UNIT 1  STEM CELLS

Structure
1.0 Objectives
1.1 Pre-Reading
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1.0 OBJECTIVES

This Unit attempts to develop in the learner ability to:
• read an expository text on a scientific topic and understand its main points;
• comprehend new lexical items using cues from within the text;
• make inferences from the text;
• make predictions;
• look for patterns and generalize;
• describe an object or a process in a scientific manner; and
• practice the structure ‘used to/get used to’.

1.1 PRE-READING

Activity 1
1. What do these words mean? Match the words/phrases in column A with those in column B.

<table>
<thead>
<tr>
<th>Column A</th>
<th>Column B</th>
</tr>
</thead>
<tbody>
<tr>
<td>Diabetes</td>
<td>a) a serious disease in which growth of confused cells form in the body and kill normal body cells</td>
</tr>
<tr>
<td>Coronary disease</td>
<td>b) a disease that causes pain and swelling in one or more joints of the body</td>
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<tr>
<td>Cancer</td>
<td>c) a condition in which the bones become weak and are easily broken</td>
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<td>Hypertension</td>
<td>d) a medical condition caused by lack of insulin, which makes the patient pass a lot of urine and feel very thirsty</td>
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<tr>
<td>Parkinson’s Syndrome</td>
<td>e) a disease connected with the heart, especially the arteries that take blood to the heart</td>
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<td>Osteoporosis</td>
<td>f) blood pressure that is higher than normal</td>
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<td>Arthritis</td>
<td>g) a disease of the nervous system that gets worse over a period of time and causes the muscles to become weak and the limbs to shake</td>
</tr>
</tbody>
</table>
2. Which of these diseases gets worse as time passes (a degenerative disease)?

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1.2 READING COMPREHENSION: STEM CELLS

Read this passage on Stem Cells and answer the questions below it:

Stem cells are one of the most fascinating areas of biology today. Research on stem cells has shown how an organism develops from a single cell and how healthy cells replace damaged cells in adult organisms. Stem cells can be used effectively in the treatment of many diseases. Such cell-based therapies are called regenerative or reparative medicine.

1. What are stem cells?

Stem cells have two important characteristics that distinguish them from other types of cells. First, they are unspecialized cells that renew themselves for long periods through cell division. The second is that under certain physiologic or experimental conditions, they can be induced to become cells with special functions such as the beating cells of the heart muscle or the insulin-producing cells of the pancreas.

Scientists primarily work with two kinds of stem cells from animals and humans: embryonic stem cells and adult stem cells, which have different functions and characteristics. Scientists discovered ways to obtain or derive stem cells from early mouse embryos more than 20 years ago. Many years of detailed study of the biology of mouse stem cells led to the discovery, in 1998, of the process of isolating stem cells from human embryos and growing the cells in the laboratory. These are called human embryonic stem cells. The embryos used in these studies were created to treat infertility through in vitro fertilization procedures and when they were no longer needed for that purpose, they were donated for research with the informed consent of the donor.

Stem cells are important for living organisms for many reasons. In the 3- to 5-day-old embryo, called a blastocyst, stem cells in developing tissues give rise to the multiple specialized cell types that make up the heart, lung, skin, and other tissues. In some adult tissues, such as bone marrow, muscle, and brain, discrete populations of adult stem cells generate replacements for cells that are lost through normal wear and tear, injury, or disease.

Scientists believe that stem cells may, at some point in the future, become the basis for treating diseases such as Parkinson’s disease, diabetes, and heart disease.

They want to study stem cells in the laboratory so they can learn about their essential properties and what makes them different from specialized cell types. As scientists learn more about stem cells, it may become possible to use the cells not just in cell-based therapies, but also for screening new drugs and toxins and understanding birth defects. In order to develop such treatments, scientists are intensively studying the fundamental properties of stem cells, which include:

- determining precisely how stem cells remain unspecialized and self renewing for many years; and
- identifying the signals that cause stem cells to become specialized cells.

(From the Internet http://stemcells.nih.gov/info/basics/basics3.asp)
2. What are the unique properties of all stem cells?

Stem cells differ from other kinds of cells in the body. All stem cells have three general properties: they are capable of dividing and renewing themselves for long periods; they are unspecialized; and they can give rise to specialized cell types.

