



4. Write a single line definition for any TWO of the following terms : (2 × 1 = 2)  
(a) computer (b) robot (c) microprocessor (d) Sun
5. Fill in the blanks with the suitable tense forms of the given verbs in the bracket : (4 × ½ = 2)  
When Ravi \_\_\_\_\_ (work) with his system, the power \_\_\_\_\_ (go) off.  
He \_\_\_\_\_ (wait) for half an hour till the power \_\_\_\_\_ (be) restored.
6. Choose the correct verb form that agrees with the subject : (4 × ½ = 2)  
(a) One of the lamps \_\_\_\_\_ (is/are) not burning. Someone \_\_\_\_\_ (has/have) to check the connection.  
(b) The company \_\_\_\_\_ (conduct/conducts) the aptitude test for placement. Most of the students \_\_\_\_\_ (clear/ clears) the test.
7. Rewrite the following conversation in the Reported Speech: (2 × 1 = 2)  
Ravi : Do you have the exam timetable?  
Kumar : Yes, I have it in my mobile because it is easy.
8. Frame cause and effect sentences using the following expressions : (2 × 1 = 2)  
(a) As a result of (b) Due to
9. Fill in with the correct adverbs taken from the words given in brackets and complete the sentences : (4 × ½ = 2)  
(fatally , sincerely, rashly, efficiently)  
(a) The mechanic worked very \_\_\_\_\_ and at the same time very \_\_\_\_\_  
(b) The driver drove the bus \_\_\_\_\_ and dashed against a wall. Two passengers were \_\_\_\_\_ wounded.
10. Frame 'Wh' questions from the statements given : (2 × 1 = 2)  
(a) The Principal arrived yesterday.  
(b) The exhibition was inaugurated by the chief minister.

PART B — (5 × 16 = 80 marks)

11. Read the following passage and answer the questions given below:

Many people think that robots are an inevitable part of the future. It would be pretty cool to have a droid friend around to save the day, or even just to keep you company when you get bored. While it may seem like something out of science fiction, researchers are already imagining a world in which robots become a more integrated part of our lives. We already have robots among us: some are designed to work in factories, creating uniform products continuously. You may even have one in your home, in the form of a little vacuum cleaner that self-drives itself around the floor.

But for robots to make it to the next level, scientists think they'll need to be a bit more versatile. The robots scientists are imagining look nothing like the stiff creatures you might be thinking of. No need for an awkward robot with stiff legs that attempts to walk and act like we walk and act – researchers are hoping to cook up something entirely different from what we're used to seeing.

### How to Design a Robot?

A group of researchers at Cornell University thinks the future of robots will actually be full of soft bots. A soft-bot is simply a robot made out of soft tissue, so it can move more flexibly than a hard-bodied robot. And with the rise of 3D printers, building soft-bots is easier now than ever before. The question that remains is: what will these robots look like? How will they move? How will they carry things, or navigate small quarters?

These are precisely the questions these scientists are trying to answer. It's easy enough to build a robot that mimics a human. We already know what we look like and how we move. But how do we know this is the best way for robots to move? To put it simply, we don't.

The researchers are trying to figure out all the different ways robots could move. They're basically in the middle of a very long brainstorming session. Once they realize what the options are, they can figure out which motions are best suited to which actions, and create a final model that will perform the best in all scenarios.

In order to do this, they've built a computer program that simulates the growth and movement of several kinds of soft-bots. They can use animated tissue, muscle, and bone to build a large number of different kinds of soft-bots. Then the computer program runs the robots through tests, checking out things like balance, coordination, or noisiness. In one example, they're looking for speed, so the fastest robots get to stick around, while the slowest robots get cut.

The fastest robot they created has legs and runs in a bounding motion—the front legs move together and the back legs bound forward, similar to how a cheetah moves. Another robot was made to have long legs that were mostly made of bone. These legs became long and skinny, so it wasn't surprising when the robot started to gallop like a horse.

Other times, they try to make robots that can move in non-traditional ways. In one instance, they created a funny sort of robot that doesn't have very much structure, just a big blob of muscle. This robot moves by inching its body forward, pulling its body in tight, and then releasing it to go long, much like an inch worm. It's not a very fast robot, but it does have an advantage, the researchers realized. If they picked this robot up and dropped it randomly somewhere else, the robot would just keep on moving as if nothing had happened. The researchers realized this trade-off—the bot may not be very fast, but it certainly is durable.

They even make some robots that seem almost silly from the outset. For example, some of their creations are designed to have no legs at all, but they still had to figure out a way to move them forward. One of the designs that resulted from this is a big robot that, instead of legs, has two large wings, and it flaps them back and forth to move. The design is almost like a gorilla relying primarily on its arms to move, but it's a bit bulkier. Another robot that came out of this is a little guy who looks like an open jack-in-the-box. The bottom of the body is box-shaped, but at the top, out pops two little arms. This robot moves by flailing its arms back and forth, which make the little guy slowly progress forward. It may seem silly, but an advantage this robot has is that it could easily hold things in its hands, or its empty lower-box while still moving forward.

