Exercise 23.2

Q.1 Explain the reading and interpretation of bar graphs

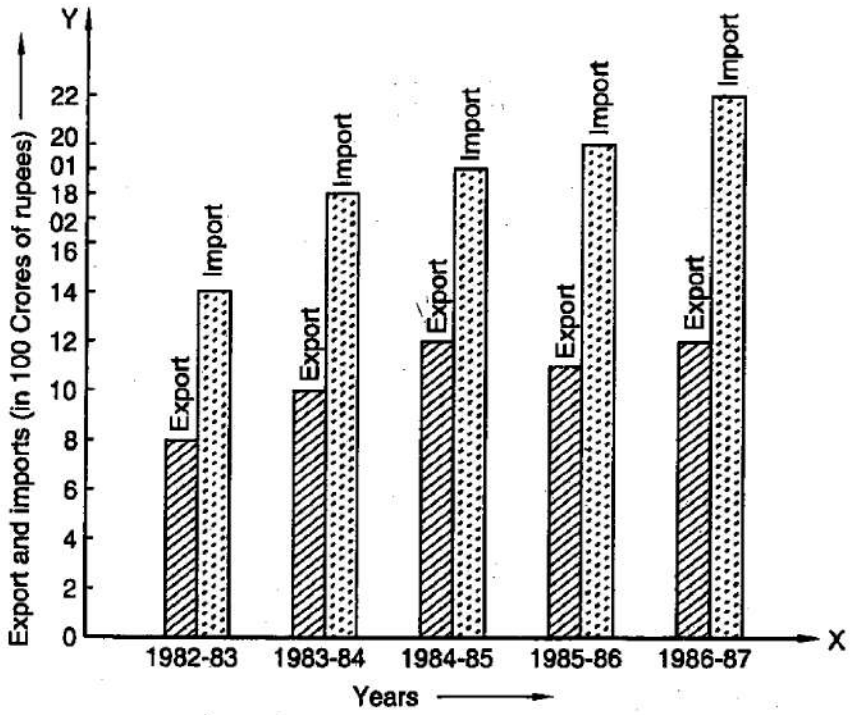
Solution: A graph with its length proportional to the value it represents is called a bar graph. The bars can either be plotted horizontaly or vertically. It is basically a visual display which is used to compare the amount of occurence of various characteristics of data.

Bar graph helps us to

(i) Compare the groups of data

(ii) Generalize the data.

Q.2 Read the following bar graph and answer the following questions



(i) What information is given by the bar graphs?

(ii) In which year the export is minimum?

(iii) in which year the import is maximum?

(iv) in which year the difference of the values of export and import is maximum.

Solution: (i) It gives the information regarding import and export from 1982-83 to 1986-87.

(ii) 1982-83

(iii) 1986-87

(iv) Difference of values of export and import in 1982-83
$= 14 - 8 = 6$

In 1983-84 $= 18 - 8 = 10$

In 1984-85 $= 19 - 12 = 7$

In 1985-86 $= 20 - 11 = 9$

In 1986-87 $= 22 - 12 = 10$

∴ The difference of the values of import and export is maximum in the year 1986-87.

Q3 The following bar graph shows the results of an annual examination in a secondary school.

Read the bar graph (fig 23.22) and choose the correct alternative in each of the following:

(i) The pair of classes in which the results of boys and girls are inversely proportional are:

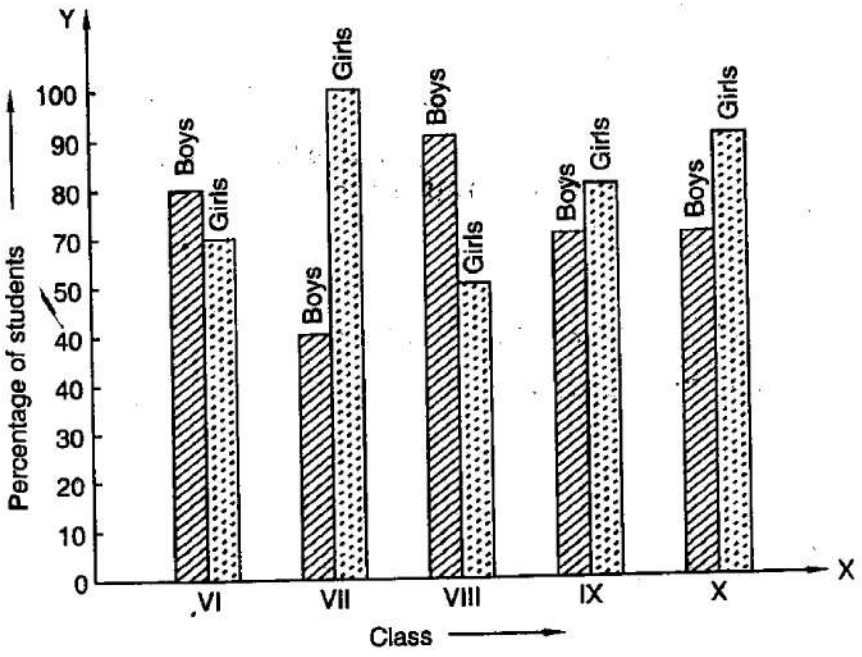
(a) VI, VIII (b) VI, IX (c) VIII, IX (d) VIII, X

