

Entrance essentials

Power of Practice* module

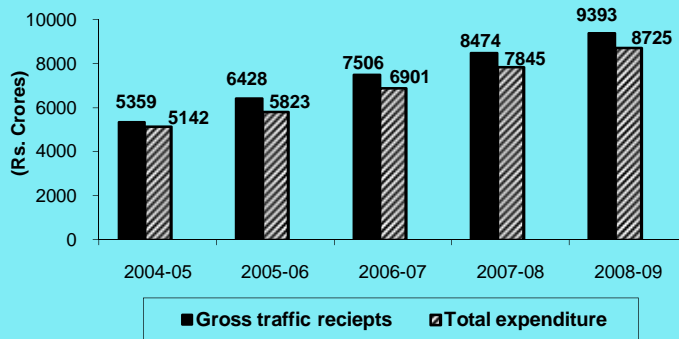
Data Interpretation

Hi,

Data interpretation is going to be much easier after you work this module. Your confidence level will soar and you will be able to solve graph problems of moderate level of difficulty. We will take up higher order DI in the next module.

Set 1

Finances of the Indian Railways



Profit = Gross traffic receipts - Total expenses

1. What was the average profit for the period 2005-2009 (in crores)?

1. 626.75 2. 544.8 3. 725.5 4. 474.5

2. In which period was the profit earned by Indian Railways the highest?

1. 2005-06 2. 2006-07 3. 2007-08 4. 2008-09

3. During which period did the gross traffic receipts show the highest percentage increase?

1. 2004-06 2. 2005-07 3. 2006-08 4. 2007-09

4. What was the average traffic receipts during the period 2004-2008(in crores)?

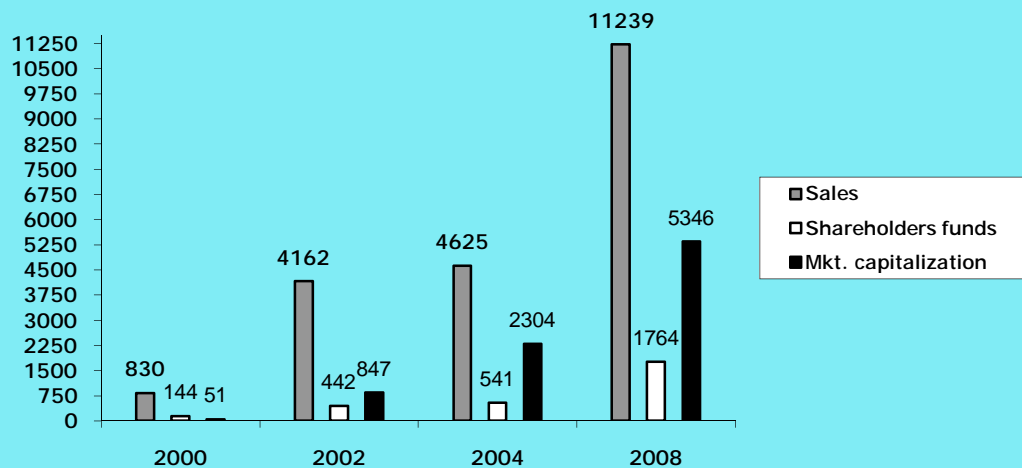
1. Rs. 6942 2. Rs. 7221 3. Rs. 6338 4. Rs.7404

5. The average profit earned by the railways from 2004 to 2009 was

1. Rs. 545 crores 2. Rs. 502 crores
3. Rs. 510 crores 4. Rs. 602 crores

Set 2

Directions for questions 1 to 5 : The bar chart presents financial data of ABC Ltd for different years.



1. In which period was the increase in market capitalization maximum and by how much?

1. 2000-02, Rs. 797 million 2. 2002-04, Rs. 1456 million
3. 2002-04, Rs. 1862 million 4. 2004-08, Rs. 3042 million

2. Which year had the lowest sales per rupee of shareholders funds?

1. 2000 2. 2002 3. 2004 4. 2008

3. The ratio of sales to market capitalization was least in the year

1. 2000 2. 2002 3. 2004 4. 2008

4. If value added is defined as $\frac{\text{Market Capitalisation}}{\text{Shareholders Funds}}$, which period recorded the highest increase in value added?

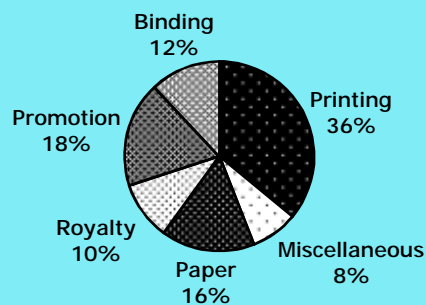
1. 2000-02 2. 2002-04 3. 2004-08 4. 2000-04

5. In which period was the growth rate of sales maximum and by how much?

1. 2000-02, 3332 million 2. 2002-04, 463 million
3. 2004-08, 6614 million 4. 2004-08, 6641 million

Set 3

Break-up of expenses incurred by a publisher in releasing a book



1. If the cost of printing is Rs.23, 400, then the share of royalty is

1. Rs.6,500 2. Rs.2,340 3. Rs.4,680 4. None of these
2. If the miscellaneous expenditure is Rs.18,000, then expenses on promotion is

1. Rs.8,000 2. Rs.14,400 3. Rs.46,800 4. Rs.40,500
3. When 5,500 copies are published, the miscellaneous expenditure amounts to Rs.36,960. If the marked price is 40% above the cost price, then the marked price of each copy is

1. Rs.122.5 2. Rs.117.6 3. Rs.126.4 4. Rs.92.4

4. By what percent is the expense on royalty less than the expense on promotion?

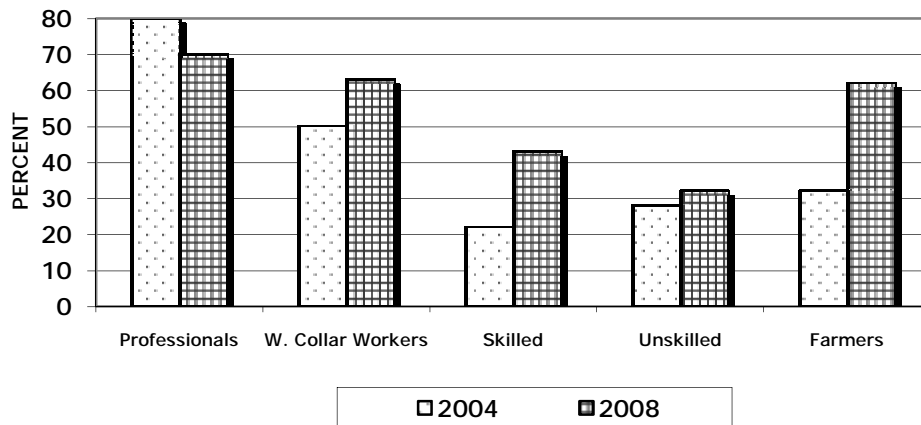
1. 8% 2. 18% 3. 80% 4. 44.44%

5. If the promotion and binding expenditure amounts to Rs.30,000, then expenses on paper will be

1. Rs.15,000 2. Rs.16,000 3. Rs.16,400 4. Rs.16,500

Set 4

PERCENTAGE OF OCCUPATIONAL GROUPS VOTING FOR REPUBLICANS DURING PRESIDENTIAL ELECTIONS



1. Which of the following groups showed the smallest percent increase of Republican voters between the elections of 2004 and

2008?

