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## Bar Graph DI Tricks \& Tips

## Bar Graphs

Bar graphs represent data in the form of columns or bars. Bar graphs can be horizontal or vertical. The length of the bar is proportional to the data value represented by it.

## Positives

1. Trends can be easily established as compared to tables grid lines of the graph are missing because of which exact and pie-charts.
2. Comparative type questions can be easily solved by visual inspection of graph.

Negatives

1. Less accurate than tables as at times, especially when the value of the bar cannot be accurately established.
2. The graph may get a little complicated in case of multiple bar chart or stacked bar chart.

## Shortcuts to crack DI sets containing Bar Graphs

1. In comparison based questions use the lengths of the bar and not exact values to solve the questions visually. Here is a CAT DI set to illustrate the same.


[^0]Free Study Material Join: Telegram.me/ExamsCart It is clear that to solve the above question we need to look at the second graph. However, rather than struggling to get the exact values and then spending more time diving them to get the answer, we can do better by solving the question visually. The question boils down to diving the un-shaded bars by the shaded ones and find out for which year would this value be the highest. For a fraction to be the highest, its numerator should be as high as possible and the denominator should be as low as possible. In other words, the un-shaded bar should be as long as possible and the shaded bar should be as short as possible. This is clearly seen for the year 1995.
2. Use the grid lines effectively for quick calculations.

Let us solve this CAT 1996 question to understand the same.

All values are in lakhs


1. The total revenue collected from 1991 to 1995 is approximately $\qquad$ -
(1) Rs. 850 lakhs
(2) Rs. 887.5 lakhs
(3) Rs. 912.5 lakhs
(4) 950 lakhs

One way to solve the above question is to add up the exact values and get the answer. The other way is to establish every value of the Revenue in terms of 'Gridlines'. For example, in 1991, the value of Revenue corresponds to 5.75 gridlines. Similarly for 1992 it is 6.5 , for 1993 it is 7.5, for 1994 it is 8 and for 1995 it is 8.75 . If we were to add all, we get a value equivalent to 36.5 gridlines. Since we know every gridline corresponds to a value of 25 lakhs, every 4 gridlines would correspond to a value of 100 lakhs or 36 gridlines would correspond to a value of 900 lakhs. Plus another 0.5 grid lines corresponds to 12.5 lakhs. Thus the total revenue for the given 5 years is 912.5 lakhs.

This method helps you to deal with single-digit or two-digit values and hence enhance your calculation speed.

## Reading Bar Graphs

A bar graph looks like the following:


Along the $X$-axis (horizontal axis) we have some numbers. Along the $Y$-axis (vertical axis) we have some other numbers. And in between the area, we have some Bars. Try to understand the data that's been presented here.

Finding it a bit difficult? Of course it's difficult because you don't know what these bars represents.

Now, try to understand the same bar chart, but with the headings.
Number of players participating in three different games from six different countries:
$\square$ Football ■Cricket $\mathbb{\square}$ Badminton


This won't be difficult. From the above bar graph we conclude that:

- Three different bars represent three different games: Football, Cricket, and Badminton.
- On the X-axis, we have a number of countries from 1 to 6.
- On the $Y$-axis we have the number of players.
- The length of the Bars denotes the number of players.

CONCEPT 1: Before you solve any of the questions, first you have to understand what the Bar Graph is trying to say. Make a habit of scanning the headings first. You have to understand what's on the X-axis, what's on the $Y$-axis, what's the relation between these two in terms of the length of Bars.There will be five questions based on one Bar Graph and that means you can get five full marks if and only if you understand the format of data that's presented in the question. That's what Data Interpretation actually means!!
Let's proceed to solving five questions based upon this Bar Graph.

## Sample Questions

Question 1: The number of players participating in Cricket from country-4 is what percentage of the number of players participating in Badminton from country-1?

1. $177.77 \%$
2. $176.78 \%$
3. $178.87 \%$
4. $180.82 \%$

CONCEPT 2: From this question we conclude that: data in Bar Graph tell us so many things. But it's pointless to waste time interpreting all the data. It's not necessary to know how many Football players or Badminton players are from Country-4 or from Country-6. Interpret what's necessary!

Just point out Cricket players from Country-4 = 80 players. Number of Badminton players from Country-1 = 45 players. The rest is just the application of percentage formula.

Percentage $=80 / 45$ * $100=177.77 \%$

Question 2: What is the total number of players participating in Cricket from country 4, 5 and 6 and the number of players participating in Football from country 1, 2 and 3?

1. 335
2. 635
3. 435
4. 535

Applying Lesson number two, Number of Cricket players from Country 4, 5 and $6=[80+70+60]$ $=210$.
Number of Football players from Country 1, 2 and $3=[65+70+90]=225$.
And $210+225=435$

Question 3: The number of players participating in Badminton from all the country is what percentage of the total number of players participating in all the games from country-3?

1. $134 \%$
2. $164 \%$
3. $126 \%$
4. $157 \%$

Badminton players from all countries $=[45+40+95+85+95+65]=425$. Total players from all games from Country-3 $=[90+85+95]=270$. Required Percentage $=[425 / 270] * 100 \approx 157 \%$

Question 4: In which country is the number of players participating in Football is the highest and the number of players participating in Badminton is the lowest?

1. Country 3 \& 2
2. Country 4 \& 6
3. Country 3 \& 4
4. Country 5 \& 1

CONCEPT 3: These sort of questions are pretty easy to solve. Just interpret the data in your mind. Check the length of the Bars. The answer will surely come.

Football highest $=90=$ Country -3 and Badminton lowest $=40=$ Country -2

Question 5: 60\% of players participating in all game from country-5 are male and 30\% players participating in all game from country-3 are female. What will be their ratio?

1. $127: 170$
2. $13: 7$
3. $49: 27$
4. $87: 55$

Number of players from all games of Country-5 $=[80+70+95]=245.60 \%$ of $245=147$
Number of players from all games of Country-3 $=[90+85+95]=270.30 \%$ of $270=81$
Number of players from all games of Country-3: we already have calculated this number before in Question 3.

CONCEPT 4: Sometimes the calculation of one questions helps in the calculation of some other question.

In this question, the ratio is $=147: 81=49: 27$
Try to Practice all calculations mentally as far as possible, without taking pen or paper.

## 1. Use Approximation in Calculations-

As we all know, In Data Interpretation a lot of calculation is involved in the form of averages, fractions, percentage, ratio etc. Approximating helps end up doing silly mistakes and get an approx answer of the question in less time.In this section you also understand the effective use of Percentage to Fraction Conversion It helps us calculating faster in Exam.

## 2. Effective Analysis of given Data-

Some questions are framed in a way that one look at the data and you will get the answer to the question. There are no typically long calculations involved. It is the first and most important way to solving these problems, you need to first analyze the data through visual estimation and try to understand the problem.