Scientists are trying to understand two fundamental properties of stem cells that relate to their long-term self-renewal:

- why can embryonic stem cells proliferate for a year or more in the laboratory without differentiating, but most adult stem cells cannot; and
- what are the factors in living organisms that normally regulate stem cell proliferation and self-renewal?

An understanding of these two properties may make it possible to understand how cell proliferation is regulated during normal embryonic development or during the abnormal cell division that leads to cancer. Importantly, such information would enable scientists to grow embryonic and adult stem cells more efficiently in the laboratory.

Stem cells are unspecialized. One of the fundamental properties of a stem cell is that it does not have any tissue-specific structures that allow it to perform specialized functions like pumping blood through the body (like a heart muscle cell); or carrying molecules of oxygen through the bloodstream (like a red blood cell); or fire electrochemical signals to other cells that allow the body to move or speak (like a nerve cell). However, unspecialized stem cells can give rise to specialized cells, including heart muscle cells, blood cells, or nerve cells.

Stem cells are capable of dividing and renewing themselves for long periods. Unlike muscle cells, blood cells, or nerve cells — which do not normally replicate themselves — stem cells may replicate many times. This is called proliferation. A starting population of stem cells that proliferates for many months in the laboratory can yield millions of cells. If the resulting cells continue to be unspecialized, like the parent stem cells, the cells are said to be capable of long-term self-renewal.

The specific factors and conditions that allow stem cells to remain unspecialized are of great interest to scientists who have been able to grow stem cells in the laboratory after many years of trial and error.

Glossary

i) embryos: a young animal or plant in the very stages of development before birth

ii) in vitro fertilization: fertilization that takes place outside a living body

iii) Parkinson’s disease: disease of the nervous system that gets worse over a period of time and causes muscles to become weak and the limbs to shake

iv) cell-based therapies: the treatment of a physical problem or a disease through the use of stem cells

v) proliferate: increase rapidly in number

Check Your Progress 1

1. Reread the given passage and complete the sentences given below. Select the most appropriate phrase from those given.

i) Stem cells can be used profitably in treating .............. diseases.
   a) contagious
   b) degenerative
c) infectious
d) none of the above

ii) Stem cells are different from other cells because…
   a) they are unspecialized cells which can renew themselves but cannot take on the function of specialized cells.
   b) they are unspecialized cells which cannot renew themselves or take on the function of specialized cells.
   c) they are unspecialized cells which can renew themselves and can, under special circumstances, take on the function of specialized cells.
   d) they are specialized cells which can renew themselves but cannot take on the function of other specialized cells.

iii) The embryonic stem cells are taken from very young embryos that have been …
   a) created in the mother’s body through a natural process
   b) created and placed in the mother’s womb for a certain period
   c) created in laboratory conditions outside the mother’s body
   d) none of the above

iv) A blastocyst has a lot of promise in regenerative therapy because…
   a) it develops tissues that develop different kinds of specialized cells
   b) it develops tissues that develop different kinds of unspecialized cells
   c) it is easy to procure in the laboratory
   d) it has highly specialized cells to begin with

v) Amongst different organs in the human body the ……… ……… ……… have the capacity to regenerate themselves in case of wear and tear, injury or disease due to the presence of some discrete cells.
   a) heart, lung and liver
   b) heart, lung and skin
   c) heart, bone marrow and brain
   d) brain, bone marrow and muscle

vi) Cell-based therapies can be useful in diseases like…
   a) fractures, diabetes and heart disease
   b) Parkinson’s disease, diabetes and heart disease
   c) fractures, Parkinson’s disease and diabetes
   d) Parkinson’s disease, fractures and heart disease

vii) Embryonic stem cells are different from adult stem cells in their ability to …
   a) proliferate and differentiate as specialized cells right at the outset
   b) proliferate only as unspecialized cells
   c) proliferate without differentiating for a long time
   d) proliferate without differentiating at all

viii) The word proliferation means…
   a) amplification
   b) duplication
   c) differentiation
   d) replication
Given below are some statements. Say whether they are true or false.

i) Stem cells are trained to take on the functions of specialized cells.

ii) Special cells are such as can do special functions like make the heart beat, produce insulin.

iii) Scientists learnt to isolate the stem cells from the embryo by studying closely the method of isolating stem cells from embryos of animals like the mouse.

iv) The human embryonic cells are the ones that grew and multiplied during artificial fertilization outside the body.

v) The only use of stem cell that scientists can foresee is their use in diseases like diabetes, heart disease and nerve diseases.

vi) Stem cells need some signals to transform themselves into specialized cells.

vii) Stem cells can also help in the study of cancers and prohibiting their growth.

viii) Muscle cells, blood cells and nerve cells can replicate themselves.