1. white collar workers 2. unskilled
3. skilled 4. farmers

2. Which of the following groups showed an increase of almost 100% between the two presidential election years?

1. unskilled 2. skilled
3. professional 4. farmers

3. If x represents the number of skilled workers who voted for the Republicans in 2008, which of the following represents the number of white collar who voted Republicans in 2008?

1. $29x/23$ 2. $28x/25$ 3. $25x/28$ 4. $x + 12$

4. If y represents the percent of white collar workers who voted for the Republicans in 2004, which of the following may not be used to represent the % of white collar workers who voted for the Republicans in 2008?

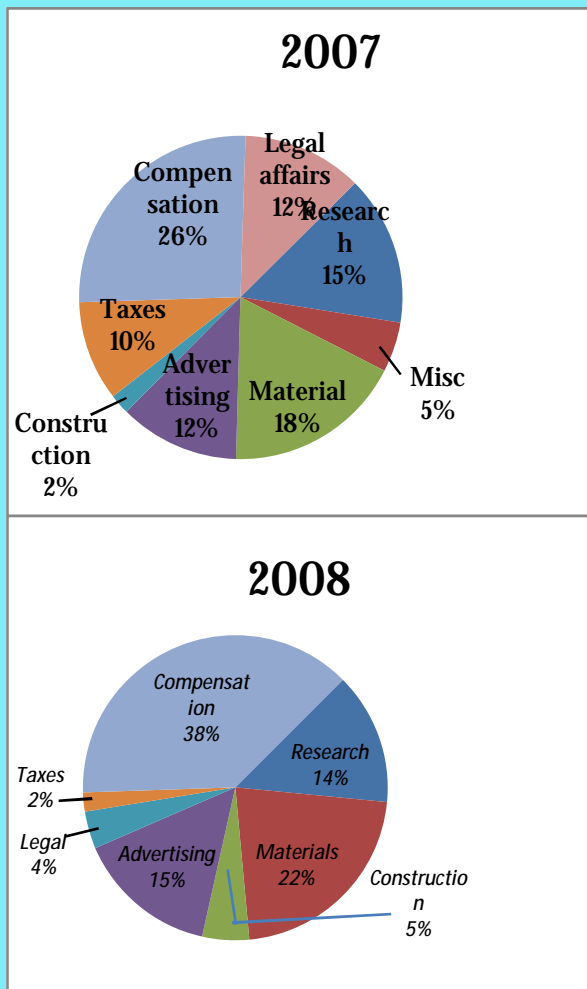
1. $(y - 30\%)$ 2. $y + 15\%$ 3. $2y - 35\%$ 4. $y/2 + 40\%$

5. Which group voted the maximum in 2008?

1. unskilled 2. skilled 3. professional
4. Can't be determined

Set 5

Questions 1 to 5: The charts show expenditures of ABC Ltd. in 2007 and 2008



1. The amount spent on materials in 2007 was 120% of the amount spent on
 1. research in 2007
 2. advertising in 2007
 3. compensation in 2007
 4. legal affairs in 2007

2. If the total expense in 2007 was Rs 20,50,000, and Rs 28,55,000 in 2008, the total legal expenditure for both years together is
 1. 3,70,200
 2. 3,60,200
 3. 3,70,000
 4. 45,000

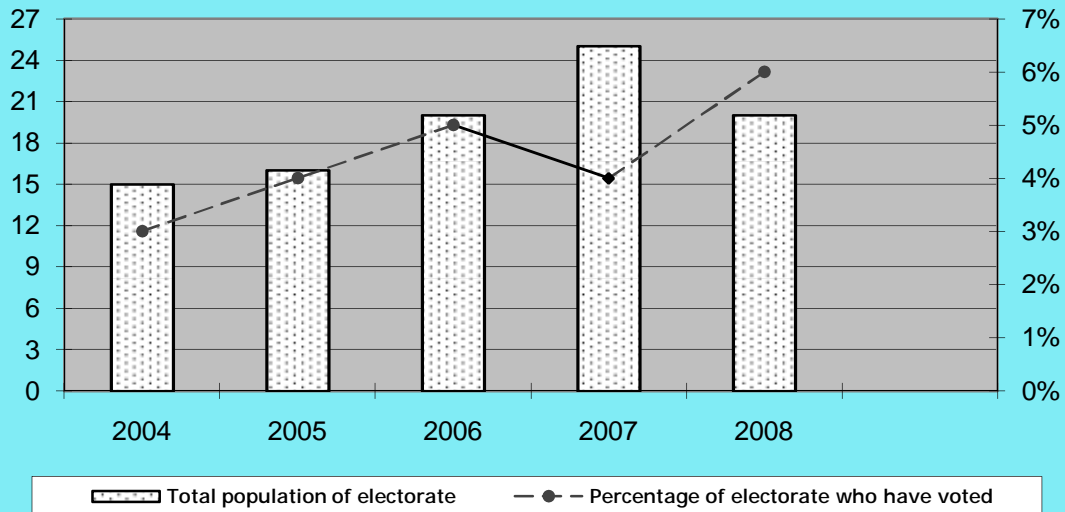
3. The expenditure growth in actual terms for compensation is (use data from qn. 2)
 1. 108%
 2. 110%
 3. 70%
 4. 103.5%

4. The total expenditure for 2007 and 2008 on research is (use data from qn. 2)
 1. > Rs.7 lakhs
 2. less than Rs.7 lakhs
 3. less than Rs.6 lakhs
 4. None of these

5. Advertising constitutes what % of total expenses for both '07 and '08 put together? (use data from qn. 2)
 1. less than 13 %
 2. 13.7%
 3. 13%
 4. 14%

Set 6

The graph shows percent of people who voted in various years as against the total population of electorate in that year for a particular constituency.



1. The highest number of votes was in the year

1. 2004 2. 2007 3. 2008 4. None of these

2. The growth in voter population between '05 & '06 is

1. $40% < x < 50%$ 2. $50% < x < 60%$
3. $30% < x < 40%$ 4. None of these

3. The increase in total voters in 2005 vis-à-vis 2004 was
 1. 19% of the increase in population in the 2 years.
 2. 24% of the increase in population in the 2 years.
 3. 11% of the increase in population in the 2 years.
 4. None of these

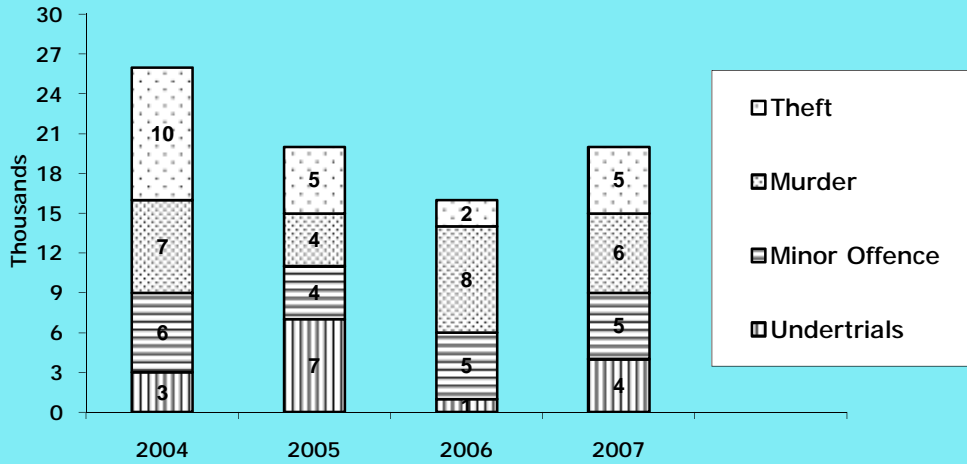
4. The number of years in which the number of voters is more than or equal to 1 lakh is
 1. 1
 2. 2
 3. 3
 4. 4

5. The difference in number of voters between 2004 and 2008 is
 1. 50000
 2. 65000
 3. 70000
 4. 75000

Set 7

Questions 1 to 5:

The graph shows the number of prisoners housed in various jails in India during the period 2004 to 2007 under various categories.



