

# Chapter 4: Revolutionary Steps In Surgery

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## WARMING UP [PAGES 80 - 81]

### Warming up | Q 1. (1) | Page 80

**Discuss in your class.**

Do you like to study science?

### SOLUTION

yes, no, the reasons why

### Warming up | Q 1. (2) | Page 80

**Discuss in your class.**

What are the advantages of learning science?

### SOLUTION

knowledge, information - more career opportunities, etc.

### Warming up | Q 1. (3) | Page 80

Are robots truly useful to human beings? Why? Why not?

### SOLUTION

yes, no, why - examples of robots you have read of, seen in movies, etc.

### Warming up | Q 1. (4) | Page 80

How can we take help of robots in our daily life?

### SOLUTION

household chores - boring, monotonous work - heavy manual jobs - very intricate, minute jobs - dangerous jobs - operations, surgeries, etc.

### Warming up | Q 1. (5) | Page 80

Name some gadgets and appliances that we use in day-to-day life?

### SOLUTION

washing machine, mixer, grinder, gas stoves, TV, dishwasher, heaters, etc.

### Warming up | Q 2 | Page 80

**Imagine that one of your family members/friends/classmates has recently undergone surgery. You were curious and wanted to learn about his/her experience.**

Match the questions you asked with their answers.

1.	What health problem did you suffer from?	a.	I was given a bath and I wore a surgical gown.
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2.	Whom did you inform about it first?	b.	I was given an injection of anesthesia.
3.	What type of doctor did you consult?	c.	I consulted an orthopedic surgeon.
4.	How did he/she find out that you needed a surgery?	d.	I was relieved and happy that the operation was over.
5.	What preparation was done before the surgery?	e.	I had fractured my ankle while playing hockey.
6.	What did you feel when you were taken to the operation theatre?	f.	No, I did not feel anything. I was fast asleep.
7.	What was the first step before the actual surgery?	g.	I recovered and I could walk normally after 3 weeks.
8.	Did you feel any pain during the surgery?	h.	Our school hockey coach.
9.	What did you feel when you opened your eyes after the operation?	i.	The doctor took an X-ray of my ankle, and he found a fracture in my ankle.
10.	How soon did you recover?	j.	I was very nervous.

### **SOLUTION**

1.	What health problem did you suffer from?	a.	I had fractured my ankle while playing hockey.
2.	Whom did you inform about it first?	b.	Our school hockey coach.
3.	What type of doctor did you consult?	c.	I consulted an orthopedic surgeon.
4.	How did he/she find out that you needed surgery?	d.	The doctor took an X-ray of my ankle, and he found a fracture in my ankle.
5.	What preparation was done before the surgery?	e.	I was given a bath and I wore a surgical gown.
6.	How did you feel when you were taken to the operation theatre?	f.	I was very nervous.
7.	What was the first step before the actual surgery?	g.	I was given an injection of anesthesia.
8.	Did you feel any pain during the surgery?	h.	No, I did not feel anything. I was fast asleep.
9.	What did you feel when you opened your eyes after the operation?	i.	I was relieved and happy that the operation was over.
10.	How soon did you recover?	j.	I recovered and I could walk normally after three weeks.

**Warming up | Q 3. (1) | Page 81**

**Separate the clauses in the following sentences and write the conjunction**

The thief stole the money and he ran away.

Clause (1) \_\_\_\_\_

Clause (2) \_\_\_\_\_

Conjunction:

**SOLUTION**

Clause (i): The thief stole the money.

Clause (ii): he ran away

Conjunction: and

**Warming up | Q 3. (2) | Page 81**

She told me that she was a doctor.

Clause (1) \_\_\_\_\_

Clause (2) \_\_\_\_\_

Conjunction:

**SOLUTION**

Clause (i): She told me

Clause (ii): that she was a doctor

Conjunction: that

**Warming up | Q 3. (3) | Page 81**

He ran fast but he did not win the race.

Clause (1) \_\_\_\_\_

Clause (2) \_\_\_\_\_

Conjunction:

**SOLUTION**

Clause (i): He ran fast

Clause (ii): he did not win the race

Conjunction: but

**Warming up | Q 3. (4)**

The traveller arrived at the station after the train had left.

Clause (1) \_\_\_\_\_

Clause (2) \_\_\_\_\_

Conjunction :

**SOLUTION**

**Clause (i):** The traveller arrived at the station

**Clause (ii):** after the train had left

Conjunction: after

### **ENGLISH WORKSHOP [PAGES 84 - 86]**

#### **English workshop | Q 1. (a) | Page 84**

**Read the lesson and name the following.**

First surgeon to perform operations \_\_\_\_\_.