Answer these questions.

3. Embryonic stem cells have a lot of potential in the treatment of which serious diseases.

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4. What characteristics of the stem cells are the scientists trying to study closely?

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5. What are the unique characteristics of stem cells that make them so valuable in the world of medicine?

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6. Do you think that extraction of embryonic stem cells is ethical? Why/Why not?

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1.3 VOCABULARY

Check Your Progress 2

1. You would notice that the first paragraph of the text has two words ‘reparative’ and ‘regenerative.’ Reparative is a word derived from the word ‘repair’ [re+pair (adjectival form)] and it means ‘that which can be repaired’. Regenerative is a word derived from ‘generate’ which means to create ‘new ones of a kind’. Hence here it means therapy that allows the body to generate new cells.
Given below are a few more words that begin with ‘re’. Match them with their meanings given below.

i) recuperative  
ii) respond  
iii) resuscitation  
iv) reconstructive  
v) remedial  
vi) restorative  
vii) refractory  
viii) relapse  

a) helping you to get better after you have been very ill or sick.  
b) making you feel strong and healthy again; medical treatment that repairs the body or a part of it  
c) to make somebody start breathing again or become conscious again after they have almost died  
d) to improve as a result of a particular kind of treatment.  
e) aimed at solving a problem, especially when this involves correcting or improving something that has been done wrong  
f) becoming or making something less advanced  
g) only used in context of medical treatment that involves reconstruction of a part of a person’s body which has been badly damaged  
h) happens again like illness  
i) of a disease or medical condition that cannot be treated or cured  
j) fact of becoming ill again

2. There are words that are normally used for a certain specific contexts. Pick the appropriate words from those given below and complete the passage.

anesthetist  
masks  
gauze  
instruments  
fetal (like a foetus)  
antiseptic  
théâtre  
surgeon  

The large operation …………………………………smelt strongly of ……………..  
She looked at the shining steel ……………………………as they lay on the side table. Also there was a lot of ……………….., cotton wool and some bigger instruments which she did not recognize. Soon the …………….. team arrived. Each was dressed in the gowns and …………….. meant for only such occasions. The nurse readied her by applying antiseptic and some local …………….. which would not let her feel any pain when the ………………injected her backbone with anesthesia. The anesthetist arrived and asked her to get into the ……………..position. Soon she felt a jab in her back. All this while the doctor was talking to her to distract her from what was happening. A few moments and she felt as if the lower part of her body was not hers. She felt no sensation there. The …………………. arrived soon after and she felt probing hands and fingers on her abdomen.

1.4 GRAMMAR: USED TO/GET USED TO  

Read the paragraph given below:

Medical doctors are used to long working hours and have a grueling schedule. One wonders where they get so much of stamina. In fact this is a part of their training. It is during their internship and their residency programmes that doctors get used to heavy schedules and long duty hours. Soon it is a way of life.  

We use ‘are/is + used to’ with reference to things/events/actions.  

We are used to getting up early in the morning.
The soldiers are used to living on dry rations in remote areas.

We use ‘get used to’ with events like frequent rains or hot spells of weather as well as situations. Examples:

Don’t worry, you will soon get used to the heat and humidity of Chennai.

Old people feel sad when their children leave home. But they get used to their loneliness gradually.