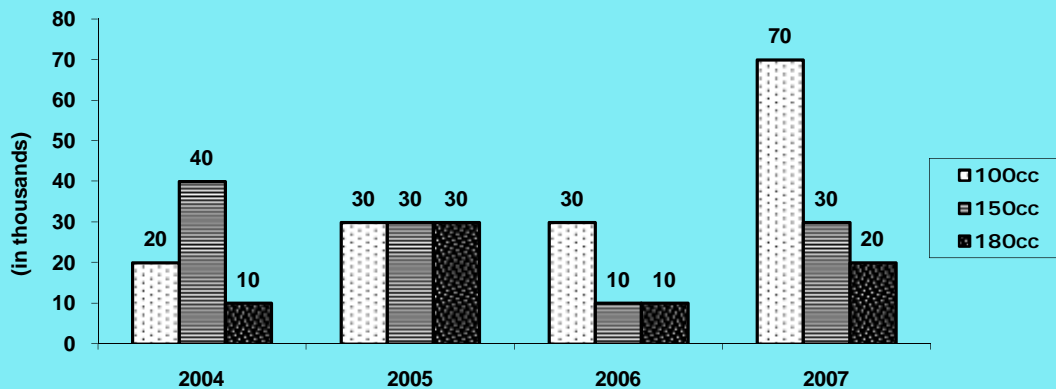
- The number of prisoners for theft was highest in
 - 2004
 - 2005
 - 2006
 - 2007
- In which year the percentage of murderers was the highest when compared to the total number of prisoners?
 - 2004
 - 2005
 - 2006
 - 2007
- For the period 2005 to 2007 the total under trials as a percentage of the total number of prisoners was approximately
 - 21.5%
 - 40%
 - 15%
 - 65%
- If all prisoners of minor offences were transferred to juvenile homes in the year 2005, then what was the percentage of prisoners jailed for theft?
 - 40%
 - 42%
 - 43%
 - 31%

5. For how many years was the number of prisoners arrested for theft more than 5000?

1. 1 2. 2 3. 3 4. 4

Set 8

Questions 1 to 5: are based on the following bar graph depicting number of accidents caused by bikes of 100cc,150cc,180cc in India during 2004 -2007



1. In which year was the total number of accidents lesser than half the total number of deaths in 2007?

1. 2004 2. 2005 3. 2006
4. None of these

2. What is the average number of accidents caused by 180cc bikes for the entire period?
 1. 12,500
 2. 15,000
 3. 17,500
 4. None of these

3. What percentage of accidents caused by 100cc bikes during the entire period?
 1. 45.6%
 2. 46.8%
 3. 47.2%
 4. 48.5%

4. In which year was the ratio of number of accidents caused by 180 cc bikes to the number of accidents caused by 100cc bikes the least?
 1. 2004
 2. 2005
 3. 2006
 4. 2007

5. If the number of accidents caused by 100cc, 150cc and 180cc bikes in 2008 was 5% more than the accidents in 2004, 10% more than the accidents in 2005 and 15% more than the accidents in 2006 then the total number of accidents in 2008 was
 1. 65,000
 2. 65,500
 3. 70,000
 4. None of these

Set 9

Questions 1 to 5 are based on the following table:

Savings (in Rs.) made by four friends in four banks

Name	ICICI	HSBC	HDFC	CANARA
Tom	1,255	2,100	1,100	755
Dick	840	3,400	5,600	945
Harry	975	2,475	3,800	2,250
Joe	255	800	1,200	3,400

Assume that ICICI, HSBC, HDFC and CANARA BANK pay 10%, 11%, 12% and 13% simple interest respectively.

- Who got the maximum interest?
1. Tom 2. Dick 3. Harry 4. Joe
- If Tom had transferred all the money from ICICI to CANARA , then how much more interest would he have got per year?
1. Rs. 37.65 2. Rs. 39.10 3. Rs. 35.50 4. None of these
- What is the total interest paid by HSBC to the four friends?
1. Rs. 875.2 2. Rs. 931.2 3. Rs. 965.25 4. Rs. 1005.3
- Which bank paid the least interest to Tom?
1. ICICI 2. HSBC 3. HDFC 4. CANARA
- What was the total amount of interest obtained by all the four friends?

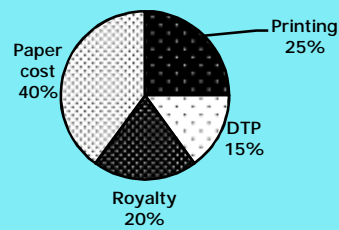
1. Rs. 3,220.75 2. Rs. 3,440 3. Rs. 3,515.75 4. Rs. 3,657.25

Set 10

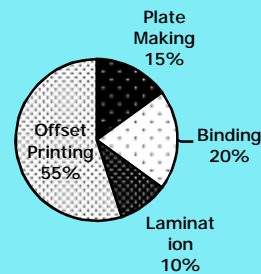
Questions 1 to 5 are based on the following pie charts.

Break-up of the cost of production of a book

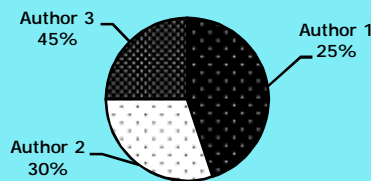
Breakup of production cost of a book



Breakup of printing costs



Contribution of various authors to the book



(Assume that the total printing cost is Rs. 50,000 for 1000 books)

- What is the royalty paid to Author 1? (Royalty is paid on each author's contribution)
 - Rs. 10,000
 - Rs. 12,000
 - Rs. 25,000
 - None of these
- What is the cost of binding each book?

1. Rs. 10 2. Rs. 12
3. Rs. 8 4. None of these

3. What should be the selling price of each book so as to get a profit of 40% on the whole?

1. Rs. 140 2. Rs. 280
3. Rs. 220 4. None of these

4. If 100 copies are printed additionally then find the percentage reduction in the manufacturing cost. (Assume that the DTP and plate making charges are the same).

1. 17.75% 2. 18.25%
3. 18.75% 4. 19.25%

5. What percent of the paper cost is the lamination cost?

1. 6.25% 2. 6.75% 3. 12.5%
4. None of these.

Set 11

Questions 1 to 5 are based on the following table :

The speed of a train over a 3-hour period was as follows

Time (min)	Speed at the given time (in kmph)
0	40
30	45
45	47.5

60	50
90	55
120	60
150	65
160	70

1. What was the average speed of the train, 2.5 hours after it embarked on its journey?
1. 50kmph 2. 55kmph 3. 60kmph 4. 65kmph
2. During the three-hour period, the speed of the train increased by
1. 25% 2. 100% 3. 75% 4. 125%
3. If 't' is the time elapsed since the train started, which of the following represents the speed of the train at the end of the journey?
1. $\frac{t}{6}$ 2. 10t 3. 40t 4. $40 + \frac{t}{6}z$
4. What is the total distance travelled by the train over the given 3-hour period?
1. 165kms 2. 210kms 3. 185kms 4. 150kms
5. If the train's speed follows the same trend, as it accelerated from 40kmph to 70kmph, through out the journey, then how long did the train take to reach 40kmph?

