

Pie Chart

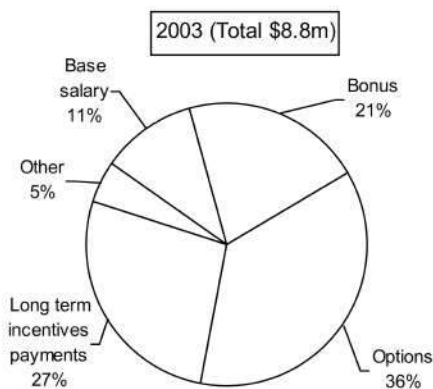
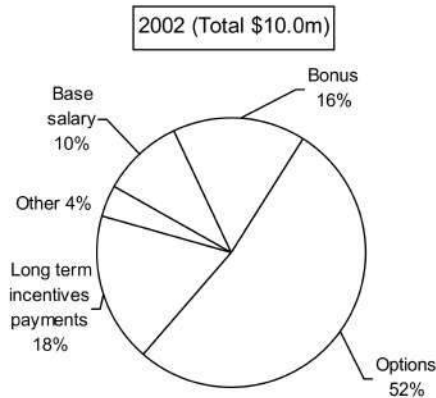
PRACTICE EXERCISE

Level - 1

Directions for questions 1 to 5: Refer to the pie charts below and answer the questions that follow:

The pie-charts given below represents the percentage breakup of average compensation (in million dollars) of US Chief Executives under different heads namely Base salary, Bonus, Options, Long term incentives payments and Others.

Percentage breakup of average compensation of US chief executives in 2002-2003

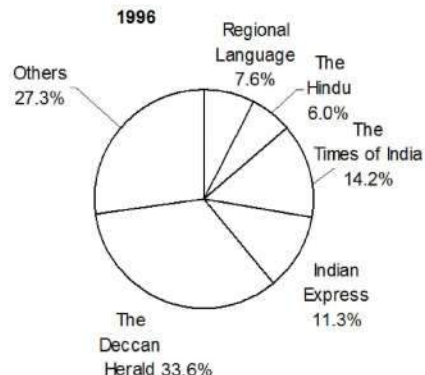


- What is the percentage change in the value of options in average compensation of US chief executives in the year 2003 over the previous year?
 - 38% decrease
 - 55% increase
 - 55% decrease
 - 38% increase
 - None of these

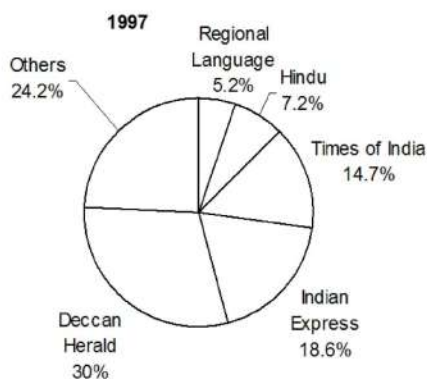
- If there were 4,800 and 5,600 companies in US in 2002 and 2003 respectively, then what is the average compensation of US chief executives of newly established 800 companies? (Assume that the compensation for old companies remains the same)
 - \$1.6 million
 - \$16 million
 - \$12.8 million
 - \$1.28 million
 - Cannot be determined
- What is the ratio of change in long term incentives payments to the change in bonus of average compensation of US chief executives in the year 2003 over the previous year?
 - 9 : 5
 - 7 : 3
 - 11 : 7
 - 7 : 2
 - 11 : 3
- What percentage of change in options is diverted to bonus to US chief executives during 2002-2003 if the number of US companies remained the same during the given period?
 - 7.2%
 - 9.6%
 - 12.4%
 - 10.8%
 - 13.6%
- What is the change in the base salary of US chief executives from 2002 to 2003?
 - \$ 0.024 m increase
 - \$ 0.024 m decrease
 - \$ 0.032 m increase
 - \$ 0.032 m decrease
 - None of these

Direction for questions 6 to 10: These questions are based on the following data.