Check Your Progress 3

1. Read the sentences and complete them. Use ‘be/get+ used to/not used to’ appropriately as shown in the sentences above.

i) When I reached New York it was snowing. I …………………. such weather. I pulled out my woollens and wore them layer upon layer till I felt warm and cozy. But now I had a new problem. I was unable to move comfortably as I ……………………to wearing heavy woollens. Seven years have passed since then. Now I have …………………. to the cold. I don’t need to pile woollens on my body. I manage with a thick jacket.

ii) She was taken aback. She was to finish her dinner at 6.30 which was served in the large mess. She ……………………….. eating her dinner so early. Surely she would not be hungry at that time. That was her teatime! But she decided to follow the regimen of the ashram. Now six months later she ………………………. to the routine. She does not miss her evening tea and snacks either.

2. What would they say in these situations? Use I’m (not) used to and complete the sentences.

i) Lata’s school starts very early. She leaves home at 6.30 in the morning. She does not mind it.

Friend: Doesn’t getting up so early bother you sometimes?

Lata: Not really. I…………………………this schedule. I have been doing it for the last fifteen years.

ii) Shyam is new to the hostel. He likes to bathe everyday and wear clean clothes. He does not like to share his clothes with anyone.

Friend: Hey, Shyam why are you worried about the laundry not arriving? Why don’t just take my shirt and wear it for today?

Shyam: I am afraid I don’t like the idea. I ……………………….sharing clothes with anyone.

iii) Mr. Gill has been his own master for so many years. He has worked on his own terms and has had no boss in the real sense of the term. Now he has joined a company.

Manager: Well, Mr. Gill you will be part of my team? Is that fine with you?

Mr. Gill: Not exactly. I ………………………. taking orders from anyone. But I guess I will have to ………………………..

iv) Neera was prescribed four medicines by her doctor. She had never taken so many medicines before. So she would often forget them.

Doctor: I find you do not take your medicines regularly.

Neera: I’m sorry, Doctor, I forget. You see I…………………………. so many medicines. Don’t worry I think I ……………………….in a week or two.
Mr. Lobo is happy in the Old People’s Home. It was difficult in the beginning but now he has got adjusted to the people around him.

Friend: Mr. Lobo, do you like it here in the Home?

Mr. Lobo: Well, you can say that I ………………………………

1.5 WRITING: DESCRIBING A PROCESS

When we write an essay describing a process, we need to keep in mind the audience. If they are technical people who know the terms and expressions, we need not explain the terms. If, however, we are writing for lay people who may not have the technical knowledge we need to explain certain terms and procedures.

Check Your Progress 4

Given below is a grid that contains the essential questions and their answers in brief. Use the ideas to describe the process of ‘Liposuction’, a technique by which excess fat from the body is removed.

Your write-up will contain the following sub headings: Introduction, General methods, types of methods, the right candidates for the procedure, instruments or skills required, steps of the procedure, risks and conclusion.

| 1. What is the process you are trying to explain? | • Liposuction, a cosmetic surgery, removes fat from different parts of the body: abdomen, thighs, neck, waist, buttocks etc. |
| Who is it important for? | • People with excessive fat |
| How does it help them? | • For cosmetic purposes, people with no time or ability to exercise or diet |
| | • Easy method to lose fat to make body shapely |
| 2. How is it done? | Fat removed through a hollow tube (cannula); quantity of fat removed in a session depends upon the doctor and patient; at the most 5 kgs can be removed; local or general anesthesia used. |
| 3. Are there different ways of doing the process? If so, what are they? | • Wet liposuction in which a little fluid (less than the quantity of fat to be removed) containing anesthesia, medicine to prevent bleeding and a little salt |
| | • Super wet, same amount of fluid as the amount of fat to be removed, complete anesthesia is used, for high amount of liposuction |
| | • Laser assisted liposuction, a cannula tipped with a diode laser emitter is used to emulsify the fat |
| | • Tumescent Liposuction, a large amount of fluid 3 to 4 times the quantity of fat to be removed, creates space between muscle and fatty tissue. |
| 4. Any important requirement | • Patient needs to be healthy, |
| for the procedure/Who are the right candidates for the procedure? | • Over 18 years but not old  
• Would have tried other normal methods of losing fat and failed  
• Would have given up smoking for sometime before the procedure |
|---|---|
| 5. What skills/equipment are needed for this? | • Plastic surgeon, highly skilled in his job  
• Ability to monitor the general condition of the patient during procedure  
• Cannula  
• Anesthesia, drugs to stop bleeding, lasers diodes for laser method, great skill to emulsify the fat and suck it thorough power or ultra sound. |
| 6. How many steps are there in the process? | • Preparation of the patient, informing of risks, making sure he/she is a good candidate  
• administering antibiotic an hour before  
• taking photographs for before and after comparison  
• marking of target area  
• application of sterilizing solution to relevant areas,  
• giving sedatives or anesthesia  
• making a small incision, giving saline fluid to the patient  
• conducting the liposuction  
• monitoring the blood pressure, heart beat and blood oxygen level  
• stitching the incision or leaving it open  
• discharging patient if fit enough to walk home in case general anesthesia not given. |
| 7. Recovery and risks | • Bandages or a compression garment for a few days  
• Removing stitches if required  
• Giving painkillers  
• Advising to drink a lot of water  
• No heat or cold packs on the affected area  
• There may be dents in skin to show gaps between muscle and fat  
• Skin may wrinkle  
• Scars and bruising which eventually disappear  
• Infection, allergy or damage to the skin |
8  Conclusion

