

## **4.2 Revolutionary Steps in Surgery**

**Warning up:-**

**1. Discuss in your class.**

**(1) Do you like to study science?**

**Ans:-** yes, no, the reason why.

**(2) What are the advantages of learning science?**

**Ans:-** knowledge, information-more career opportunities, etc.

**(3) Are robots truly useful to human beings? Why? Why not?**

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

**(4) How can we take help of robots in our daily life?**

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

**(5) Name some gadgets and appliances that we use in day-to-day life.**

**Ans:-** washing machine, mixer, grinder, gas stoves, TV, dishwashers, heaters, etc.

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

**Match the questions you asked with their answers.**

**Ans:-**

**(1) What health problem did you suffer from?**

**Ans:-** I had fractured my ankle while playing hockey.

**(2) Whom did you inform about it first?**

**Ans:-** Our school hockey coach.

**(3) What type of doctor did you consult?**

**Ans:-** I consulted an orthopedic surgeon.

**(4) How did he/she find out that you needed a Surgery?**

**Ans:-** The doctor took an X-ray of my ankle, and he found a fracture in my ankle.

**(5) What preparation was done the surgery?**

**Ans:-** I was given a bath and I wore surgical gown.

**(6) How did you feel when you were taken to the operation theatre?**

**Ans:-** I was very nervous.

**(7) What was the first step before the actual surgery?**

**Ans:-** I was given an injection of anaesthesia.

**(8) Did you feel any pain during the surgery?**

**Ans:-** No, I did not feel anything. I was fast asleep.

**(9) What did you feel when you opened your eyes after the operation?**

**Ans:-** I was relieved and happy that the operation was over.

**(10) How soon did you recover?**

**Ans:-** I recovered and I could walk normally after three weeks.

**3. We have learnt that sentences may have two, three or more sets of subject + predicate, joined by a conjunction. Each set of subject and predicate that is a part of a larger sentence is called a clause.**

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

**(1) The thief stole the money and he ran away.**

**Ans:-** Clause (1):- The thief stole the money.

Clause (2):- he ran away.

Conjunction:- and.

**(2) She told me that she was a doctor.**

**Ans:-** Clause (1):- she told me.

Clause (2):- that she was a doctor.

Conjunction:- that.

**(3) He ran fast but he did not win the race.**

**Ans:-** Clause (1):- he ran fast.

Clause (2):- he did not win the race.

Conjunction:- but.

**(4) The traveller arrived at the station after the train had left.**

**Ans:-** Clause (1):- The traveller arrived at the station.

Clause (2):- after the train had left.

Conjunction:- after.

#### **4. Coordination.**

**Observe the clauses in the following sentences.**

(1) He is intelligent and he is hardworking.

(2) Asit was tired but he could not rest.

(3) You can go for a walk or you can exercise at home.

(4) Seema has recovered from fever, so she can attend school.

Each of the above sentences has clauses that do not depend on each other for complete sense. They are called Independent or Co-ordinate clauses. They are joined by conjunctions like and, but or so. Such conjunctions are called **Co-ordinators**.

**Other Co-ordinators are:-**

- (1) as well as/not only..... but also.
- (2) yet/still/however/nevertheless.
- (3) or/nor/else/either .....or/neither ..... nor.
- (4) so/therefore/thus/hence/ for.

**From the sentences given in Activity 2 pick out two sentences having Co-ordinate Clauses. Point out the Co-ordinators.**

**Ans:-**

**(1) I was given a bath and I wore a surgical gown.**

**Ans:-** Coordinate Clause (i):- I was given a bath.

Coordinate Clause (ii):- I wore a surgical gown.

Conjunction:- and

**(2) The doctor took an X-ray of my ankle and he found a fracture in my ankle.**

**Ans:-** Coordinate Clause (i):- The doctor took an X-ray of my ankle.

Coordinate Clause (ii):- He found fracture in my ankle.