1. 1 hour 2. 2 hours 3. 3 hours 4. 4 hours

Set 12

Questions 1 to 5:

The prices of various commodities in the Mumbai market are as shown below :

Commodity/Market Unit	16/4/09 (Rs.)	1 Month ago (Rs.)	1 Year ago (Rs.)
CHEMICALS (Delhi)			
Caustic Soda flake (50 kg)	1037.50	1060.00	925.00
Citric acid (50 kg)	4425.00	4325.00	3700.00
Soda ash (per bag of 50 kg)	787.50	787.50	712.50
METALS (Bombay)			
Aluminum utensils	6100.00	6050.00	5800.00
Brass utensils scrap	9600.00	9500.00	9025.00
Copper utensils scrap	11875.00	11825.00	10925.00
Copper wire bar	15525.00	15350.00	14950.00
Zinc slab	6600.00	6450.00	5950.00
Lead ingot	5000.000	4900.00	3300.00
Nickel cathode (kg)	400.00	395.00	359.00

Except where specifically mentioned, assume all prices to be for 1 kilo of that

commodity.

1. The only commodity whose price has declined over the last month is
 1. Lead ingot
 2. Copper wire bar
 3. Zinc slab
 4. Caustic soda

2. Which commodity recorded the highest percentage increase in price over the past year?
 1. Nickel Cathode
 2. Soda ash
 3. Citric acid
 4. Zinc slab

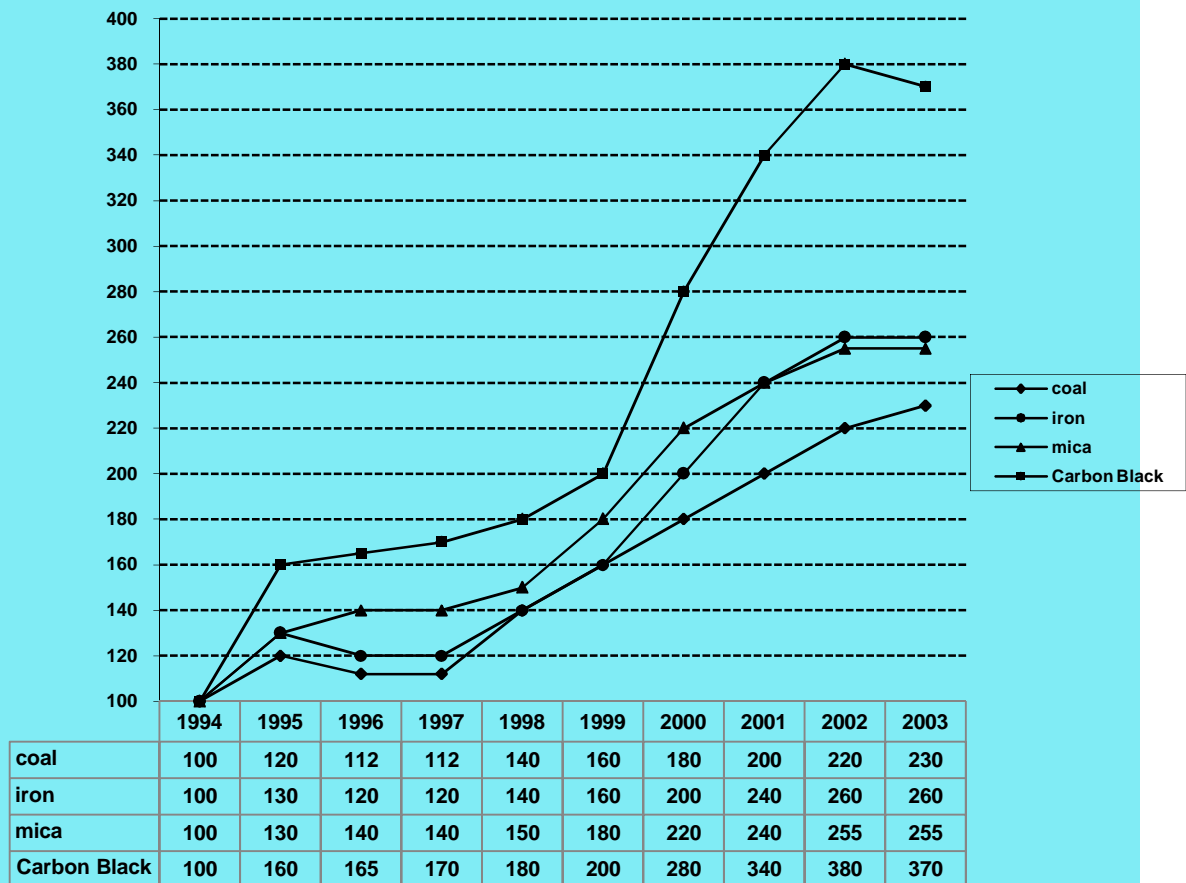
3. If previous month's trend were to continue, what would be the price of lead ingots two months later?
 1. Rs. 5298
 2. Rs. 5202
 3. Rs. 5350
 4. Rs. 5120

4. The ratio of the percentage variation in price of citric acid to the percentage variation in price of zinc slabs over the last month is
 1. 2.3
 2. 3
 3. 1.7
 4. 1.0

5. If 200 kilos of copper wire bar were to be billed as 'copper utensils scrap' by mistake on 16-4-99, the seller would incur a loss of
 1. Rs. 750,000
 2. Rs. 73,000
 3. Rs. 730,000
 4. Rs. 760,000

Set 13

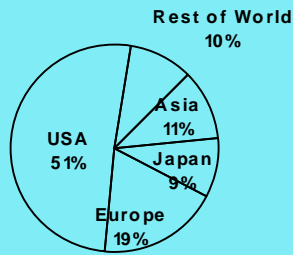
Questions 1 to 5: The following graph is an indexed graph.



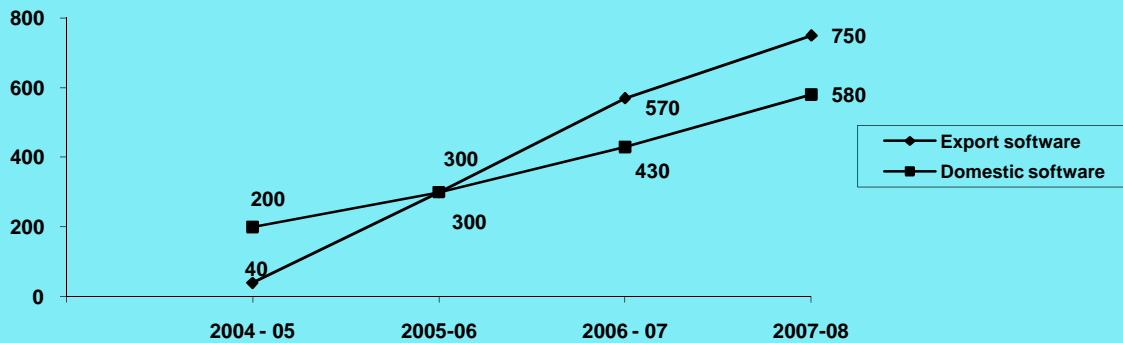
1. What is the average growth rate in coal index between 1994 and 2003?