#### **SOLUTION**

First surgeon to perform operations: Sushruta

#### **English workshop | Q 1. (b) | Page 84**

**Read the lesson and name the following.**

Anaesthetics used from mid 19th century

#### **SOLUTION**

Anaesthetics used from mid 19th century -ether and chloroform.

#### **English workshop | Q 1. (c) | Page 84**

**Read the lesson and name the following.**

First successful Cardiac Surgeon

#### **SOLUTION**

First successful Cardiac Surgeon - Dr Williams

#### **English workshop | Q 1. (d) | Page 84**

**Read the lesson and name the following.**

A sack around the heart

#### **SOLUTION**

A sack around the heart - pericardium

#### **English workshop | Q 1. (e) | Page 84**

**Read the lesson and name the following.**

Father of modern neurosurgery

#### **SOLUTION**

Father of modern neurosurgery - Harvey Cushing

#### **English workshop | Q 1. (f) | Page 84**

**Read the lesson and name the following.**

World's most advanced surgical robot

**SOLUTION**

World's most advanced surgical robot - the Da Vinci.

**English workshop | Q 2 | Page 84**

Match the terms in 'A' with their explanation in 'B'.

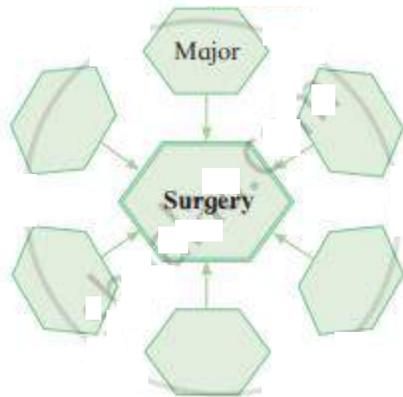
column A	column B
tooth- extraction	a cut made for surgery
cardiac	having length, breadth, and depth
sedative	plastic surgery
tumor	related to the heart
incision	a control unit for a robotic surgery
a console	removing a decayed tooth
3-D	a substance that makes a person sleep
Cushing clip	an extra growth in the body
	a device to stop blood loss in neurosurgery

**SOLUTION**

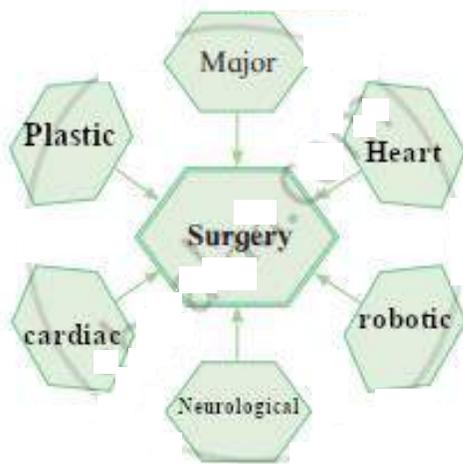
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3-D	having length, breadth, and depth
Cushing clip	a device to stop blood loss in neurosurgery

**English workshop | Q 3 | Page 85**

Fill in the web with words related to 'Surgery'.



**SOLUTION**



**English workshop | Q 4. (a) | Page 85**

Write 3 to 4 lines about the following in your own words.

**‘Sushruta Samhita’**

**SOLUTION**

It is thought that Sushruta was probably the first surgeon to perform surgical operations, and the Sushruta Samhita is one of the oldest works in the world that deal with surgery.

**English workshop | Q 4. (b) | Page 85**

Write 3 to 4 lines about the following in your own words.

First Cardiac Surgery

**SOLUTION**

The first cardiac surgery was done by Dr. Williams. A patient, James Cornish, was suffering from a very serious knife wound, and the knife had cut an artery less than an inch from his heart. It had punctured the pericardium. Dr. Williams and six staff doctors

performed a complicated and daring operation and repaired the heart. This became the first successful cardiac surgery.

**English workshop | Q 4. (c) | Page 85**

**Write 3 to 4 lines about the following in your own words.**

First Neurosurgeon

**SOLUTION**

Harvey Cushing was the first neurosurgeon and is considered to be the father of modern neurological surgery. In the early part of the 20th century, he developed basic techniques and instruments for operating on the brain. Cushing reduced the mortality rate for neurosurgery from 90% to less than 10%. By 1937, when he retired, he had successfully removed more than 2000 tumors. One of his most significant achievements was the development of a method to stem blood loss by inventing a clip called the 'silver clip' or the 'Cushing clip'.

**English workshop | Q 4. (d) | Page 85**

**Write 3 to 4 lines about the following in your own words.**

The Robotic Surgery

**SOLUTION**

Robotic surgery is a type of minimally invasive surgery. Use is made of miniature surgical instruments, that fit through quarter-inch incisions. Robotic surgery gives the surgeon a 3-D view of the operating site. Every movement he makes with the master controls is replicated accurately by the robot. When necessary, the surgeon can even change the scale of the robot's movements. Surgeons can use this technology to perform complex surgical procedures.