## 3. Catch the right Data-

In Data Interpretation, you have to be careful to read data from the right spot. While collecting data from a Bar, chart, table or graph its quite easy to mistakenly copy numbers from the wrong graph, bar or line. To avoid these silly mistakes while copying numbers, especially in the online exam, the first step is to understand the nature of given data and pay close attention to the units. (Units are in meters, $K g$, seconds, $K m / h r$, percentage, parts per million, per thousand, ratios, etc).
4. Become familiar with all types of Data-

While solving Data Interpretation questions, you'll notice that there are different types of questions in this section. Try to be familiar with all the types and format of Data Interpretation questions. It will add to your confidence and help you while you solving the actual DI questions.

## 5. Skip Unnecessary Calculations-

In Data Interpretation the best approach to utilize your time in a smarter way is skipping the question, normally there is 4-5 questions in a set, out of these questions one question set is very calculative and time-consuming so you need to identify such questions and skip these to save your valuable time.

## 6. Accuracy is the key factor-

It is the essential tool for clearing any Bank exam. Always try to attempt those questions in which you are $100 \%$ sure of your answers. Try to prevent any negative marking. Most of the Candidates believe that Speed is the key factor, but in reality, it is not. There are multiple factors that play important roles in SBI PO exam. Candidates, with average speed, have managed to perform wisely and have produced good marks by perfecting their Accuracy.

## 7. Don't use calculators while Practice-

In SBI PO exam a candidate is not allowed to carry a calculator device. So while calculating percentage increase and decrease, average and ratio you should get into the habit of calculating mentally in your daily practice.

## 8. The key to success is Practice-

"Before anything else, practice is the key to success". You should practice as much as you can. The only key to success is to solve the question in given time and earlier than the others. This will help you solve tough questions with determination. Firstly, you build your basics concepts and the practice will give you the edge and enable you to just scan the data and give the answer. You need to practice quality questions matching the difficulty level of the exam.

## Example: Questions on Bar Graph and Line Graph from Data Interpretation for IBPS PO and SSC CGL.

## Problem:

Population of two states (in lakhs) over the years


## Number of Years

Question 1: Approximately, what is the average population of state A for all the given years?

1) 65 lakhs 2)50 lakhs 3)48 lakhs 4) 58 lakhs 5) 52 lakhs

## Solution:

Step 1:
Total population of State A $=410$ Lakhs
Step 2:
Average Population of State $A=$ Total population of State A / Number of Years
Step 3:
By substituting the values in the formula,
$410 / 7=58.7$
Therefore, The approx average population of State A is 58\% - option 4.

Question 2: What is the ratio of the total population of state A for the years 2001, 2002 and 2003 together to the population of state B for 2005,2006 and 2007 together.
*Tip - We need to find ratios.

## Solution:

## Step 1:

As we need to find ratio,
State A $(2001+2002+2003)$ : State B(2005 + $2006+2007)$

## Step 2:

By substituting the values in the above formula,
$(40+45+60):(80+90+100)$ (Substituting the values in the formulas)

## Step 3:

By simplification,
$=145: 270$
= 29:54

Therefore the ratio of number of people in the state A( $2001+2002+2003)$ to the number of people in the state $B(2005+2006+2007)$ is $29: 54$

Question 3: What is the percentage rise in population of state B from the year 2003 to 2004?
*Tip: We need to find the percentage change

## Solution:

## Step 1:

As we need to find the percentage rise in the population, we use
Percentage Increase $=[($ final - Initial $) / I n i t i a l] \times 100$

$$
\text { =Difference /Initial x } 100
$$

## Step 2:

By substituting the values in the formulas,
$=[(70-60) / 60 \times 100]$
$=10 / 60 \times 100$
$=1 / 6 \times 100$
= $16.66 \%$

Therefore, there has been a rise in 16.66\% of population during the year 2003 and 2004 in State $B$.

Question 4: What is the difference in the total population of State A and total population for State B for all the years.

## Solution:

## Step 1:

As we need to find the total difference in the population of State A and State B, we can individually take the difference for each year and add all the differences to find the difference between total population of State A and State B.
 year), Difference $_{(\text {Fifth year) }}$, Difference $_{(\text {Sixth year) }}$, Difference (Seventh year). $_{\text {( }}$

## Step 2:

By substituting the values in the above formula,
$(-10)+5+0+(-20)+(-10)+(-25)+(-20)$
$=-80$ Lakhs

Therefore, The difference in their population is 80 lakhs.
Question 5:For which state and in which year, the percent rise in population from the previous year was the highest.

1) State B-2003
2) State B-2002
3) State A-2004
4) State A-2005
5) None of these

## Solution:

State B-2003:
Percent rise $=$ Difference $/$ Initial $\times 100$

$$
\begin{aligned}
& =(60-40) / 40 \times 100 \\
& =20 / 40 \times 100 \\
& =50 \%
\end{aligned}
$$

By using the formula, find out the percentage rise in population for both states respective to all the years and select the correct option.

Practice Set On Bar Graph DI

1. In the following bar diagram the number of engineers employed in various companies has been given. Study the bar diagram carefully to answer the questions.

2. If the number of all the engineers in the company $V$, company $X$ and company $Y$ be increased by $30 \%, 35 \%$ and $40 \%$ respectively, what will be the overall percentage increase in the number of all engineers of all the companies taken together?
A) $18 \%$
B) $22 \%$
C) $30 \%$
D) $35 \%$
E) $42 \%$

Answer

## Option B

## Solution:

Increase in the number of engineers:
Company V $=(400 * 130) / 100=520$
Company $X=(700 * 135) / 100=945$
Company $Y=(950 * 140) / 100=1330$
Total engineers $=520+650+945+1330+750=4195$
Total original number of engineers $=400+650+700+950+750=3450$
$\%$ increase $=[(4195-3450) / 3450] * 100=22 \%$ (approx.)
3. What is the average number of junior engineers employed in all the companies?
A) 150
B) 110
C) 170
D) 200
E) 190

Answer

## Option C

## Solution:

The average number of junior engineers $=850 / 5=170$
4. If the number of assistant engineers employed in all the companies be increased by $37 \%$ and the number of post graduate engineers employed in all the companies be decreased by $20 \%$ by what per cent will the number of assistant engineers be less than that of post graduate engineers?
A) $13.52 \%$
B) $17.72 \%$
C) $19.87 \%$
D) $22.15 \%$
E) $15.42 \%$

Answer

## Option C

## Solution:

Number of assistant engineers after 37\% increase $=(1050 * 137) / 100=1438.5$
Number of post graduate engineers after $20 \%$ decrease $=(1500 * 80) / 100=1200$
Required \% = [(1438.5-1200)/1200]*100 = 19.87\%
5. What is the ratio between the number of assistant engineers employed in company $V$ and company $X$ ?
A) $5: 6$
B) $3: 4$
C) $5: 7$
D) $2: 3$
E) $1: 2$

Answer

## Option B

## Solution:

Required ratio $=150: 200=3: 4$
6. What is the difference between the average number of junior engineers and assistant engineers taking all the companies together?
A) 10
B) 50
C) 30
D) 20
E) 40

Answer

## Option B

## Solution:

The average number of junior engineers $=850 / 5=170$
The average number of assistant engineers $=1100 / 5=220$
Difference $=50$


1. What was the respective ratio between the number of students who qualified in the exam from school- P in the year 2005 and the number of students who qualified in the exam from school-Q in the year 2008?
A) $17: 30$
B) $15: 28$
C) $18: 22$
D) $17: 18$
E) $19: 23$

