlal Nehru wanted to nurture a scientific temper and bring about the nation's progress, so he set set up the Indian Atomic Energy Commission.

- ii. In 1956, the Department of Atomic Energy set up 'Apsara', a nuclear reactor functioning on atomic energy.
- iii. In 1969, a Reactor Research Centre was set up at Kalpakkam in Tamil Nadu.
- iv. The objectives of the commission were to produce electricity from atomic energy, increase the yield of food grains and make them last longer, set up the technology for achieving this and develop nanotechnology.

**3**

India successfully performed her first nuclear test at Pokharan in Rajasthan on 18<sup>th</sup> May 1974 in consonance with the policy of using nuclear energy for peaceful purposes and for self-sufficiency. The reason why India took this decision was China's nuclear capability and Pakistan's desperate efforts to acquire nuclear weapons with China's help. Dr Homi Sethna, the chairman of the Indian Atomic Energy Commission and Dr Raja Ramanna, Director of the Bhabha Atomic Research Centre played a major role

in conducting this nuclear test. Prime Minister Indira Gandhi took the decision of carrying out a 'nuclear explosion'. Pokharan was chosen on the basis of the required criteria for the location of the nuclear tests : for away from human settlement and no ground water reserves.

- i. Who took the decision of carrying out first nuclear explosion trial in India ?
- ii. What basis Pokharan was selected for Nuclear explosion ?
- iii. Why India decided to conduct nuclear test.

- Ans**
- i. Prime Minister Indira Gandhi took the decision of carrying out first nuclear explosion trial in Pokharan Rajasthan in India.
  - ii. Pokharan was selected for Nuclear explosion as it was far away from human settlement with no ground water reserves.
  - iii. India performed her first nuclear test at Pokharan in Rajasthan on 18<sup>th</sup> May 1974. China had acquired nuclear capability. Pakistan was making desperate efforts to acquire nuclear weapons with the help of china. To use nuclear energy for peaceful purpose and acquire self-sufficiency was its main objective.