- Advisable for those who cannot diet or exercise and who have no normal way of losing fat.
- When excessive fat is a hindrance to daily activities
- Yet many undertake it to look good and shapely without much effort. They wish to lose fat the lazy way.

The learner would put these in eight short paragraphs and use connectors like these: first of all, initially, later, in order to, before, so that, first, second, third, etc., simultaneously, next, soon after, last but not the least or any other as required.

1.6 LISTENING: A SPEECH

Check Your Progress 5

Listen to this address given by Helen Keller and answer the questions that follow. You may read the questions before you listen to the speech. You may listen to the speech as many times as necessary.

1. What was Helen Keller afflicted with?
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   ....................................................................................................................
   ....................................................................................................................

2. Did she overcome some of her physical problems? Who helped her in doing so?
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   ....................................................................................................................
   ....................................................................................................................

3. What kind of a person does Helen Keller appear to be in her speech?
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   ....................................................................................................................
   ....................................................................................................................

4. What is her message to people who are trying to live their dream or trying to soar?
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   ....................................................................................................................
   ....................................................................................................................

5. What is the meaning of ‘living words’? How do they affect our lives?
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   ....................................................................................................................
   ....................................................................................................................

6. To what has she compared her first spoken words?
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   ....................................................................................................................
   ....................................................................................................................
1.7 SPEAKING

You have just heard Helen Keller who was both blind and deaf give an inspiring speech about how we can achieve our dreams with courage and perseverance.

In pairs, in your study centre, discuss what you need to do in order to achieve your own dreams.

You may mention things like aims/ambitions, effort, planning, obtaining relevant information, seeking guidance, working towards getting a seat in the institution of your choice, obtaining training, practicing, being practical, facing difficulties with courage and not letting them get in your way.

You may use modals like: can, could, should, need to, needn’t, ought/ought not to, will, would etc.

1.8 LET US SUM UP

In this unit we have given you practice in reading comprehension and enhanced your vocabulary through an expository text on ‘Stem Cells’. In the writing task our emphasis was on process writing. Using information in tabular form you were required to write on Liposuction. The listening passage was a speech by Helen Keller, a famous physically challenged person who succeeded despite severe handicaps. In the grammar part we gave you practice in the structures: ‘used to/get used to’. Please go through the unit carefully and answer the questions faithfully.

1.9 ANSWERS

Activity 1

1. Matched columns:

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2. Diseases like Osteoporosis and Parkinson’s Syndrome get worse as time passes.
Check Your Progress 1

1. Completed sentences:
   i) Stem cells can be used profitably in treating (b) degenerative diseases.
   ii) Stem cells are different from other cells because (c) they are unspecialized cells which can renew themselves and can, under special circumstances, take on the function of specialized cells.
   iii) The embryonic stem cells are taken from very young embryos that have been (c) created in the laboratory conditions outside the mother’s body.
   iv) A blastocyst has a lot of promise in regenerative therapy because (a) it develops tissues that develop different kinds of specialized cells.
   v) Amongst different organs in the human body the (c) brain, bone marrow and muscle have the capacity to regenerate themselves in case of wear and tear, injury or disease due to the presence of some discrete cells.
   vi) Cell-based therapies can be useful in diseases like (a) Parkinson’s disease, diabetes and heart disease.
   vii) Embryonic stem cells are different from adult stem cells in their ability to (c) proliferate without differentiating for a long time.
   viii) The word proliferation means (a) replication.