Answer

Option D

## Solution:

Required ratio $=85: 90=17: 18$
2. Total number of students who qualified in the exam from school -P over all the years together was approximately what percentage of total number of students who qualified in the exam from both the schools together in the years 2006 and 2007 together?
A) $129 \%$
B) $130 \%$
C) $147 \%$
D) $150 \%$
E) $144 \%$

Answer

## Option C

## Solution:

Total number of students who qualified over the years
$=(85+80+95+65+40+90) * 100=45500$
Total number of students who qualified from both schools in 2006 and $2007=(80+55+$
$95+80) * 100=31000$
Required \% = (45500/31000)*100 $=147 \%$
3. If $40 \%$ of the total students who qualified in the exam from both the schools together over all the years are females, then what was the total number of males who qualified in the exam over all the years from both the schools together?
A) 51000
B) 56000
C) 45000
D) 54000
E) 67000

Answer

## Option D

## Solution:

Total number of males who qualified over the years from both the schools together = $60 \%$ of $(45500+44500)=(90000 * 60) / 100$
= 54000
4. What was the difference between the total number of students who qualified in the exam in the year 2005 from both the schools together and the total number of students from school- $Q$ who qualified in exam over all the years together?
A) 252400
B) 214500
C) 125700
D) 150000
E) 30000

Answer

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## Option E

## Solution:

Total number of students from school-Q who qualified over the years
$=(60+55+80+90+75+85) * 100=44500$
Required difference $=44500-(85+60) * 100=44500-14500$
= 30000
5. What was the approximate per cent increase in the number of students who qualified in the exam from school - $Q$ in the year 2007 as compared to the previous year ?
A) 45
B) 50
C) 72
D) 64
E) 48

Answer

## Option A

## Solution:

Percentage increase $=[(80-55) / 55] * 100=45$

The bar graph given below shows the sales of books (in thousand number) from six branches of a publishing company during two consecutive years 2000 and 2001.

Sales of Books (in thousand numbers) from Six Branches - B1, B2, B3, B4, B5 and B6 of a publishing Company in 2000 and 2001.


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1.What is the ratio of the total sales of branch B2 for both years to the total sales of branch B4 for both years?
A. 2:3
B. 3:5
C. $4: 5$
D.7:9

Answer: Option D
Explanation:

$$
\text { Required ratio }=\begin{aligned}
& (75+65) \\
& (85+95) \\
& = \\
& (1807 \\
& 9
\end{aligned}
$$

2.Total sales of branch B6 for both the years is what percent of the total sales of branches B3 for both the years?
A. $68.54 \%$
B. $71.11 \%$
C. $73.17 \%$
D.75.55\%

## Answer: Option C

## Explanation:

Required percentage $=\left[\begin{array}{c}(70+80) \\ (95+110)\end{array} \times 100\right] \%$
$=\left[\begin{array}{l}150 \\ 205\end{array} \mathrm{l} 100 \mathrm{Z}\right.$
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3.What percent of the average sales of branches B1, B2 and B3 in 2001 is the average sales of branches B1, B3 and B6 in 2000?
A. $75 \%$
B. 77.5\%
C. 82.5\%
D.87.5\%

## Answer: Option D

## Explanation:

Average sales (in thousand number) of branches B1, B3 and B6 in 2000

$$
\begin{aligned}
& 1 \\
& = \\
& 3
\end{aligned}
$$

Average sales (in thousand number) of branches B1, B2 and B3 in 2001

$$
\begin{aligned}
& \left.\quad \begin{array}{l}
1 \\
3
\end{array}\right)(105+65+110)=\binom{280}{3} . \\
\therefore & \text { Required percentage }=\left[\begin{array}{c}
245 / 3 \\
280 / 3
\end{array} \times 100\right] \%=\left(\begin{array}{c}
245 \\
280
\end{array} \times 100\right) \%=87.5 \% .
\end{aligned}
$$

4.What is the average sales of all the branches (in thousand numbers) for the year 2000?
A. 73
B. 80
C. 83

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$$
\text { D. } 88
$$

## Answer: Option B

## Explanation:

Average sales of all the six branches (in thousand numbers) for the year 2000

$$
1
$$

$=x[80+75+95+85+75+70]$
6
$=80$.
5.Total sales of branches B1, B3 and B5 together for both the years (in thousand numbers) is?
A. 250
B. 310
C. 435
D. 560

## Answer: Option D

## Explanation:

Total sales of branches B1, B3 and B5 for both the years (in thousand numbers)
$=(80+105)+(95+110)+(75+95)$
$=560$.

The bar graph given below shows the foreign exchange reserves of a country (in million US \$) from 1991-1992 to 1998-1999.

Foreign Exchange Reserves Of a Country. (in million US \$)

1.The ratio of the number of years, in which the foreign exchange reserves are above the average reserves, to those in which the reserves are below the average reserves is?
A.2:6
B. 3:4
C. 3:5
D.4:4

Answer: Option C
Explanation:

Average foreign exchange reserves over the given period = 3480 million US $\$$.
The country had reserves above 3480 million US \$ during the years 1992-93, 1996-97 and 1997-98, i.e., for 3 years and below 3480 million US \$ during the years 1991-92, 1993-94, 1994-95, 1995-56 and 1998-99 i.e., for 5 years.

Hence, required ratio $=3: 5$.
2.The foreign exchange reserves in 1997-98 was how many times that in 1994-95?
A. 0.7

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B.1.2
C. 1.4
D.1.5

Answer: Option D
Explanation:
5040
Required ratio $=\quad=1.5$. 3360
3.For which year, the percent increase of foreign exchange reserves over the previous year, is the highest?
A. 1992-93
B. 1993-94
C. 1994-95
D.1996-97

## Answer: Option A

## Explanation:

There is an increase in foreign exchange reserves during the years 1992-1993, 1994-1995, 1996-1997, 1997-1998 as compared to previous year (as shown by bar-graph).

The percentage increase in reserves during these years compared to previous year are:
For 1992-1993 $=\left[\begin{array}{c}(3720-2640) \\ 2640\end{array} \times 100\right] \%=40.91 \%$.
For 1994-1995 $=\left[\begin{array}{c}(3360-2520) \\ 2520\end{array} \times 100\right] \%=33.33 \%$.

For 1996-1997 $=\left[\begin{array}{c}(4320-3120) \\ 3120\end{array} \quad \times 100\right] \%=38.46 \%$.
For 1997-1998 $=\left[\begin{array}{c}(5040-4320) \\ 4320\end{array} \times 100\right] \%=16.67 \%$.

Clearly, the percentage increase over previous year is highest for 1992-1993.
4.The foreign exchange reserves in 1996-97 were approximately what percent of the average foreign exchange reserves over the period under review?
A.95\%
B. 110\%
C. 115\%
D.125\%

Answer: Option D
Explanation:

Average foreign exchange reserves over the given period
$=\left[_{8}^{1} x(2640+3720+2520+3360+3120+4320+5040+3120)\right]$ million US \$
$=3480$ million US $\$$.