(ii) The class having the lowest failure rate of girls is

(a) VII (b) X (c) IX (d) VIII

(iii) The class having the lowest pass rate of students is:

(a) VI (b) VII (c) VIII (d) IX



Solution: Let we draw a table by using bar graph

Class	% of boys	% of girls
VI	80	70
VII	40	100
VIII	90	50
IX	70	80
X	70	90

(i) from table we observe that boys and girls of class VI and IX are inversely proportional.

Correct answer (b)

(ii) (a)

(iii) (b)

Q.4 The following bar graph shows the number of persons killed in Industrial accidents in a country for some years (fig 23.23)

Read the bar graph and choose the correct alternative in each of the following

(i) The year which shows the maximum percentage increase in the number of persons killed in coal mines over the preceding year is :

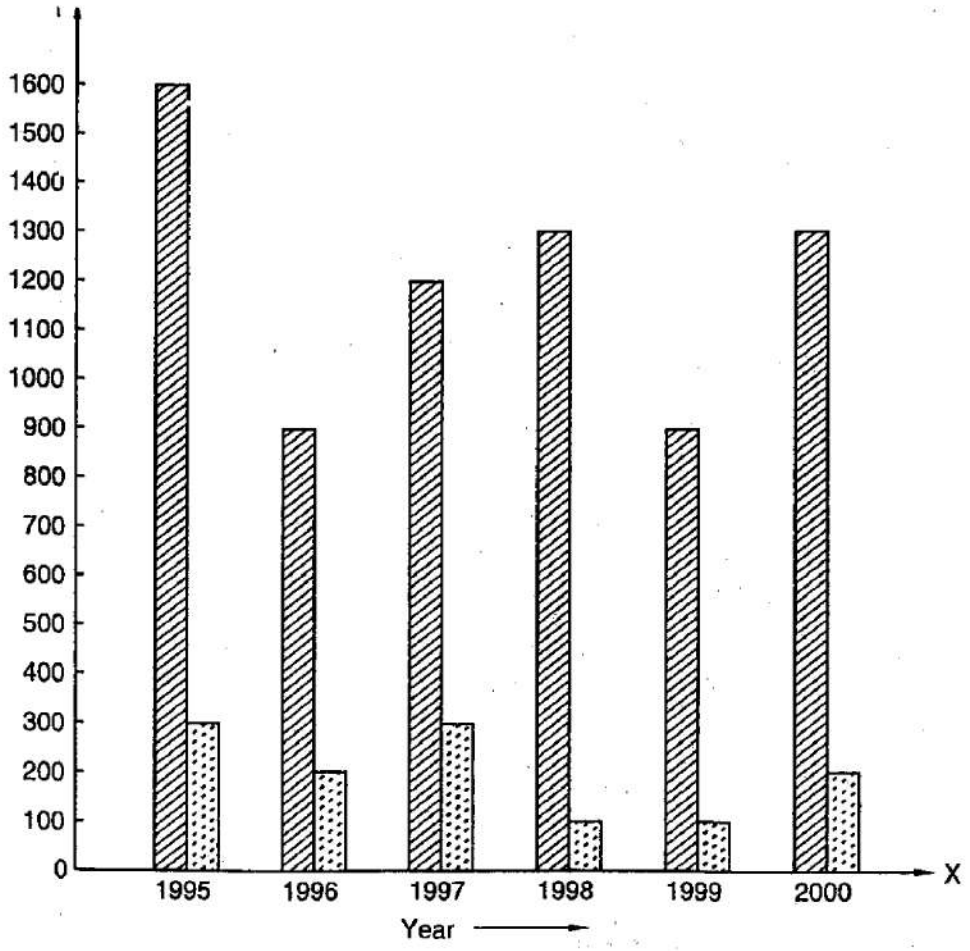
(a) 1996 (b) 1997 (c) 1999 (d) 2000

(ii) The year which shows the maximum decrease in the number of persons killed in industrial accidents over the preceding year is:

(a) 1996 (b) 1997 (c) 1998 (d) 1999

(iii) The years in which the maximum number of persons were killed in industrial accidents other than those killed in coal mines is:

(a) 1995 (b) 1997 (c) 1998 (d) 1999



Solution: Consider a chart by using data

Year	Persons killed in industrial accidents	Persons killed in Coal mines.
1995	1600	300
1996	900	200
1997	1200	300
1998	1300	100
1999	900	100
2000	1300	200

(i) 2000

(ii) 1996

(iii) 1995

Q.5 The Production of a saleable steel in some of the steel plants of our country during 1999 is given below:

Plant	Bhilai	Durgapur	Rourkela	Bokaro
Production (in thousand tonnes)	160	80	200	150

Construct a bar graph to represent the above data on a graph paper by using the scale 1 big division = 20 thousand tonnes.

Solution : ∵ 1 division = 20 thousand tonnes.

so the heights of the bars are given below.

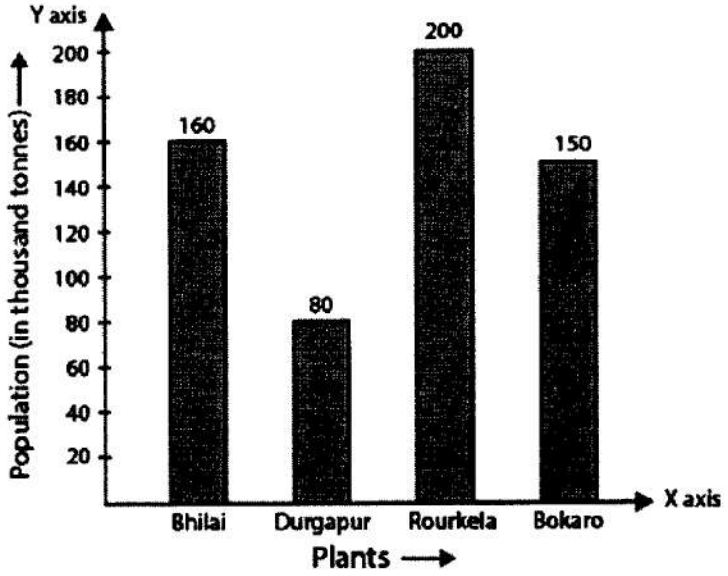
Bhilai = 160/20 = 8 units

Durgapur = 80/20 = 4 units

Rourkela = 200/20 = 10 units

Bokaro = 150/20 = 7.5 units.

Using above calculation, Bar graph is as follows.



Q6 The following data gives the number (in thousands) of applicants registered with an employment exchange during, 1995–2000

Year

Number of applicants registered (In thousands)	1995	1996	1997	1998	1999	2000
	18	20	24	28	30	34

Construct a bar graph to represent the above data.

Solution : Take 1 division = 4 thousand applicants

So, the heights of the bars as given below:

1995 = 18/4 = 4.5 units

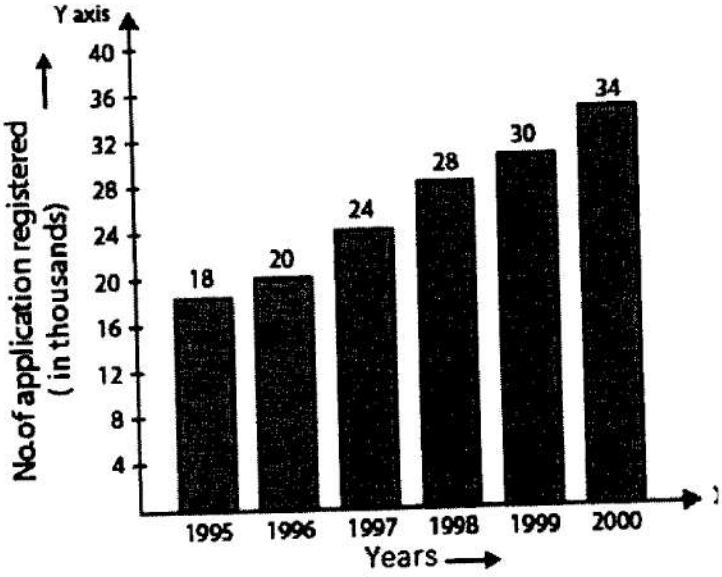
1996 = 20/4 = 5 units

1997 = 24/4 = 24/4 = 6 units

1998 = 28/4 = 7 units

1999 = 30/4 = 7.5 units

2000 = 34/4 = 8.5 units



Q.7 The following table gives the route length (in thousand Kilometers) of the Indian Railways in some of the years.

Year	1960-61	1970-71	1980-81	1990-91	2000-2001
Route length (in thousand kilometers)	56	60	61	74	98

Represent the above data with the help of a bar graph.

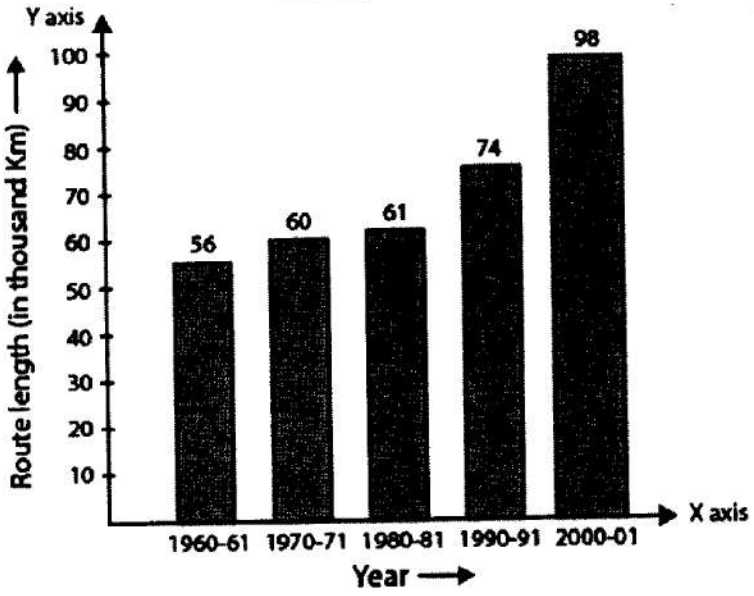
Solution: Take 1 big division = 10 thousand kilometers.

So, the heights of the bars are as follows.

1960-61 = 56/10 = 5.6 units ; 1970-71 = 60/10 = 6 units

1980-81 = 61/10 = 6.1 units , 1990-91 = 74/10 = 7.4 units

2000-2001 = 98/10 = 9.8 units.



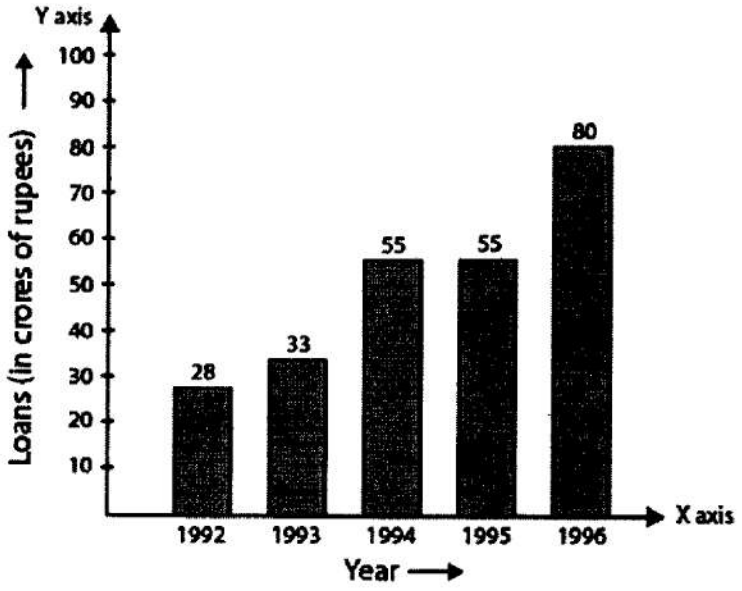
Q8 The following data gives the amount of loans (In Crore of Rupees) disbursed by a bank during some years)

Year	:	1992	1993	1994	1995	1996
Loan (in crores of rupees)	:	28	33	55	55	80

Solution: Take 1 big division = 10 Crores of loan

So, the heights of bars are given below

1992 = 28/10 = 2.8 units
1993 = 33/10 = 3.3 units
1994 = 55/10 = 5.5 units
1995 = 55/10 = 5.5 units
1996 = 80/10 = 8.0 units.