2. True or False.
   i) Stem cells are trained to take on the functions of specialized cells. — T
   ii) Special cells are such as can do special functions like make the heart beat, produce insulin. — T
   iii) Scientists learnt to isolate the stem cells from the embryo by studying closely the method of isolating stem cells from embryos of animals like the mouse. — T
   iv) The human embryonic cells are the ones that grew and multiplied during artificial fertilization outside the body. — T
   v) The only use of stem cell that scientists can foresee is their use in diseases like diabetes, heart disease and nerve diseases. — F
   vi) Stem cells need some signals to transform themselves into specialized cells. — T
   vii) Stem cells can also help in the study of cancers and prohibiting their growth. — T
   viii) Muscle cells, blood cells and nerve cells can replicate themselves. — F

3. Embryonic stem cells have a lot of potential in the treatment of following serious diseases:
   i) for treating Parkinson’s disease, heart disease and diabetes.
   ii) for studying cancers and controlling their growth.
   iii) for screening new drugs and therapies.
   iv) for studying birth defects.

4. Scientists are trying to study closely the following characteristics of the stem cells:
   • properties related to their long term self-renewal
   • how embryonic stem cells proliferate as unspecialized cells for a long time
   • the factors in living organisms that normally regulate stem cell proliferation and self-renewal
how and why abnormal cell division begin to take place

5. Following are the unique characteristics of stem cells that make them so valuable in the world of medicine:
   - their ability to renew themselves and proliferate as unspecialized cells
   - their ability to take on the functions of specialized cells

6. Extraction of embryonic stem cells is ethical due to following reasons:
   - these are extracted from the cells that are no longer needed after an in vitro fertilization. So no one is hurt.
   - these are taken with the consent of the donors.

Check Your Progress 2

1. i) recuperative (a) helping you to get better after you have been very ill or sick.
   ii) respond (d) to improve as a result of a particular kind of treatment.
   iii) resuscitation (c) to make somebody start breathing again or become conscious again after they have almost died.
   iv) reconstructive (g) only used in context of medical treatment that involves reconstruction of a part of a person’s body which has been badly damaged.
   v) remedial (e) aimed at solving a problem, especially when this involves correcting or improving something that has been done wrong.
   vi) restorative (b) making you feel strong and healthy again, medical treatment that repairs the body or a part of it.
   vii) refractory i) of a disease or medical condition that cannot be treated or cured.
   viii) relapse j) fact of becoming ill again.
   ix) recurrence h) happens again, like illness.
   x) regressive f) becoming or making something less advanced.

2. Completed passage:
The large operation theatre smelt strongly of antiseptic.
She looked at the shining steel instruments as they lay on the side table. Also there was a lot of gauze, cotton wool and some bigger instruments which she did not recognize. Soon the nursing team arrived. Each was dressed in the gowns and masks meant for only such occasions. The nurse readied her by applying antiseptic and some local anesthesia which would not let her feel any pain when the anesthetist injected her backbone with anesthesia. The anesthetist arrived and asked her to get into the fetal position and then she felt a jab in her back. All this while the doctor was talking to her to distract her from what was happening. A few moments and she felt as if her lower part of her body was not hers. She felt no sensation there. The surgeon arrived soon after and she felt probing hands and fingers on her abdomen.

Check Your Progress 3

1. Completed sentences:
   i) When I reached New York it was snowing. I was not used to such weather. I pulled out my woollens and wore them layer upon layer till I felt warm and cozy. But now I had a new problem. I was unable to move comfortably as I was not used to wearing heavy woollens. Seven years have passed since then. Now I have got used to the cold. I don’t need to pile woollens on my body. I manage with a thick jacket.
ii) She was taken aback. She was to finish her dinner at 6.30 which was served in the large mess. She was not used to eating her dinner so early. Surely she would not feel hungry at that time. That was her teatime. But she decided to follow the regimen of the ashram. Now six months later she has got used to the routine. She does not miss her evening tea and snacks either.