Foreign exchange reserves in 1996-1997 = 4320 million US \$.
$\therefore$ Required percentage $=\binom{4320}{3480} \%=124.14 \% \approx 125 \%$.
A. 100
B. 150
C. 200
D. 620

## Answer: Option A

## Explanation:

Foreign exchange reserves in 1997-1998 = 5040 million US $\$$.
Foreign exchange reserves in 1993-1994 = 2520 million US \$.
$\therefore$ Increase $=(5040-2520)=2520$ US $\$$.
$\therefore$ Percentage Increase $=\left(\begin{array}{c}2520 \\ \times 100 \\ 2520\end{array}\right) \%=100 \%$.

The bar graph given below shows the data of the production of paper (in lakh tonnes) by three different companies $X, Y$ and $Z$ over the years.

Production of Paper (in lakh tonnes) by Three Companies $X, Y$ and $Z$ over the Years.


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1.For which of the following years, the percentage rise/fall in production from the previous year is the maximum for Company $Y$ ?
A. 1997
B. 1998
C. 1999
D. 2000

## Answer: Option A

## Explanation:

Percentage change (rise/fall) in the production of Company Y in comparison to the previous year, for different years are:

For $1997=\left[\begin{array}{cc}(35-25) \\ 25 & \times 100\end{array}\right] \%=40 \%$.
For $1998=\left[\begin{array}{c}(35-35) \\ 35\end{array} \quad \times 100\right] \%=0 \%$.
For $1999=\left[\begin{array}{cc}(40-35) \\ 35 & \times 100\end{array}\right] \%=14.29 \%$.
For $2000=\left[\begin{array}{cc}(50-40) \\ 40 & \times 100\end{array}\right] \%=25 \%$.

Hence, the maximum percentage rise/fall in the production of Company Y is for 1997.
2.What is the ratio of the average production of Company X in the period 1998-2000 to the average production of Company $Y$ in the same period?
A.1:1
B. 15:17

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C. 23:25
D.27:29

Answer: Option C

## Explanation:

Average production of Company X in the period 1998-2000

$$
=\left[\begin{array}{c}
1 \\
3
\end{array} x(25+50+40)\right]=\binom{115}{3} \text { lakh tons. }
$$

Average production of Company Y in the period 1998-2000

$$
\begin{aligned}
& =\left[\begin{array}{c}
1 \\
3
\end{array} x(35+40+50)\right]=\binom{125}{3} \text { lakh tons. } \\
& \therefore \text { Required ratio }=\binom{115}{3} 11523 \\
& \binom{125}{3} 12525
\end{aligned}
$$

3.The average production for five years was maximum for which company?
A. $X$
B. $Y$
C. $Z$
D. $X$ and $Z$ both

Answer: Option D

Explanation:
Average production (in lakh tons) in five years for the three companies are:
For Company $X=\left[{ }_{5}^{1} x(30+45+25+50+40)\right]={ }_{5}^{190}=38$.
For Company $Y=\left[\begin{array}{c}1 \\ 5\end{array} x(25+35+35+40+50)\right]={ }_{5}^{185}=37$.
For Company $Z=\left[\sum_{5}^{1} x(35+40+45+35+35)\right]={ }_{5}^{190}=38$.
$\therefore$ Average production of five years is maximum for both the Companies $X$ and $Z$.
4.In which year was the percentage of production of Company $Z$ to the production of Company $Y$ the maximum?
A. 1996
B. 1997
C. 1998
D. 1999

Answer: Option A

## Explanation:

The percentages of production of Company $Z$ to the production of Company $Z$ for various years are:

For $1996=\left(\begin{array}{c}35 \\ x \\ 25\end{array}\right) \%=140 \%$.
For $1997=\left(\begin{array}{c}40 \\ x \\ 35\end{array}\right) \%=114.29 \%$.

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For $1998=\left(\begin{array}{c}45 \\ x \\ 35\end{array}\right) \%=128.57 \%$.
For $1999=\binom{35}{40} \%=87.5 \%$.
For $2000=\binom{35}{50} \%=70 \%$.

Clearly, this percentage is highest for 1996.
5.What is the percentage increase in the production of Company Y from 1996 to 1999?
A. 30\%
B. $45 \%$
C. $50 \%$
D.60\%

## Answer: Option D

## Explanation:

Percentage increase in the production of Company Y from 1996 to 1999
$=\left[\begin{array}{cc}(40-25) \\ 25\end{array} \quad 100\right] \%$
$=\left[\begin{array}{c}15 \\ 25\end{array} \mathrm{l} 100 \mathrm{O}\right.$
$=60 \%$.

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Free Study Material Join: Telegram.me/ExamsCart DIRECTIONS: Study the following graph and answer the questions given below. Foreign Exchange Reserves


Example 1: The foreign exchange reserve in March 1998 increased by what percent as compared to the corresponding month last year?
A. 13.9\%
B. $21.7 \%$
C. 11.8\%
D. $16.1 \%$

Solution: Foreign exchange reserve in March '98 = 25.98 bn. For corresponding period last year i.e. March '97, Foreign exchange reserve $=22.37$ bn.

Increase in foreign exchange reserve $=3.61$ bn.
Percentage increase $=100 \times 3.61 / 22.37=16.13 \%$.

## Alternative:

Besides this, it can also be seen that $10 \%$ of the base i.e. 22.37 is 2.2 and $15 \%$ will be 3.3. Hence, the answer has to be slightly greater that $15 \%$. Hence answer will be $4^{\text {th }}$ option.
Example 2: The foreign exchange reserve in March 1997 was ----- \% less than what was in March 1998.
A. 16.2\%
B. $10.2 \%$
C. $13.9 \%$
D. $19.8 \%$

Solution: Foreign exchange reserve in March '98 $=25.98$ bn
Foreign exchange reserve in March ' $97=22.37 \mathrm{bn}$
Decrease in foreign exchange reserve $=3.61 \mathrm{bn}$
Percentage decrease $=100 \times 3.16 / 25.98=13.9 \%$

## Alternative:

Besides that, it can also be seen that $10 \%$ of the base i.e. 25.98 is approximately 2.6 and $15 \%$ will be 3.9. Hence, the answer has to be more than $10 \%$ and less than $15 \%$. Hence, the $3^{\text {rd }}$ option is the answer. Example 3: The average rate of increase per year of foreign exchange reserve in India from March 1997 to March 1999 was approximately
A. 10.5\%
B. $16 \%$
C. $26 \%$
D. 32\%

Solution: Foreign exchange reserve in March '97 = 22.37 bn.
Foreign exchange reserve in March ' $99=29.52$ bn.
Increase in foreign exchange reserve $=7.15$ bn.
Percentage increase in two years $=100 \times 7.15 / 22.37=32 \%$.
Average rate of increase per year $=32 / 2=16 \%$.
It can noted here that the increase of 7.15 is roughly one-third of 22 i.e. $33.33 \%$. For every year it will become $33 / 2=16.5 \%$. Hence, $2^{\text {nd }}$ option is the answer.
Example 4: What was the average foreign exchange reserve for the three years i.e. March 1997, March 1998 and March 1999, approximately?
A. \$ 26 bn
B. \$22.18 bn
C. $\$ 28.88$ bn
D. $\$ 12.56$ bn

Solution: From questions 1 and 2, the difference between March '97, '98 and '99 is almost same. Thus, the average would be the middle value i.e \$ 25.98 Billion = \$ 26 billion. Hence, the answer is $1^{\text {st }}$ option.