**English workshop | Q 5. (A) | Page 85**

Fill in the gap in the table of Degrees of Comparison.

	<b>Positive</b>	<b>Comparative</b>	<b>Superlative</b>
(1)	_____	_____	oldest
(2)	_____	healthier	_____
(3)	near	_____	_____
(4)	_____	finer	_____
(5)	_____	_____	earliest
(6)	small	_____	_____
(7)	_____	faster	_____

(8)	high	_____	_____
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**SOLUTION**

	Positive	Comparative	Superlative
(1)	<u>old</u>	<u>older</u>	oldest
(2)	<u>healthy</u>	healthier	<u>healthiest</u>
(3)	near	<u>nearer</u>	<u>nearest</u>
(4)	<u>fine</u>	finer	<u>finest</u>
(5)	<u>early</u>	<u>earlier</u>	earliest
(6)	small	<u>smaller</u>	<u>smallest</u>
(7)	<u>fast</u>	faster	<u>fastest</u>
(8)	high	<u>higher</u>	<u>highest</u>

**English workshop | Q 5. (B) | Page 86**

Give the Comparative and Superlative forms of -

Positive	Comparative	Superlative
ancient		
special		
significant		
advanced		
accurate		

**SOLUTION**

Positive	Comparative	Superlative
ancient	<u>more ancient</u>	<u>most ancient</u>
special	<u>more special</u>	<u>most special</u>
significant	<u>more significant</u>	<u>most significant</u>
advanced	<u>more advanced</u>	<u>most advanced</u>
accurate	<u>more accurate</u>	<u>most accurate</u>

**English workshop | Q 6. (a) | Page 86**

**Join the sentence using appropriate Co-ordinators. (but, or, so, and)**

There was a lack of technology. Major surgery could not develop for centuries.

**SOLUTION**

There was a lack of technology, So, major surgery could not develop for centuries.

**English workshop | Q 6. (b) | Page 86**

**Join the sentences using appropriate Co-ordinators. (but, or, so, and)**

Cardiac Surgery was tried in the past. Patients did not survive.

**SOLUTION**

Cardiac surgery was tried in the past but patients did not survive.

**English workshop | Q 6. (c) | Page 86**

**Join the sentences using appropriate Co-ordinators. (but, or, so, and)**

Open heart surgery can help to repair heart valves. It can also replace them

**SOLUTION**

Open heart surgery can help to repair heart valves or replace them.

**English workshop | Q 6. (d) | Page 86**

**Join the sentences using appropriate Co-ordinators. (but, or, so, and)**

Heart patients were treated with sedatives. They did not survive.

**SOLUTION**

Heart patients were treated with sedatives but they did not survive.

**English workshop | Q 6. (e) | Page 86**

**Join the sentences using appropriate Co-ordinators. (but, or, so, and)**

These procedures can be performed through very small incisions. Our patients experience a number of benefits.

**SOLUTION**

These procedures can be performed through very small incisions, so our patients experience a number of benefits.

**English workshop | Q 7 | Page 86**

Write in your notebook an imaginary telephonic conversation between you and your family - doctor's secretary, asking for an appointment to consult the doctor for a health problem you are suffering from. Begin with.....

Secretary: Good morning! This is XYZ Clinic. How can I help you?

Myself: Good morning! I am.....

**SOLUTION**

<b>Secretary:</b>	Good morning! This is the Wellness Clinic. How can I help you?
<b>Myself:</b>	Good morning! I am Ishita kotian. I would like an appointment with Dr. Sucheta. I am an old patient.
<b>Secretary:</b>	Oh, hello, ishita. Yes, of course. When would you like an appointment for?
<b>Myself:</b>	As soon as possible, Ma'am.
<b>Secretary:</b>	I can fit you in tomorrow.
<b>Myself:</b>	What time tomorrow?
<b>Secretary:</b>	Can you come in at 11 a.m. tomorrow?
<b>Myself:</b>	No, I'm sorry. I have to attend some extra classes. Can you give me an appointment in the evening?
<b>Secretary:</b>	6 p.m.?
<b>Myself:</b>	Oh yes, that will be fine. 6 p.m. tomorrow. Thank you.
<b>Secretary:</b>	Anytime, ishita. Goodnight.

**English workshop | Q 8. (c) | Page 86**

**Join the sentences using appropriate Co-ordinators. (but, or, so, and)**

He places his fingers into the master controls. He operates all four arms of the Da Vinci.

**SOLUTION**

He places his fingers into the master controls **and** operates all four arms of the Da Vinci.