1. 120% 2. 13.33% 3. 15% 4. None of these

2. The 'iron' index seems to be following the index of which commodity most closely?



Growth of Indian Software Industry



Size of Software industry vis-à-vis computer industry

Years	Software as % of computer industry
2004-05	15%
2005-06	22%
2006-07	28%
2007-08	39%

1. The ratio of the size of the software industry in 2007-08 to that in 2006-07 was

1. 1.33 2. 1.25 3. 1.40 4. 1.28

2. Express software exports to USA in 2004-08 as a percentage of the computer industry size in 2007-08 equals

1. 13.5% 2. 14% 3. 11.22% 4. 10%

3. What is the size of the domestic software market in 2006-07 as a percentage of the size of the computer industry during the same year?

1. 12.04% 2. 12.5% 3. 13% 4. 11.52%

4. What is the annual growth rate of the computer industry from 2004-05 to 2007-08?

1. 52% 2. 42% 3. 45% 4. 49%

5. If from 2004-05 to 2005-06, domestic software grows at the same rate as export software, what will be the value of the domestic market in 2005-06?

1. 1400 cr. 2. 1500 cr. 3. 1300 cr. 4. 1600 cr.

Set 15

Questions 1 to 4 are based on the following.

Imports of certain industries in India from April 1st 2008 to March 31st 2009 (all figures are crores)

Industry	Imports	Imports
	April 1 2008 to Jun 30, 2008	July 1 2008 to Mar 31, 2009
Textiles	53	160
Tyres	165	400
Capital goods	595	1445
Petroleum	1100	2950
2 wheelers	255	565

Exchange rates (per Rs. 100)

Dollars (\$) - 3.3	Dollars (\$) - 3.3
Deutsche Mark - 5.11	Deutsche Mark - 4.91
Pound - 2.17	Pound - 1.97
Yen - 402	Yen - 376
Swiss Franc - 4.66	Swiss Franc - 4.40
Upto 30th June, 2008	From July 1, 2008 onwards

(Note : Figures given here are imaginary)

1. Calculate the value of imports of capital goods, in pounds, for the period April 1, 2008 to March 31, 2009?

1. 1007.7 cr 2. 1125 cr 3. 985 cr 4. 1510 cr

2. Calculate the ratio of value of imports of tyre industry in dollar terms, for year 2008-09, to the value of imports for year 2008-09. Assume that the exchange rate is not changed on July 1, 2008.

1. 1.10 2. 1.05 3. 1.15 4. 0.95

3. After the exchange rate changes on July 1, 2008, which currency has the highest percentage increase in cost?

1. Dollar 2. Deutsche Mark
3. Pound 4. Swiss Franc

4. What is the value of imports for FY 2008-09 for all industries given in the table?

1. Rs. 7668 cr 2. Rs. 7114 cr
3. Rs. 7500 cr 4. Rs. 7200 cr

5. If 50% of textiles imports, 20% of the tyre imports, 30% of the capital goods imports, 20% of the petroleum imports and 10% of the 2 wheeler imports came from Switzerland from April 11th to June 11th 2008, then what is the export value of the products from Switzerland(in Swiss franc)?

1. 22.55 crores 2. 23 crores 3. 21 crores 4. 22 crores

Set 16

Directions for questions 1 to 5 : Refer to the 3 tables below

The Commonwealth Ice Cream Company (CICC) manufactures and sells ice creams in the state of Virginia. The company has four plants and six markets. The data on the plants, markets and transportation to these markets is given below:

PLANT DATA

PLANT	PLANT CAPACITY GALLONS PER DAY	PRODUCTION COST PER GALLON
Alexandria	1000	\$25
Richmond	800	23
Norfolk	800	21
Roanoke	500	22

MARKET DATA

Market	Current Demand Gallons per day	5 year Demand projection g / day	Currently served by plant at
Alexandria	500	750	Alexandria
Charlottesville	200	240	Alexandria
Roanoke	300	360	Roanoke
Danville	150	150	Roanoke
Richmond	600	720	Richmond
Norfolk	500	600	Norfolk

Transportation cost (\$ per gallon):

Market	Alexandria	Charlottesville	Roanoke	Danville	Richmond	Norfolk
Alexandria	0	2.00	3.00	4.00	3.50	2.00
Charlottesville	2.00	0	3.00	3.00	4.00	2.50
Roanoke	3.00	3.00	0	4.00	2.00	2.50
Danville	4.00	3.00	4.00	0	2.00	2.00
Richmond	3.50	4.00	2.00	2.00	0	4.00
Norfolk	2.00	2.50	2.50	2.00	4.00	2.00

1. The current average production cost of ice cream per gallon is

1. \$21 2. \$22 3. \$23 4. \$24

2. It would be cheaper for Charlottesville to get its ice cream from

- | | |
|---------------|-------------|
| 1. Alexandria | 2. Richmond |
| 3. Norfolk | 4. Roanoke |

3. If the profit margin of CICC is 10% (over production and transportation cost) then the cheapest ice cream is availed at

- | | |
|---------------|------------|
| 1. Alexandria | 2. Roanoke |
| 3. Danville | 4. Norfolk |

4. If Norfolk needs a hundred gallons of extra ice cream on a particular day, then they should order

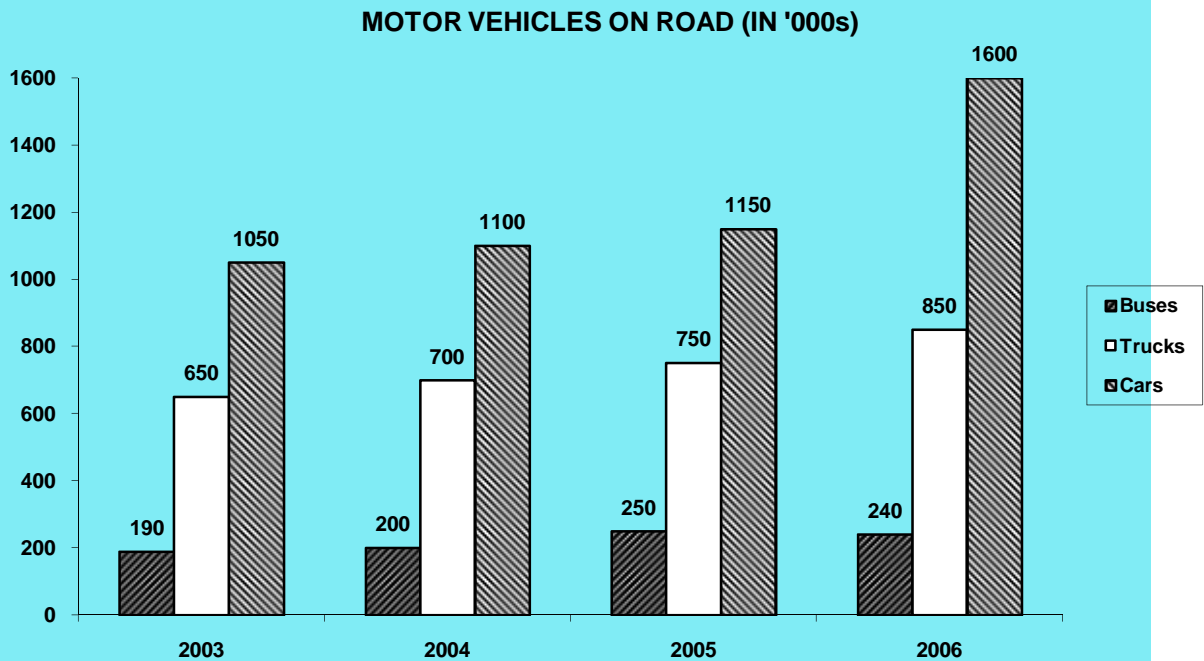
1. 50 gallons from Roanoke
2. 100 gallons from Roanoke
3. 100 gallons from Richmond
4. None of these

5. The company decides to have depots that also supply ice creams. The stipulation is that the cost of transportation should be an average of \$3.00 per gallon. What is the minimum number of depots the company needs to have?