## Problem:

Population of two states (in lakhs) over the years


Number of Years

Question 1: Approximately, what is the average population of state A for all the given years?

1) 65 lakhs 2) 50 lakhs 3) 48 lakhs 4) 58 lakhs 5) 52 lakhs

## Solution:

## Step 1:

Total population of State $A=410$ Lakhs

## Step 2:

Average Population of State A = Total population of State A / Number of Years

## Step 3:

By substituting the values in the formula, 410/ $7=58.7$
Therefore, The approx average population of State A is 58\% - option 4.
Question 2: What is the ratio of the total population of state A for the years 2001, 2002 and 2003 together to the population of state B for 2005,2006 and 2007 together.
*Tip - We need to find ratios.

## Solution:

## Step 1:

As we need to find ratio,
State A (2001 + $2002+2003)$ : State B(2005 + $2006+2007)$

## Step 2:

By substituting the values in the above formula, $(40+45+60):(80+90+100)$ (Substituting the values in the formulas)

## Step 3:

By simplification,
= 145 : 270
= 29:54
Therefore the ratio of number of people in the state $A(2001+2002+2003)$ to the number of people in the state $B(2005+2006+2007)$ is $29: 54$
Question 3: What is the percentage rise in population of state B from the year 2003 to 2004?
*Tip: We need to find the percentage change

## Solution:

## Step 1:

As we need to find the percentage rise in the population, we use
Percentage Increase = [(final - Initial) /Initial] x 100
=Difference /Initial x 100
Percentage Increase $=($ Population of state B during 2004 - 2003/ 2003) $\times 100$

## Step 2:

By substituting the values in the formulas,
$=[(70-60) / 60 \times 100]$
$=10 / 60 \times 100$
$=1 / 6 \times 100$
= 16.66\%
Therefore, there has been a rise in 16.66\% of the population during the year 2003 and 2004 in State B.

Question 4: What is the difference in the total population of State A and total population for State B for all the years.

## Solution:

## Step 1:

As we need to find the total difference in the population of State A and State B, we can individually take the difference for each year and add all the differences to find the difference between the total population of State A and State B.
Total $A$-Total $B=$ Difference(First year), Difference(Second year) Difference(Third year), Difference( Fourth year), Difference(Fifth year), Difference(Sixth year), Difference(Seventh year).

## Step 2:

By substituting the values in the above formula,
$(-10)+5+0+(-20)+(-10)+(-25)+(-20)$
= -80 Lakhs
Therefore, The difference in their population is 80 lakhs.
Question 5: For which state and in which year, the percent rise in population from the previous year was the highest.

1) State B-2003
2) State $B-2002$
3) State A-2004
4) State A-2005
5) None of these

## Solution:

State B-2003:
Percent rise $=$ Difference $/$ Initial $\times 100$
$=(60-40) / 40 \times 100$
$=20 / 40 \times 100$
= $50 \%$

Directions (1-5): Go through the charts below and answer the questions based on it. The barcharts shown here represent the earning of a sales executive Mohit. Bar chart (1) gives us the details of his earnings in the four quarters of the year across the five regions - West, North, South, East and Central. Bar chart (2) gives the details of his total earning in the four quarters in three different years. Bar chart (1) is applicable for bar chart (2) and vice-versa.



Q1. Across the given years, which quarter has given the maximum earning to Mohit?
(a) Qtr 1
(b) Qtr 2
(c) Qtr 3
(d) Qtr 4
(e) Cannot be determined

S1. Ans.(c)
Sol. Use the second bar chart. It is a visual inspection solution.

Q2. Which region has brought maximum earning for Mohit in the year 2000?
(a) South
(b) West
(c) East
(d) Central
(e) North

S2. Ans.(d)
Sol.

| Region | Annual earnings for the region (in thousands) |
| :--- | :--- |
| West | $0.4 \times 10+0.3 \times 5+0.3 \times 15=\mathbf{1 0}$ |
| North | $0.1 \times 10+0.4 \times 5+0.1 \times 25+0.2 \times 15=\mathbf{8 . 5}$ |
| South | $0.2 \times 10+0.2 \times 5+0.3 \times 25=\mathbf{1 0 . 5}$ |
| East | $0.1 \times 5+0.2 \times 25+0.3 \times 15=\mathbf{1 0}$ |
| Central | $0.3 \times 10+0.4 \times 25+0.2 \times 15=\mathbf{1 6}$ |

Q3. What is the difference between Mohit's earning due to the Central zone during 2001 and earning due to the East zone during 2001?
(a) 4000
(b) 1000
(c) 2000
(d) 3000
(e) 5000

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S3. Ans.(d)
Sol. Mohit's earning due to the Central zone during $2001=20000 * 0.3=6000$
Mohit's earning due to the East zone during 2000 = 10000 * $0.3=3000$
Required Difference $=6000$ - $3000=3000$
Q4. What is the maximum difference between any two regional earnings in any quarter?
(a) Rs. 15500
(b) Rs. 13000
(c) Rs. 14500
(d) Rs. 17500
(e) None of the above

S4. Ans.(d)
Sol. Maximum quarterly zonal earnings are for central Region during quarter III, $2002=$ Rs. 18000
Minimum quarterly zonal earnings are East Region during quarter II, $2000=$ Rs. 500
Hence, Maximum difference $=18000-500=$ Rs. 17500
Q5. Find the percentage change in Mohit's earning due to the south zone during 2001 over the previous year.
(a) $14 \%$
(b) $20 \%$
(c) $25 \%$
(d) $33 \%$
(e) None of the above

## S5. Ans.(a)

Sol.

| Region | Annual earnings for the region |
| :--- | :--- |
| West | $0.4 \times$ Q1 $+0.3 \times$ Q11 $+0.3 \times$ QIV |
| North | $0.1 \times$ Q1 $+0.4 \times$ Q11 $+0.1 \times$ Q111 $+0.2 \times$ QIV |
| South | $0.2 \times$ Q1 $+0.2 \times$ Q11 $+0.3 \times$ Q111 |
| East | $0.1 \times$ Q11 $+0.2 \times$ Q111 $+0.3 \times$ QIV |
| Central | $0.3 \times$ Q1 $+0.4 \times$ QIII $+0.2 \times$ QIV |

Earning in South Region in 2001
$=20000 \times 0.2+10000 \times 0.2+20000 \times 0.3=$ Rs. 12000
Earning in South Region in 2000
$=10000 \times 0.2+5000 \times 0.2+25000 \times 0.3=$ Rs. 10500
Therefore, percentage change $=1500 / 10500 * 10014.28 \%$

Directions (6-10): Study the following graph carefully to answer the questions that follow. Number of Students Enrolled in Three Different Disciplines in Five Different Colleges


Q6. What is the total number of students studying B.Sc. in all the Colleges together?
(a) 1825
(b) 1975
(c) 1650
(d) 1775
(e) None of these