Q.9 The following table shows the interest paid by a Company (in lakhs)

Year	1995-96	1996-97	1997-98	1998-99	1999-2000
Interest (in lakhs of rupees)	20	25	15	18	30

Draw the bar graph to represent the above information.

Solution: Take 1 big division = 5 lakh rupees.

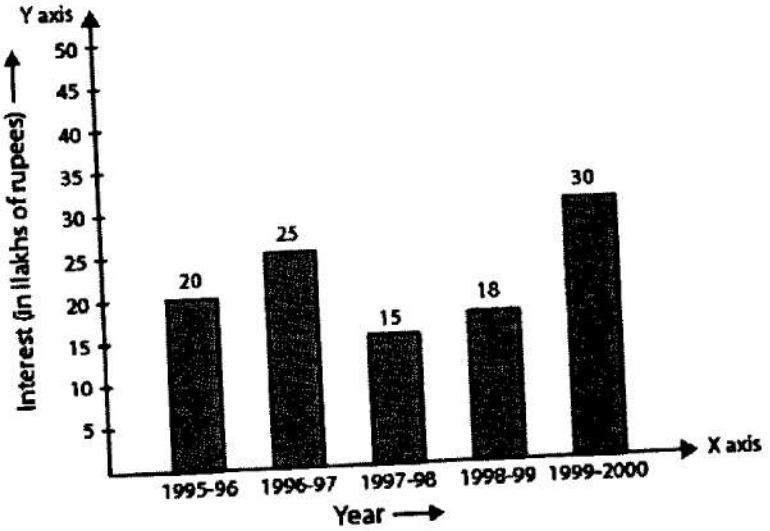
$\therefore$ 1995-96 = 20/5 = 4 units

1996-97 = 25/5 = 5 units

1997-98 = 15/5 = 3 units

1998-99 = 18/5 = 3.6 units

1999-2000 = 30/5 = 6 units



Q.10 The following data shows the average age of men in various countries in a certain year.

Country	India	Nepal	china	Pakistan	U.K	U.S.A
Average (age)	55	52	60	50	70	75

Represent the above information by a bar graph.

Solution: Take 1 big division = 10 years

so, the heights of the bars as given below

India = 55/10 = 5.5 units

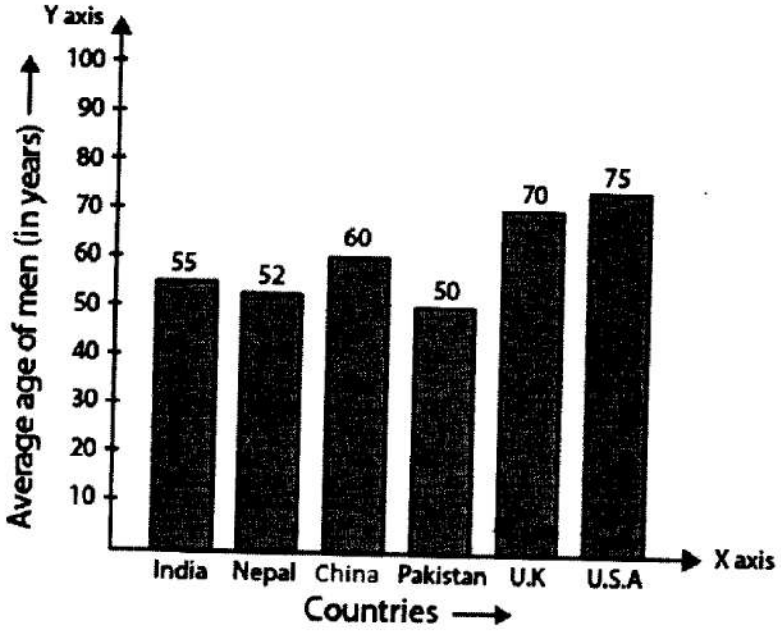
Nepal = 52/10 = 5.2 units

China = 60/10 = 6.0 units

Pakistan = 50/10 = 5.0 units

UK = 70/10 = 7 units

USA = 75/10 = 7.5 units.