1. One 2. Two 3. Three 4. None of these

Set 17

Questions 1 to 5 are based on the chart below:



1. In 2004 cars exceeded buses by

1. 400% 2. 550% 3. 500% 4. 450%

2. Which of the following is the largest?
 1. percent increase in buses from 2003-2004.
 2. percent increase in cars from 2003-2004.
 3. percent increase in trucks from 2003-2004.
 4. percent increase in trucks from 2005-2006.

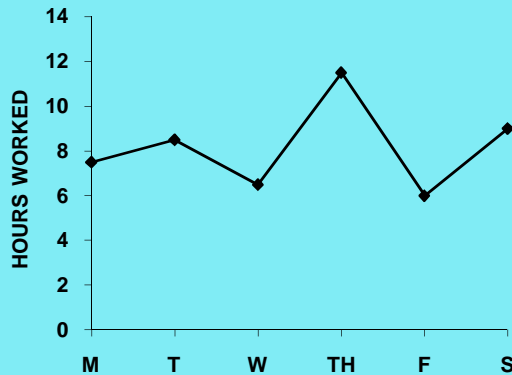
3. The average number of trucks on the road between 2003 and 2006 was
 1. 700000
 2. 735000
 3. 737500
 4. 73750

4. The ratio of buses to cars to trucks in 2005 was
 1. 12:60:42
 2. 9:52:36
 3. 10:60:40
 4. 5:23:15

5. The number of buses in 2004 was
 1. 20,000
 2. 40,000
 3. 10,000
 4. None of these.

Set 18

Questions 1 to 5 are based on the data below :



WORKMEN'S COMPENSATION (PER DAY)
 0 -4 Hours : Rs. X per hour
 Next 4 hours : 20% extra (per hour) over Rs. X
 Next 4 hours : 45% extra (per hour) over Rs. X

- Johnny, one of the workmen, came to work only on Thursday. If in Johnny's case $x = 12$ then his salary for the week(as per the line graph) was
 - Rs. 156.40
 - Rs. 175.20
 - Rs. 182.20
 - None of these
- Michael, another man, worked on all the days of the week. His weekly salary was(in rupees)
 - 392.50
 - 474.20
 - 512.90
 - None of these.

3. Rustome, a third workman, worked only on 3 days of the week (for him $x = 10$). If he earned Rs. 252 then he most likely worked on
1. Monday, Tuesday and Wednesday
 2. Monday, Wednesday and Friday
 3. Tuesday, Thursday and Saturday
 4. Thursday, Friday and Saturday
4. Nataraj worked on all days of the week. His hourly rate was Rs. 5. His weekly earning amounted to
1. Rs. 308.75
 2. Rs. 422.25
 3. Rs. 354.25
 4. None of these
5. Mohan Raj wanted to earn exactly Rs. 205. If his hourly rate was Rs. 20, then on which day should he have come to work?
1. Monday
 2. Tuesday
 3. Thursday
 4. Friday

Set 19

Questions 1 to 5: Refer to the data below

A manufacturer is considering the purchase of one of two types of equipment, type A or type B, to perform an operation. Initial equipment cost is Rs. 20,000 for either A or B. Operating costs are estimated as follows:

	A	B
Maintenance (per month)	Rs 750	Rs 500
Supplies (per unit)	-	Rs 0.05
Operator (per day)	Rs 25	Rs 25

The equipment manufacturers both arranged for experimental demonstrations, in which stop watch time studies of operator / machine performance for five cycles were made. Demonstrations revealed the following time in minutes:

Activity	Cycles for A					Cycles for B				
	1	2	3	4	5	1	2	3	4	5
Load Machine	0.32	0.29	0.28	0.31	0.30	0.30	0.27	0.25	0.22	0.21
Mean Time	2.70	2.70	2.7	2.7	2.70	2.60	2.60	2.60	2.60	2.60
Unload Machine	0.14	0.10	0.11	0.12	0.13	0.12	0.12	0.10	0.11	0.09
Inspect product	1.21	1.18	1.29	1.16	1.23	0.92	0.92	0.90	0.87	0.89

Apply label to product	Automatic for A	0.05	0.04	0.05	0.05	0.04
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On any day the machines are operated on an 8 hour shift. There are 25 working days per month.

1. For a daily production of 100 units, the best alternative is
 1. Machine A
 2. Machine B
 3. Both A and B are equally attractive.
 4. Cannot determine

2. The variable cost of producing each item on A is
 1. Rs. 2.00
 2. Rs. 1.75
 3. Rs. 0.75
 4. None of these

3. The cost of producing each item on B is
 1. Rs. 0.50
 2. Rs. 0.25
 3. Rs. 0.05
 4. None of these

4. At what production level would the manufacturer be indifferent to whether he buys A or B
 1. 250/day
 2. 200/day
 3. 100/day
 4. 50/day

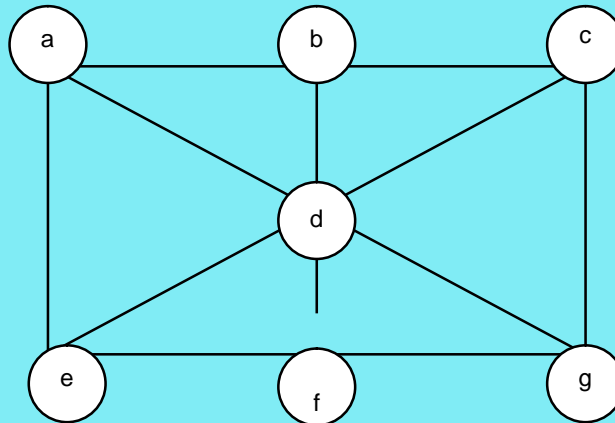
5. The average number of operations that can be done per day on Machine A is

1. 110 2. 114 3. 111 4. 120

Set 20

Directions for questions 1 - 5:

The different alphabets in each circle have to be replaced by numbers 1 through 7 in such a way that all connecting lines containing three of the numbers add up to 12. In case of connecting straight lines containing two of these numbers, the numbers should add up to 12 wherever possible. You can get different sets of values for these alphabets.



1. Which of the alphabets can be replaced with only one number?

1. a 2. f 3. d 4. c

2. When the value of 'a' is fixed, how many different sets of values for others are possible?

1. 1 only 2. 4 3. 2 4. 6

3. When only the value of 'f' is fixed, how many different sets of values of others are possible?

1. 1 only 2. 4 3. 2 4. 6

4. When only the value of 'd' is fixed, how many different sets of values can the other alphabets take?

1. 1 only 2. 4 3. 2 4. 6

5. How many different sets of values can the other alphabets take when the values of a and f are fixed?

1. 1 only 2. 4 3. 2 4. 6

SOLUTIONS

Set 1

- (1) $(\text{sum of revenues} - \text{sum of expenses from 2005-2009}) / 4$ will give average as 626.75
- (4) Profit = Gross traffic receipts - total expenditure.
The difference is the greatest in 2008-09.
- (1) In 2004-06 the increase was $(6428 - 5359) / 5359 = 20\%$
- (1) Total gross receipts during 2004-08 were equal to
 $5359 + 6428 + 7506 + 8474 = \text{Rs. } 27767 \text{ Cr.}$
Average gross receipt = Rs.6942 Cr.
- (1) Total profit = $217 + 605 + 605 + 629 + 668 = \text{Rs. } 2724 \text{ crores.}$
Average profit = $2724 / 5 = \text{Rs. } 545 \text{ crores.}$