S6. Ans.(d)
Sol. Total number of students studying B.Sc. in all the colleges together
$=\mathbf{3 5 0}+\mathbf{3 2 5}+\mathbf{3 0 0}+\mathbf{3 7 5}+\mathbf{4 2 5}=\mathbf{1 7 7 5}$

Q7. What is the respective ratio of total number of students studying B.Sc. in the colleges $C$ and $E$ together to those studying B.A. in the colleges $A$ and $B$ together?
(a) $24: 23$
(b) $25: 27$
(c) $29: 23$
(d) $29: 27$
(e) None of these

S7. Ans.(c)
Sol. Total number of students studying B.Sc. in the colleges C and E together $=300+425=725$ Total number of students studying B. A. in the colleges $A$ and $B$ together $=275+300=575$ Required ratio $=725: 575=29: 23$

Q8. What is the respective ratio of total number of students studying B.Sc., B.A. and B. Com. in all the Colleges together?
(a) $71: 67: 75$
(b) $67: 71: 75$
(c) $71: 68: 75$
(d) $75: 71: 68$
(e) None of these

S8. Ans.(a)
Sol. Total number of students studying B.Sc. in all the colleges together
$=350+325+300+375+425=1775$
Total number of students studying B.A. in all the colleges
together $=\mathbf{2 7 5}+\mathbf{3 0 0}+\mathbf{3 2 5}+\mathbf{4 5 0}+\mathbf{3 2 5}=1675$
Total number of students studying B.com in all the colleges
together $=\mathbf{4 2 5}+\mathbf{4 7 5}+\mathbf{3 2 5}+\mathbf{4 2 5}+\mathbf{2 2 5}=1875$
Required ratio $=$ B.Sc. : B.A. : B.Com.
= $1775: 1675: 1875=71: 67: 75$

Q9. Number of students studying B.Com. in College C forms approximately what per cent of the total number of students studying B.Com. in all the colleges together?
(a) $39 \%$
(b) $21 \%$
(c) $44 \%$
(d) $33 \%$
(e) $17 \%$

S9. Ans.(e)
Sol. Number of students studying B.Com. in college C $=325$
Number of students studying B.Com. in all the colleges together
$=\frac{325 \times 100}{1875}=17$ (approx.)

Q10. Number of students studying B.A. in College B forms what per cent of total number of students studying all the disciplines together in that college? (rounded off to two digits after decimal)
(a) $26.86 \%$
(b) $27.27 \%$
(c) $29.84 \%$
(d) $32.51 \%$
(e) None of these

## S10. Ans.(b)

Sol. Number of students studying B.A. in college $B=300$
Total number of students studying B.A., B.Sc. and B.Com.
in college $B=300+325+475=1100$
Required percentage $=\frac{300 \times 100}{1100}=27.27$

Directions (11-15): Study the following graph and pie-chart carefully to answer the questions that follow.

Percentage Breakup of Males and Females in the Five Organizations.

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Total number of Employees $=35000$


Q11. Total number of employees in Organization C is approximately what per cent of total number of employees in Organization D?
(a) 147
(b) 279
(c) 312
(d) 207
(e) 183

S11. Ans.(d)
Sol. Required percentage $=31 / 15 \times 100=206.67 » 207$ (approx.)

Q12. What is the total number of males in all the Organizations together?
(a) 13350
(b) 14700
(c) 15960
(d) 16280
(e) None of these

## S12. Ans.(c)

Sol. $A=35000 \times \frac{18}{100} \times \frac{3}{10}=1890$
$B=35000 \times \frac{22}{100} \times \frac{11}{20}=4235$
C $=35000 \times \frac{31}{100} \times \frac{3}{5}=6510$
D $=35000 \times \frac{15}{100} \times \frac{2}{5}=2100$
$E=35000 \times \frac{14}{100} \times \frac{1}{4}=1225$
Total number of males in all the organizations $=1890+4235+6510+2100+1225=15960$
Q13. What is the total number of males in Organization $A$ and $C$ together?
(a) 6125
(b) 8400
(c) 8025
(d) 7400
(e) None of these

S13. Ans.(b)
Sol. Total number of males in organization $A$ and $C$
$=1890+6510=8400$

Q14. What is the difference between the number of females in Organization B and the number of females in Organization E?
(a) 210
(b) 350
(c) 170
(d) 300
(e) None of these

S14. Ans.(a)
Sol. Number of females in organization B
$=\frac{35000 \times 22 \times 9}{100 \times 20}=3465$
Number of females in organization $E$
$=\frac{35000 \times 14 \times 3}{100 \times 4}=3675$
Required difference $=3675-3465=210$

Q15. What is the number of females in Organization D?
(a) 3150
(b) 3250
(c) 3300
(d) 3675
(e) None of these

S15. Ans.(a)
Sol. Number of females in organization D
$=35000 \times \frac{15}{100} \times \frac{60}{100}=3150$

Directions (1-5): Study the following graph carefully and then answer the questions based on it. The percentage of five different types of cars produced by a company during two years is given below.


Total Production of Cars in 1996 was 450000 Total Production of Cars in 1997 was 520000

Q1. What was the difference in the production of C type cars between 1996 and 1997?
(a) 5000
(b) 7500
(c) 10000
(d) 2500
(e) None of these

S1. Ans.(a)
Sol. Production of C type cars in 1996
= (70-40)\% of 450000
$=30 \%$ of $450000=135000$
Production of C type cars in 1997
= ( $65-40$ ) \% of 520000
= $25 \%$ of 520000 = 130000
$\therefore$ Required difference $=5000$.
Q2. If $85 \%$ of $E$ type cars produced during 1996 and 1997 are being sold by the company, then how many E type cars are left unsold by the company?
(a) 142800
(b) 21825
(c) 29100
(d) 25200
(e) None of these

S2. Ans.(e)
Sol. Production of E type cars in 1996
= (100-80)\% of 450000
= 20\% of $450000=90000$
And in $1997=10 \%$ of $520000=52000$
$\therefore$ Total production $=90000+52000=142000$.
$\therefore$ Required number of cars $=15 \%$ of $142000=21300$
Q3. If the number of A type cars manufactured in 1997 was the same as that of 1996, what would have been its approximate percentage share in the total production of 1997?
(a) 11
(b) 13
(c) 15
(d) 9
(e) None of these

S3. Ans.(b)
Sol. Production of A type cars in 1997 = production of A type cars is 1996 (given) = (100-85)\% of $450000=67500$
$\therefore$ Required percentage $=67500 / 520000 \times 100 \approx 13$.

Q4. In the case of which of the following types of cars was the percentage increase from 1996 to 1997 the maximum?
(a) $A$
(b) $E$
(c) $D$
(d) B
(e) $C$

S4. Ans. (c)

Sol. Clearly, by visual inspection D is the desired option.
Q5. If the percentage production of B type cars in 1997 was the same as that of 1996, what would have been the number of cars produced in 1997?
(a) 112500
(b) 120000
(c) 130000
(d) Data inadequate
(e) None of these

S5. Ans.(c)
Sol. Percentage production of B type cars in 1997 = that in 1996 (given)
$=(40-15) 25 \%$ of $520000=130000$.