- (a) Choose the correct answer for the following questions : (8 × 1 = 8)
- (i) What are scientists at Cornell University trying to figure out?
- (1) how to build a computer program that simulates the movement of softbots
  - (2) all the different tasks robots could perform
  - (3) all the different materials robots could be made of
  - (4) all the different ways robots could move
- (ii) Why does the author describe the different robots scientists are creating with a computer program?
- (1) to show that scientists are unsure about what type of robot to build
  - (2) to show how complex these computer programs can be
  - (3) to show that the scientists' brainstorm session will take a long time
  - (4) to show a variety of ways that robots could move
- (iii) Scientists must consider a variety of factors when designing a robot. What evidence from the text supports this conclusion?
- (1) Researchers are already imagining a world in which robots become a more integrated part of our lives.
  - (2) Scientists at Cornell University have built a computer program that allows them to simulate the movement of a robot before they develop a final design of the robot.
  - (3) If a softbot is being designed to take out the trash, the softbot's ability to be steady must be balanced with its ability to be quick.
  - (4) The fastest robot created by scientists runs in a bounding motion, similar to how a cheetah moves.

- (iv) What can be concluded about the purpose many robots will have in the future?
- (1) Robots will be created to allow scientists to use computer programs.
  - (2) Robots will be created to move in non-traditional ways.
  - (3) Robots will be created to make life easier for humans.
  - (4) Robots will be created to help scientists brainstorm.
- (v) What is this passage mainly about?
- (1) scientists who work at Cornell University
  - (2) the process scientists are using to design programs
  - (3) computer programs scientists are using to design robots
  - (4) robots that can move like humans
- (vi) Read the following sentences: Perhaps the design of incorporating both ideas into one will result in a final product isn't completely an inch-wormer and isn't completely a cheetah either." What does the word "Incorporating" mean above?
- (1) crushing
  - (2) eliminating
  - (3) combining
  - (4) explaining
- (vii) Choose the answer that best completes the sentence below.
- Scientists have built a computer program that simulates several kinds of soft-bots, \_\_\_\_\_ they can figure out which model works best.
- (1) however
  - (2) so
  - (3) although
  - (4) after
- (viii) Which of the following statements is False according to the passage?
- (1) Some robots are made very fast
  - (2) Some robots are made to run like a horse
  - (3) Some robots are made without legs
  - (4) Some robots cannot do any function.

(b) Answer the following questions in one or two sentences: (4 × 2 = 8)

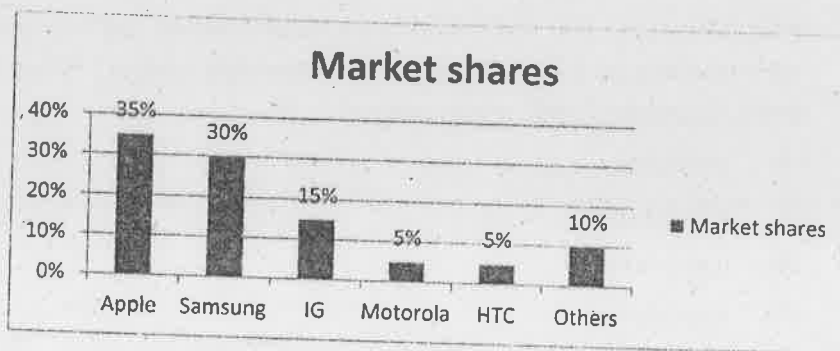
- (i) What are softbots? Why are they used?
- (ii) After scientists have a number of ideas about robot movement in mind, what types of tests do they then perform?
- (iii) How have the scientists designed robots in a new way?
- (iv) What is the advantage of the robot like a little guy who looks like an open jack-in-the-box?

12. (a) Write Eight Instructions that could be given to students appearing for a placement interview. (16)

Or

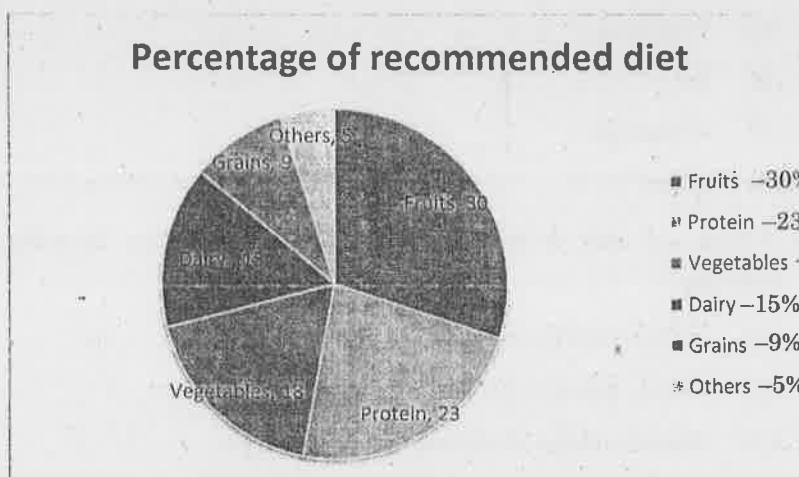
(b) Write Eight Recommendations that the two wheeler riders should follow to avoid accidents. (16)

13. (a) The market shares of the Smart phones of the popular brands are given. Describe the data, analyse and interpret the data in 150 words. (16)



Or

(b) The recommended diet to be taken everyday by an adult is given. Read the data and interpret it. Write your recommendation. (16)



14. (a) You took part in the cultural programme conducted by your college. Write a letter to your friend about the experience and how it was motivating and encouraging to you as a student of engineering course. (16)

Or

- (b) The drainage near your house is overflowing. Write a letter to the Chairman of your municipality to set the problem right before the monsoons. (16)

15. (a) Write an essay on the following topic, "The prices of essential commodities are increasing higher everyday". Analyse the problem and offer suitable solutions. (16)

Or

- (b) Write an essay of 250 words on the following topic "Obsession of the youth to cricket." Write about the causes and the effects of it. (16)