Set 2

- (4) The increase in market capitalization was maximum in 2004-2008 and value was Rs. 3042 million
- (1) From the graph in 2000, the lowest sales per rupee of shareholders funds was observed.
- (3) The lowest ratio of sales to market capitalization occurred in the year 2004.
- (2) 2002 - 04 recorded the highest increase in market capitalization/shareholders funds

5. (3) From the graph the growth of sales was high in 2004 – 08 and was 6612 millions

Set 3

1. (1) None of these. As $\frac{23,400}{36} \times 10 = 6500$
2. (4) $\frac{18,000}{8} \times 18 = 40,500$
3. (2) The cost price $\frac{36,9600}{8} \times 100 = 4,62,000$
 \therefore the marked price of 1 book is $\frac{1.4 \times 4,62,000}{5500} = \text{Rs. } 117.6$
4. (4) $\frac{8}{18} \times 100 = 44\frac{4}{9}$
5. (2) for paper , percentage is 16... so $16\% * 100000 = 16000$

Set 4

1. (1) white collar workers showed the smallest percent increase of Republican voters between the two elections
2. (4) farmers showed the increase of almost 100 % .
3. (1) 46% voted Republican in 2004 and 58% voted Republican in 2008.
4. (1) $y - 30$ cannot represent the % of white collar workers who voted republican in 2008
5. (4) The answer cannot be uniquely determined from the given graph

Set 5

1. (1) Amount on material = 18% = 12% of x \therefore x = 15 % research.
2. (2) Total legal expense = 2,46,000+1,14,200 = 3,60,200 (12% of 20,50,000+4% of 28,55,000)
3. (4) Compensation in 2007 = 26% of 20, 50,000 = 5,33,000
 Compensation in 2008 = 38% of 28,55,000 = 10,84,900
 \therefore growth = $\frac{10,84,900-5,33,000}{5,33,000} \times 100 = 103.5\%$
4. (1) As Rs.307500 is the total expenditure in 2007
 $\frac{399700}{707200}$ expenditure in 2008
5. (2) 2007 : advertisement = 12% of 20, 52,000 = 2,46,000
 2008 : advertisement = 15% of 28,55,000 = 4,28,250
 \Rightarrow Total = 6,74,250
 \therefore percent = $\frac{674250}{(2050000+2855000)} \times 100 \Rightarrow 13.7\%$

Set 6

1. (3) 2007 = 4% of 25 lakhs = 1lakh
 2008 = 6% of 20 lakhs =1.2 lakh \Rightarrow 1999
2. (2) Voters 2005 = 4% of 16 lakhs = 64,000
 Voters in '06 = 5% of 20 lakhs = 1,00,000
 \therefore growth = $\frac{100000-64000}{64000} \times 100 \Rightarrow 56\%$
3. (1) Voters in 2004 = 3% of 15 lakhs = 45000
 Voters in 2005 = 4% of 16 lakhs = 64000
 increase = 64,000-45,000= 19,000
 \therefore increase in population = 1 lakh \Rightarrow increase in voters as a

$$\text{percent of the increase in the electorate} = \frac{19000}{100000} \times 100 = 19\%$$

4. (3) 2006, 2007, 2008 had voters more than 1 lakh.
5. (4) (2008) 1.2 lakh - (2004) 45000 = 75000

Set 7

1. (1) The total number of prisoners for theft are

$$2004 = 10,000$$

$$2005 = 5,000$$

$$2006 = 2,000$$

$$2007 = 5000, \text{ hence answer is } 2004$$

- 2.(3) No. of murders in

$$2004 = 7,000 \Rightarrow \text{Required percentage} = \frac{7000}{26000} = 28\%$$

$$2005 = 4000 \Rightarrow \text{Required percentage} = \frac{4000}{20000} = 20\%$$

$$2006 = 8000 \Rightarrow \text{Required percentage} = \frac{8000}{16000} = 50\%$$

$$2007 = 6000 \Rightarrow \text{Required percentage} = \frac{6000}{20000} = 30\%$$

- 3.(1) Total under trials = 2005 = 7000; 2006 = 1000 ; 2007 = 4000

$$\text{Total} = 12000$$

$$\text{Total prisoners} - 20 + 16 + 20 = 56000$$

$$\therefore \% = \frac{12000}{56000} = 21.42\%$$

- 4.(4) Total minor offences = 4000

$$\therefore \text{total left} = 20 - 4 = 16,000$$

$$\therefore \% \text{ of theft prisoners} = \frac{5,000}{16,000} \times 100 = 31\% \text{ approx}$$

5.(1)

Set 8

1. (3) 2006 \rightarrow 50 2007 \rightarrow 110 $50 < \frac{1}{2}(110) = 55$

2. (3) $\frac{10+30+10+20}{4} = 17.5$ or 17,500

3. (1) $\left(\frac{20+30+30+70}{70+90+50+110} \right) = \frac{150}{330} \times 100 = 45.6\%$

4. (4) 2004 $\rightarrow \frac{10}{20} = 0.5$

$$2005 \rightarrow \frac{30}{30} = 1$$

$$2006 \rightarrow \frac{10}{30} = 0.333$$

$$2007 \rightarrow \frac{20}{70} = 0.2$$

5. (2) $(1.05 \times 20) + (1.1 \times 30) + (1.15 \times 10) = 65,500$

Set 9

1. (2) The answer can be determined without calculating the interest of all individuals as Dick is investing much more money than the least and the interest rates almost the same in all the banks.

2. (1) He gets 3% more on Rs. 1225 = Rs. 37.65 more per year.

3. (3) $(0.11)(2,110 + 3,400 + 2,475 + 800) = (0.11)(8,775)$
 $= 965.25$

4. (4) Bank 4 (Rs. 98.15)

5. (4) $(0.1)(3325) + (0.11)(8775) + (0.12)(11700)$
 $+ (0.13)(7350)$

$$= \text{Rs. } 3657.25$$

Set 10

- (1) $\frac{50,000}{25} \times 20 = \text{Rs. } 40,000$ is the total amount spent on royalty.
 \therefore Author -1 gets $\frac{25}{100} \times 40,000 = \text{Rs. } 10,000$
- (1) $\frac{0.2 \times 50,000}{1000} = \text{Rs. } 10$
- (2) $\frac{1.4 \times 50,000}{\frac{0.25}{1000}} = \text{Rs. } 280$
- (3) $\frac{37,500}{2,00,000} \times 100 = 18.75\%$
- (1) $\frac{2.5}{40} \times 100 = 6.25\%$

Set 11

- (4) According to the table the train travels at the speed of 65 kmph after 150 min.
- (3) $\frac{30}{40} \times 100 = 75\%$
- (4) There is an increase of 10 km in 1 hour or 60 minutes.
 \therefore the speed after time $t = 40 + \frac{t}{6}$.
- (1) The total distance travelled by the train is 165 kmph.
- (4) 4 hours, as the speed increases by 10 kmph every 1 hour.

Set 12

- (4) Comparing first two column we observe that only caustic soda has a decline in price over previous month.
- (3) The percentage increase of Citric acid is highest among given option ..