Directions (6-10): The following bar graph depicts the result for BSc students of a college for the three years. Read the graph and answer the questions based on this graph.


Q6. The number of students passed in third division in 1984 was
(a) 165
(b) 75
(c) 70
(d) 65
(e) None of these

S6. Ans.(b)
Sol. Required number of students passed in third division
= 170-95 = 75

Q7. The percentage of students failed in 1984 was

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(a) 18(1/2)\%
(b) $17(3 / 4) \%$
(c) $15 \%$
(d) $17 \%$
(e) None of these

## S7. Ans.(c)

Sol. Percentage of students failed in 1984
$=30 / 200 \times 100=15 \%$

Q8. The aggregate pass percentage during the three years was
(a) 82(44/113)\%
(b) $82(55 / 113) \%$
(c) $82(26 / 107) \%$
(d) 77(29/113)\%
(e) None of these

## S8. Ans.(c)

Sol. Total passed students $=120+150+170=440$
Total students $=145+190+200=535$
$\therefore$ Requiered percentage $=\frac{440}{535} \times 100$
$=82 \frac{26}{107} \%$

Q9. The percentage of students passed in first division in 1982 was
(a) $20 \%$
(b) $34 \%$
(c) $14(2 / 7) \%$
(d) $13(23 / 29) \%$
(e) None of these

## S9. Ans.(d)

Sol. Required percentage $=\frac{20}{145} \times 100$
$=\frac{2000}{145}=13 \frac{23}{29} \%$

Q10. The percentage of students passed in 1982 was
(a) $65 \%$
(b) $70 \%$
(c) $74(2 / 17) \%$
(d) 82 (22/29)\%
(e) None of these

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S10. Ans.(d)
Sol. Required percentage $=\frac{120}{145} \times 100$
$=\frac{2400}{29}=82 \frac{22}{29} \%$

Directions (11-15): The bar chart given below shows the percentage distribution of the production of various models of a mobile manufacturing company in 2007 and 2008.The total production in 2007 was 35 Lakh mobile phones and in 2008 the production was 44 Lakhs. Study the chart and answer the following questions.

Percentage of six different types of mobiles manufactured by company over two years


Q11. Total number of mobiles of models A, B and E manufactured in 2007 was
(a) 24,50,000
(b) $22,75,000$
(c) $21,00,000$
(d) $19,25,000$
(e) None of these

S11. Ans.(c)
Sol. Required answer $=\frac{35 \times 30}{100}+\frac{35 \times 15}{100}+\frac{35 \times 15}{100}$
$=\frac{35}{100}(30+15+15)=\frac{35 \times 60}{100}=21$ Lakhs

Q12. For which models was the percentage variation in production from 2007 to 2008 the maximum?
(a) B and C
(b) $C$ and $D$
(c) $D$ and $E$
(d) $A$ and $B$
(e) None of these

## S12. Ans.(d)

Sol. Percentage variation
Model $\mathrm{A}=\frac{40-30}{30} \times 100=33 \frac{1}{3}$
Model $B=\frac{20-15}{15} \times 100=33 \frac{1}{3}$
Model $\mathrm{C}=\frac{15-20}{20} \times 100=-25$

Q13. What was the difference in the number of B type mobiles produced in 2007 and 2008?
(a) 3,55,000
(b) 2,70,000
(c) 2,25,000
(d) 1,75,000
(e) None of these

S13. Ans.(a)
Sol. Required difference
$=\frac{44 \times 20}{100}-\frac{35 \times 15}{100}$
$=\frac{880-252}{100}=\frac{355}{100}$ lakhs $=355000$

Q14. If the percentage production of A type mobiles in 2008 was same as that in 2007, then the number of A type mobiles produced in 2008 would have been
(a) $14,00,000$
(b) $13,20,000$
(c) $11,70,000$
(d) $10,50,000$
(e) None of these

S14. Ans.(b)
Sol. Required production
$=\frac{44 \times 30}{100}$ Lakhs
$=1320000$

Q15. If $85 \%$ of the $D$ type mobiles produced in each year were sold by the company, how many $D$ type mobiles remained unsold?
(a) 76,500
(b) 93,500
(c) $1,18,500$
(d) $1,22,500$
(e) None of these

S15. Ans.(c)
Sol. Required answer
$=\left(35 \times \frac{10}{100} \times \frac{15}{100}+44 \times \frac{10}{100} \times \frac{15}{100}\right)$ Lakhs
$=\left(\frac{150}{10000} \times 79\right)=1.1850$ Lakhs
$=118500$
Directions (1-5): Study the following bar graph and answer the questions that follow. Votes are polled in 10 constituencies of Haryana. After the polls, some votes were declared invalid.
The bar chart shows the \% of votes received by the winning and the losing candidates (Suppose there are only 2 candidates) out of the "valid votes", which is "total votes" polled minus the "invalid votes". The one which got the highest number of votes from the "valid votes" was declared the winner.
 4200, 360, 320, 6800 respectively.

1. What is the total number of voters in the given 10 constituencies of Haryana?
A) 217000
B) 234000
C) 276000
D) 211000
E) Cannot be determined

Answer

## Option E

## Solution:

In Karnal, valid votes are $45+36=81 \%$, so invalid votes are $100-81=19 \%$
Same as with other constituencies. So
Total number of votes polled in Karnal $=(3800 / 19) * 100=20,000$
Total number of votes polled in Faridabad $=(2000 / 10) * 100=20,000$
Total number of votes polled in Gurgaon $=(11400 / 38) * 100=30,000$
Total number of votes polled in Hisar cannot be found because there is no invalid vote here.
Total number of votes polled in Sirsa=(2700/9) * $100=30,000$
Total number of votes polled in Bhiwani $=(150 / 1) * 100=15,000$
Total number of votes polled in Ambala $=(4200 / 14) * 100=30,000$
Total number of votes polled in Rohtak $=(360 / 2) * 100=18,000$
Total number of votes polled in Panipat $=(320 / 8) * 100=4,000$
Total number of votes polled in Kurukshetra $=(6800 / 17) * 100=40,000$
2. What is the difference between the number of votes received by the winning and the losing candidate from Sirsa?
A) 5400
B) 5700
C) 6600
D) 4500
E) 5900

Answer
Option B

## Solution:

Total number of votes from Sirsa $=30,000$
Difference between votes $=30000 / 100$ * $(55-36)=5700$
3. What is the total number of valid votes received by winning candidates from Panipat, Ambala and Karnal together?
A) 26540
B) 21760
C) 23780
D) 26340
E) Cannot be determined

## Answer

## Option D

## Solution:

Total number of votes of winners from Panipat, Ambala and Karnal = $4000 * 81 / 100+20000 * 45 / 100+30000 * 47 / 100=3240+9000+14100=26340$
4. In the last elections, there was a total of $3,00,000$ voters in these 10 constituencies. If this time, there is an increase by $10 \%$, thhen what is eth total number of voters from Hisar?
A) $1,28,000$
B) $1,23,000$
C) $1,32,000$
D) $1,34,000$
E) $1,25,000$

Answer

## Option B

## Solution:

Total number of votes this time $=110 / 100 * 300000=3,30,000$
Total number of voters from other constituencies this time $=2,07,000$
So total number of votes from Hisar $=3,30,000-2,07,000=1,23,000$
5. What is the total number of valid votes from Bhiwani and Kurukshetra together?
A) 32,030
B) 38,400
C) 23,760
D) 45,550
E) 48,050

## Answer

## Option E

## Solution:

Total number of valid votes from Bhiwani $=15000-150=14,850$

Total number of valid from Kurukshetra $=40,000-6800=33,200$
So total number of valid votes $=14850+33200=48,050$
Directions (6-10): Study the following bar graph and answer the questions that follow. The bar graph shows the percentage of students passing in various standards in a school. Maximum marks for each subject of every class is same.