Q-11 The following data gives the production of food grains (in thousand tonnes) for some years.

Year	1995	1996	1997	1998	1999	2000
Production in thousand tonnes.	120	150	140	180	170	190

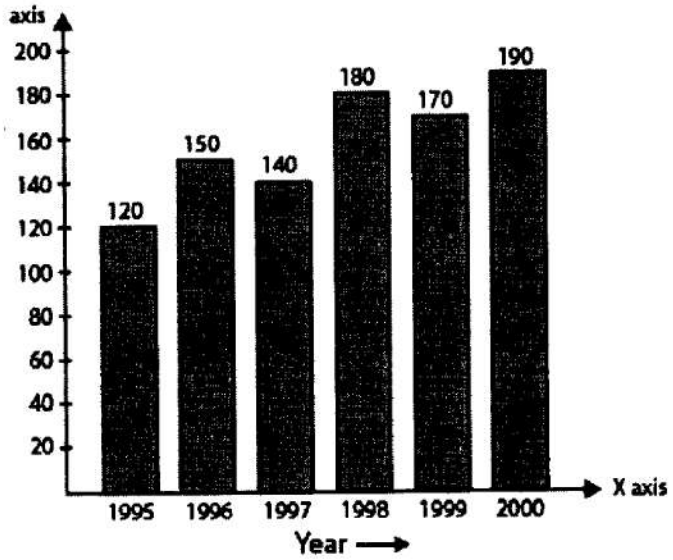
Represent the above data with the help of a bar graph.

Solution: Take 1 big division = 20 thousand tonnes, so the heights of the bars are as given below

1995 = 120/20 = 6 units ; 1996 = 150/20 = 7.5 units

1997 = 140/20 = 7 units ; 1998 = 180/20 = 9 units

2000 = 190/20 = 9.5 units



Q12 The following data gives the amount of manure (in thousand tonnes) manufactured by a company during some years.

Year	1992	1993	1994	1995	1996	1997
Manure (In thousand tonnes)	15	35	45	30	40	20

(i) Represent the above data with the help of a bar graph

(ii) Indicate with the help of the bar graph the year in which the amount of manure manufactured by the Company was maximum.

(iii) Choose the correct alternative:

The consecutive years during which there was maximum decrease in manure production are:

(a) 1994 and 1995 (b) 1992 and 1993

(c) 1996 and 1997 (d) 1995 and 1996.

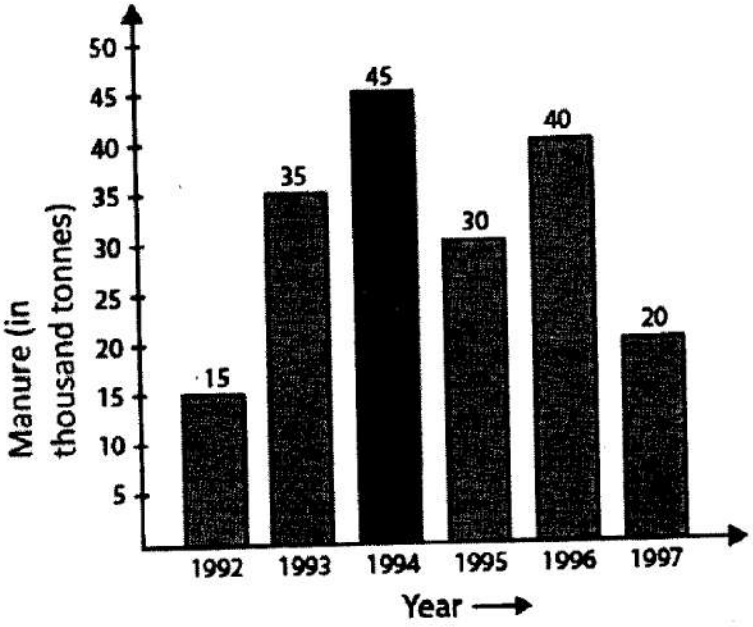
Solution: (i) Take 1 big division = 5 thousand tonnes of manure.

so, the heights of bars are as given below

1992 = 15/5 = 3 units ; 1995 = 30/5 = 6 units

1993 = 35/5 = 7 units ; 1996 = 40/5 = 8 units

1994 = 45/5 = 9 units 1997 = 20/5 = 4 units.



(ii) Maximum amount of manure manufactured in 1994.

(iii) (c) 1996 and 1997