3. (2)% increase $\frac{5000 - 4900}{4900} = 2.04\%$

Price after two months = $(1 + 2.04)^2 5000 = \text{Rs. } 5202$

4. (4) $\frac{\frac{4425 - 4325}{6600 - 6450}}{6450} = \frac{2.3}{2.27}\% = 1$

5. (3) Loss = $(15525 - 11875) 200 = \text{Rs. } 730,00$

Set 13

1. (2) Average ratio of growth in index for coal

$$= \frac{220 - 100}{100 \times 9} \times 100\% = 13.3\%$$

2. (2) Mica and iron index are almost same through out the graph.

3. (1) Production in 2002

$$= \frac{\text{index of 1982}}{\text{Index of 1978}} \times 2,30,000 = \frac{380}{200} \times 230000 = 437000$$

4. (2) 2001 was the year which had coal to iron index maximum.

5. (1) its obvious from the graph that coal had least growth rate in that period

Set 14

1. (1) Software industry size = domestic + exports

size in 06 - 08 = $430 + 570 = 1000 \text{ cr.}$

size in 07 - 08 = $580 + 750 = 1330 \text{ cr.}$

$$\text{Ratio} = \frac{1330}{1000} = 1.33$$

2. (3) Software exports to USA 07 -08 = $0.51 \times \text{total exports in '07-'08} = 0.51$

$\times 750 = 382.5$ Size of the computer industry in 2007-08 = Total software industry size/software as a % of the computer industry =

$$\frac{750 + 580}{0.39} = \frac{1330}{0.39} = 3410.25 \text{ cr.}$$

$$\% = \frac{382.5}{3410.25} \times 100 = 11.22\%$$

3. (1) Size of computer industry in 2006-07 = $\frac{430+570}{0.28} = 3571.43$ cr.
 % of domestic software to computer industry = $\frac{430}{3571.43} \times 100 = 12.04\%$
4. (4) Computer industry size in Rs. Crores
 In 2004-05, $240/0.15 = 1600$
 In 2006-07, $1000/0.28 = 1000/0.28 = 3571.4$
 Annual growth rate : $1600(r)^2 = 3571.4$
 Therefore $r = 49\%$
5. (2) Growth rate of exports from 2004-05 to 05-06 = $\frac{300}{40} = 7.5$
 If domestic software grows at the above rate, the new domestic software sector's size = $200 \times 7.5 = 1500$ cr.

Set 15

1. (1) $\frac{595}{2.17} + \frac{1445}{1.97} = 1007.7$ cr.
2. (2) Tyre imports = $\frac{165}{3.3} + \frac{400}{3.1} = 179 = \179 Cr.
 If exchange rate is not affected on July 1, 2009
 Tyre imports = $\frac{165+400}{3.3} = 171.2 = \171.2 cr.
 Ratio = $\frac{179}{171.2} = 1.05$
3. (3) % of increase in \$ price = cost per \$ after July 1, in Rs/Cost per \$ in Rs. before July 1 = 6.45%
 Similarly % increase in pound price = $\frac{2.17}{1.97} - 1 = 10.15\%$
 % increase in Yen price = $\frac{412}{376} - 1 = 6.9\%$
 % increase in DM price = $\frac{5.11}{4.91} = 4.1\%$
 % increase in Franc price = $\frac{4.66}{4.4} = 5.9\%$
4. (1) Sum of all imports = Rs. 7688 crores
5. (1) Total exports from Switzerland = 20% of 1100 + 50 % of 53 + 20% of 165 + 30% of 595 + 10% of 255 = 483.5 crores(INR)

In Swiss franc = $(/100) \times 4.66 = 22.55$ crores

Set 16

1. (3)

	Production	Cost	
Alexandria	700	700×25	\$17,500
Richmond	600	600×23	\$13,800
Norfolk	500	500×21	\$10,500
Roanoke	450	450×22	\$9,900
Total	2250		\$51,700

$$\text{Average cost} = \frac{51,700}{2250} = \$23$$

2. (3) Cost of ice cream (+ transportation) from

$$\text{Alexandria} = \$25 + \$2 = \$27$$

$$\text{Roanoke} = \$23 + \$4 = \$27$$

$$\text{Richmond} = \$23 + \$4 = \$27$$

$$\text{Norfolk} = \$22 + \$3 = \$25$$

3. (2) Cost of ice-cream at

$$\text{Alexandria} = \$25 + \$2.50 = \$27.50$$

$$\text{Roanoke} = \$22 + \$2.20 = \$24.20$$

$$\text{Danville} = \$ (22 + 4) + \$2.60 = \$28.60$$

$$\text{Norfolk} = \$21 + \$2 + \$2.3 = 25.3$$

4. (1) Cost of ordering 100 gallons from Richmond = $\$23 + \$4.00 = \$27$ per gallon
- 100 gallons cannot be ordered from Roanoke since their excess capacity is $500 - 300 - 150 = 50$ gallons.
- Cost of ordering 50 gallons from Roanoke = $\$22 + \$2.50 = \$24.50$
5. (2) Only two of the six depots will satisfy the given condition.

Set 17

1. (4) Cars in 2004 = 11,000,00
- Buses in 2004 = 200,000
- Excess = 900,000
- Excess % = $(900,000/200,000) \times 100 = 450\%$
2. (4) observe the graph and answer the question. percent increase in trucks from
- 2005-2006 is largest.
3. (3) Total trucks from 2003 - 2006
- $(650 + 700 + 750 + 850)$ thousand.
- Average = 737500
4. (4) In 2005 buses = 250000
- Cars = 1150000
5. (4) No data on sales is given.

Set 18

1. (2) Hours worked on Thursday = 12

$$\text{Compensation} = 4 \times 12 = 48.00 + 4 \times 14.4 = 57.60 + 17.4 = 69.60 = 175.20$$

2. (4) X in Michael's case is not known.

3. (2) Salary on Monday = $40 + 48 = \text{Rs. } 88$

$$\text{Tuesday} = 40 + 48 + 14.5 = \text{Rs. } 102.5$$

$$\text{Wednesday} = 40 + 48 = \text{Rs. } 88$$

$$\text{Thursday} = 40 + 48 + 58 = \text{Rs. } 146$$

$$\text{Friday} = 40 + 36 = \text{Rs. } 76$$

$$\text{Saturday} = 40 + 48 + 14.5 = \text{Rs. } 102.5$$

4. (4) Salary for the week was $\frac{1}{2} (88 + 102.5 + 88 + 46 + 76 + 102.5)$ from question 3.

$$\text{Total} \quad \frac{1}{2} \quad (603) \quad = \quad 301.50$$

5. (2) He must come on Tuesday for working to satisfy given condition

Set 19

1. (2) Cost of producing 100 units a day

	A	B
Maintenance per day	30.00	20.00
Supplies per day	-	5.00
Operator per day	25.00	25.00
	55.00	50.00

2. (4) There is no variable cost (i.e. cost of supplies which varies with production) on Machine A
3. (4) The cost of producing items on B depends on the quantity produced.
4. (2) Let the production be x . From question 161 we know that at a production level of 200 units per day the cost of manufacture is the same.
5. (1) Average time taken to
Load machine = 0.30 minutes
Machine time = 2.7 minutes
Unload machine = 0.12 minutes
inspect product = 1.21 minutes
Average time for an operation on A = 4.33 minutes
Average number of operations per day A is $\frac{8 \times 60}{4.33} = 110$

Set 20

1. (3) d can only take the value of 4. All others can take different values.
2. (1) if a is fixed, others alphabets are arranged based on condition. hence only one set is possible
3. (3) if f is fixed , others alphabets are arranged based on condition in two ways .hence two sets are possible . a and c can interchange its value
4. (2) if d is fixed , others alphabet are arranged based on condition in four ways
5. (1) only one set of value are possible.