6. If the number of boys and girls passing in class 5 are same, then what is the ratio between the number of boys and girls in class 5?
A) $4: 3$
B) $5: 3$
C) $4: 9$
D) $3: 4$
E) $3: 8$

## Answer

## Option D

Solution:
In class 5, let there are $x$ boys and $y$ girls
So number of boys passing $=0.8 x$, and girls $=0.6 y$
and $0.8 x=0.6 y$
SO $x / y=3 / 4$
7. In class $7,44 \%$ of the total students got passed. If total number of boys in class 7 is 200 , then what is the total number of girls in class 7 ?
A) 50
B) 52
C) 59
D) 66
E) 60

## Answer

## Option A

## Solution:

Let total number of girls in class $7=x$
total number of boys passing $=200 * 0.4=80$
Total number of girls passing $=x^{*} 0.6=0.6 x$
So passed percentage of students $=(80+0.6 x) /(200+x)$
So $44 / 100=(80+0.6 x) /(200+x)$
Solve, $x=50$
8. If the total number of boys and girls in each class is 150 and 120 respectively, then what is overall pass percentage of the school?
A) $64 \%$
B) $69 \%$
C) $72 \%$
D) $81 \%$
E) $54 \%$

## Answer

Option B

## Solution:

Ther are 6 classes in all, total number of students $=6^{*}(150+120)=1620$
Boys passing $=150$ * $(0.8+0.8+0.4+0.9+0.7+0.7)=645$
Girls passing $=120$ * $(0.6+0.7+0.6+0.6+0.8+0.6)=468$
So overall pass\% $=(645+468) / 1620 * 100=69 \%$
9. If the ratio between the number of boys and the number of girls in class 9 is $4: 1$, then what is the ratio between number of boys passed and number of girls passed in class 9 ?
A) $9: 4$
B) $9: 5$
C) $4: 1$
D) $6: 7$
E) $7: 2$

## Answer

## Option E

## Solution:

Let there are 400 boys and 100 girls in class 9 ,
Number of boys passing $=70 / 100 * 400=280$
Girls $=80 / 100 * 100=80$
So ratio $=280: 80=7: 2$
10. Assuming the data of question 8 , if the overall average marks of boys is $50 \%$ and that of girls is $60 \%$, then what is the average marks of the students in the school?
A) $42 \%$
B) $54 \%$
C) $58 \%$
D) $65 \%$
E) $63 \%$

Answer

## Option B

Solution:
Required average $=(50 / 100 * 150+60 / 100 * 120) /[150+120] * 100=14700 / 270=54 \%$
Question :- Number of Engineering Students (in hundreds) at institutions of different kinds is given in the below bar graph.

1.What was the total number of engineering students in 1989-90?
(a)28500
(b) 4400
(c)4200
(d) 42000
2.The growth rate in students of Govt. Engineering colleges compared to that of Private Engineering colleges between 1988-89 and 1889-90 is:
(a)more
(b)less
(c)almost equal
(d)3/2
3.The total number of Engineering students in 1991-92, assuming a 10\% reduction in thenumber over the previous year, is:
(a)5700
(b)57000
(c) 44800
(d)None of these
4. In 1990-91, what percent of Engineering students were studying at IITs?
(a)16
(b) 15
(c) 14
(d)12

Answers: 1. (d) 2. (c) 3. (d) 4. (c)

## Example 2:

Try to solve the following question. It is taken from CAT 1993 paper Assets are defined as Net Fixed Assets + Net Current Assets + Investments


## $\square$ Net Fixed Asset $\square$ Net Current Asset $\square$ Investments

Q1. What is the approximate simple annual growth rate of Total Assets between 1990 and 1993 ?
a. $36 \%$
b. 12 \%
c. $9 \%$
d. $27 \%$

Q2. In any two consecutive years, the growth rate is lowest for:
a. Net Fixed Assets
b. Net Current Assets
c. Investments
d. Total Assets

Q3. The only item which has shown positive growth in every year between 1990 and 1993 is :
a. Net Fixed Assets
b. Net Current Assets
c. Investments
d. Total Assets

Q4. Between 1991 and 1992, the highest growth rate is seen for
a. Net Fixed Assets
b. Net Current Assets
c. Investments
d. Total Assets

## ANSWERS

1. b. Simple Annual growth rate is (30-22)100/(22 x 3) $=12 \%$
2. b. In any two consecutive years growth rate is lowest for Net Current Assets as it can be seen from the graph between 1991-1992
3. c.
4.c

Example 3 :
Study the following graph and answer questions

TEA IN INDIA (IN MILLION KG)


Per capita availability in gm)


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1. Which year shows the maximum percentage of export with respect to production?
(1)1992
(2)1993
(3)1996
(4)1995
2. The population of India in 1993 was
(1) 800 million
(2) 1080 million
(3)985 million
(4)900 million
3. If the area under tea production was less by $10 \%$ in 1994 than in 1993, then the approxima te rate of increase in productivity of tea in 1994 was
(1)97.22
(2)3
(3) 35
(4)None of the above
4. The average proportion of tea exported to the tea produced over the period is
(1)0.87
(2)0.47
(3)0.48
(4)0.66
5. What is the first half-decadeâ $€^{r M}$ s average per capita availability of tea?
(1) 457 gm
(2) 535 gm
(3) 446 gm
(4) 430 gm
6. In which year was the per capita availability of tea minimum?
(1)1996
(2)1994
(3)1991
(4)None of these
7. In which year was there minimum percentage of export with respect to production?
(1)1991
(2)1992
(3)1993
(4)1994

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8. In which year we had maximum quantity of tea for domestic consumption?
(1)1994
(2)1991
(3)1993
(4)1996
9. What approximately was the average quantity of tea available for domestic consumption during the period?
(1)324.3 million kg
(2)400 million kg
(3)410.3 million kg
(4)320.3 million kg
10. What was approximately the average population during the period?
(1)625 million
(2)624 million
(3) 600 million
(4) 757 million

ANSWERS:
1(3)
2 (2)
3 (4)
4 (2)
5 (4)
6 (3)
7 (1)
8 (3)
9 (1)
10 (4)


[^0]:    1. In which year during the given period was Chaidesh's export of tea, as a proportion of tea produced, the highest?
    $\begin{array}{llll}\text { (1) } 1995 & \text { (2) } 1996 & \text { (3) } 1997 & \text { (4) } 1998\end{array}$