2. Completed sentences:
   i) Lata: Not really. I have got used to it. I have been doing it for the last fifteen years.
   ii) Shyam: I am afraid I don’t like the idea. I am not used to sharing clothes with anyone.
   iii) Mr. Gill: Not exactly. I am not used to taking orders from anyone. But I guess I will have to get used to it.
   iv) Neera: I’m sorry, Doctor. I forget. You see I am not used to so many medicines. Don’t worry I think I will get used to it in a week or two. Then there would be no complaint.
   v) Mr. Lobo: Well, you can say that I have got used to it.

Check Your Progress 4

Do it yourself.

Listening text: Address of Helen Keller at Mt. Airy

If you knew all the joy I feel in being able to speak to you to-day, I think you would have some idea of the value of speech to the deaf, and you would understand why I want every little deaf child in all this great world to have an opportunity to learn to speak. I know that much has been said and written on this subject, and that there is a wide difference of opinion among teachers of the deaf in regard to oral instruction. It seems very strange to me that there should be this difference of opinion; I cannot understand how any one interested in our education can fail to appreciate the satisfaction we feel in being able to express our thoughts in living words. Why, I use speech constantly, and I cannot begin to tell you how much pleasure it gives me to do so. Of course I know that it is not always easy for strangers to understand me, but it will be by and by; and in the meantime I have the unspeakable happiness of knowing that my family and friends rejoice in my ability to speak. My little sister and baby brother love to have me tell them stories in the long summer evenings when I am at home; and my mother and teacher often ask me to read to them from my favourite books. I also discuss the political situation with my dear father, and we decide the most perplexing questions quite as satisfactorily to ourselves as if I could see and hear. So you see what a blessing speech is to me. It brings me into closer relationship with those I love, and makes it possible for me to enjoy the sweet companionship of a great many persons from whom I should be entirely cut off if I could not talk.

I can remember the time before I learned to speak, and how I used to struggle to express my thoughts by means of the manual alphabet—how my thoughts used to beat against my finger tips like little birds striving to gain their freedom, until one day Miss Fuller opened wide the prison-door and let them escape. I wonder if she remembers how eagerly and gladly they spread their wings and flew away. Of course, it was not easy at first to fly. The speech-wings were weak and broken, and had lost all the grace and beauty that had once been theirs; indeed, nothing was left save the impulse to fly, but that was something. One can never consent to creep when one feels an impulse to soar. But, nevertheless, it seemed to me sometimes that I could never use my speech-wings as God intended I should use
them; there were so many difficulties in the way, so many discouragements; but I kept on trying, knowing that patience and perseverance would win in the end. And while I worked, I built the most beautiful air-castles, and dreamed dreams, the pleasantest of which was of the time when I should talk like other people, and the thought of the pleasure it would give my mother to hear my voice once more, sweetened every effort and made every failure an incentive to try harder next time. So I want to say to those who are trying to learn to speak and those who are teaching them: Be of good cheer. Do not think of to-day’s failures, but of the success that may come tomorrow. You have set yourselves a difficult task, but you will succeed if you persevere, and you will find a joy in overcoming obstacles—a delight in climbing rugged paths, which you would perhaps never know if you did not sometime slip backward—if the road was always smooth and pleasant. Remember, no effort that we make to attain something beautiful is ever lost. Sometime, somewhere, somehow we shall find that which we seek. We shall speak, yes, and sing too, as God intended we should speak and sing.

(http://www.afb.org/mylife/book.asp?ch=P3Ch4)

Check Your Progress 5

1. She was blind and deaf.
2. Yes, she did with the help of Mrs. Fuller and with a lot of on her part.
3. Strong, determined and not to be cowed down by problems in life. Celebrates the fact that she is alive. Loves her family and is grateful to her teachers.
4. Set a task and work towards it. Never give up in the face of difficulties. Life will throw challenges. Meet them with courage and move ahead.
5. These are words that are spoken and not as text in a book. Words carry sounds and these carry our feelings and warmth which allows us to make ourselves clear and connect with our listeners.
6. Birds, for they flew (took wing). But her initial words had shattered wings for she had difficulty in articulating her first words and her initial spoken language was clumsy and strained.