Conjunction:- and

**ENGLISH WORKSHOP:-**

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

**(a) The first surgeon to perform operations.....**

**Ans:-** Sushruta.

**(b) Anaesthetics used from mid 19th century.....**

**Ans:-** ether and chloroform.

**(c) The first successful Cardiac Surgeon.....**

**Ans:-** Dr Williams.

**(d) A sack around the heart.....**

**Ans:-** pericardium.

**(e) The father of modern neurosurgery.....**

**Ans:-** Harvey Cushing.

**(f) The world's most advanced surgical robot.....**

**Ans:-** the Da Vinci.

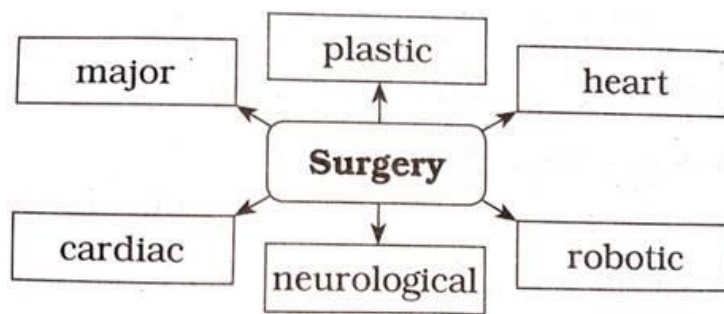
**2. Match the terms in 'A' with their explanation in 'B'.**

<b>'A'</b>	<b>'B'</b>	<b>Ans:-</b>
(1) tooth-extraction	(a) a cut made for surgery	(1) tooth- extraction:- removing a decayed tooth.

(2) cardiac	(b) having length, breadth and depth	(2) cardiac:- related to the heart.
(3) sedative	(c) plastic surgery	(3) sedative:- substance that makes a person sleep.
(4) tumour	(d) related to the heart	(4) tumour:- an extra growth in the body.
(5) incision	(e) a control unit for a robotic surgery	(5) incision:- a cut made for surgery.
(6) a console	(f) removing a decayed tooth	(6) a console:- a control unit for a robotic surgery.
(7) 3-D	(g) substance that makes a person sleep	(7) 3-D:- having length, breadth and depth.
(8) Cushing clip	(h) an extra growth in the body	(8) Cushing clip:- a device to stop blood loss in neurosurgery.

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

Ans.



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

#### (a) 'Sushruta Samhita'

**Ans:-** 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.

#### (b) First Cardiac Surgery

**Ans:-** 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.

#### (c) First Neurosurgeon

**Ans:-** 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 tumours. 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'.

**(d) The Robotic Surgery**

**Ans:-** Robotic surgery is a type of minimal 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.

**5. (A) Fill in the gaps in the table of Degrees of Comparison.**

<b>positive:-</b>	<b>Comparative:-</b>	<b>Superlative:-</b>
old	older	oldest
healthy	healthier	healthiest
near	nearer	nearest
fine	finer	finest
early	earlier	earliest
small	smaller	smallest
fast	faster	fastest
high	higher	highest

**(B) Adjectives that have more than two syllables (long words) take 'more' and 'most' before them to form Comparative and Superlative degrees.**

**For example:** successful:- Positive Degree

more successful:- Comparative Degree    most successful:- Superlative Degree

**Give the Comparative and Superlative forms of:-**

<b>Positive:-</b>	<b>Comparative:-</b>	<b>Superlative:-</b>
(1) ancient	more ancient	most ancient
(2) special	more special	most special
(3) significant	more significant	most significant
(4) advanced	more advanced	most advanced
(5) accurate	more accurate	most accurate

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

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

**Ans:-** There was lack of technology, so major surgery could not develop for centuries.

**(b) Cardiac Surgery was tried in the past. Patients did not survive.**

**Ans:-** Cardiac surgery was tried in the past but patients did not survive.

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

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

**(d) Open heart surgery can help to repair heart valves. It can also replace them.**

**Ans:-** Open heart surgery can help to repair heart valves or replace them.

**(e) Heart patients were treated with sedatives. They did not survive.**

**Ans:-** Heart patients were treated with sedatives but they did not survive.

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

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

**7. 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.....

**Ans:-**

**Secretary:-** Good morning! This is Wellness Clinic. How can I help you?

**Myself:-** Good morning! I am Neha Pal. I would like an appointment with Dr. Iyer. I am an old patient.

**Secretary:-** Oh, hello, Neha. Yes, of course, When would like an appointment for

**Myself:-** As soon as possible. Ma'am.

**Secretary :-** I can fit you in tomorrow.

**Myself:-** What time tomorrow?

**Secretary:-** Can you come in at 11 a.m. tomorrow?

**Myself:-** No, I'm sorry. I have to attend some extra classes. Can you give me an appointment in the evening?

**Secretary:-** 6 p.m.?

**Myself:-** Oh yes, that will be fine. 6 p.m. tomorrow. Thank you.

**Secretary:-** Anytime, Neha. Goodnight.

**Myself:-** Goodnight.