Percentage sale of different newspapers in Bangalore in 1996 and 1997



Total Sales = Rs. 9.20 crore

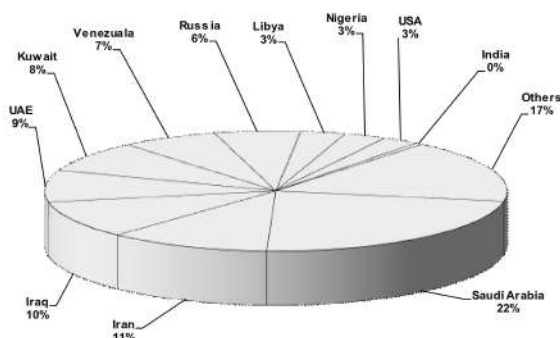


Total Sales = 28.2 crore

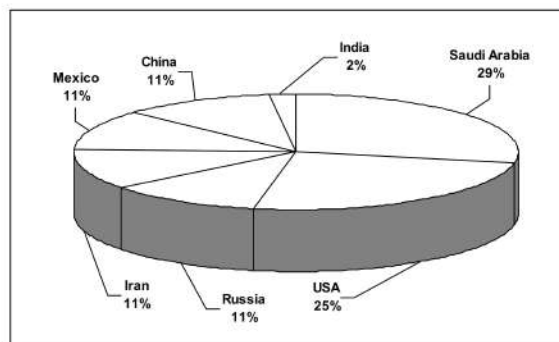
6. How much more was the sales of Deccan Herald than that of Hindu in 1996 ?
 (a) Rs. 1.5 crore (b) Rs. 2 crore
 (c) Rs. 2.5 crore (d) Rs. 3 crore
 (e) Rs. 3.5 crore
7. Which of the following is the best approximation of the ratio of sales of Times of India in 1996 to that in 1997 ?
 (a) 1 : 3 (b) 1 : 2
 (c) 1 : 1 (d) 2 : 1
 (e) 3 : 1
8. If the total sales in 1996 is not Rs. 9.2 crore and the sales of Regional Language newspapers is Rs. 1.32 crores, what is the total sales ?
 (a) Rs. 34.2 crore
 (b) Rs. 25.4 crore
 (c) Rs. 17.4 crore
 (d) Rs. 15.9 crore
 (e) Rs. 12.8 crore
9. Of all the newspapers shown on pie charts which is the fourth largest sold newspaper ?
 (a) The Times of India in 1997
 (b) The Deccan Herald in 1996
 (c) The Hindu in 1997
 (d) Regional Language in 1997
 (e) None of these
10. Which newspaper experienced greatest growth in 1997 over 1996 ?
 (a) The Times of India
 (b) Regional Language
 (c) Others
 (d) The Deccan Herald
 (e) None of these

Directions for questions 11 to 14: Study the pie charts and answer the questions given below.

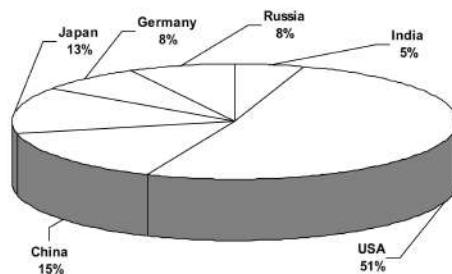
The first pie chart gives the percentage distribution of Global Reserves of Oil in different parts of the world namely Saudi Arabia, Iran, Iraq, UAE, Kuwait, Venezuela, Russia, Libya, Nigeria, USA, India and others. The second and the third pie chart give the percentage distribution of oil production and consumption by these countries on a daily basis.



Global Reserves of Oil



Daily Oil Production



Daily Oil Consumption

11. If estimated global reserves of oil are 1146.49 billion barrels, then the level of reserves located in the USA in billion barrels would be approximately.
 (a) 29 billion barrels (b) 34 billion barrels
 (c) 36 billion barrels (d) 48 billion barrels
 (e) 24 billion barrels

12. Daily production and consumption figures of India are 0.66 and 2.2 million barrels. For which of the following countries the difference between consumption and production is the lowest?

- (a) Iran (b) India
(c) Saudi Arabia (d) Russia
(e) USA

13. Reserves and annual production figures for India are 5.58 and 0.4 billion barrels respectively. Which country has the lowest ratio of annual production to reserves?

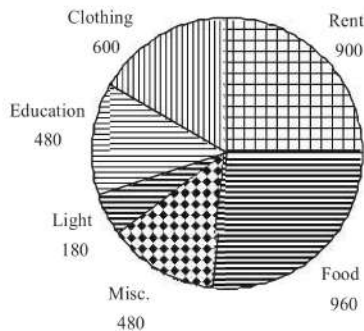
- (a) USA (b) Iran
(c) Saudi Arabia (d) India
(e) None of these

14. The reserves located in Libya as percentage of reserves located in Russia is

- (a) 50% (b) 52%
(c) 54% (d) 56%
(e) 58%

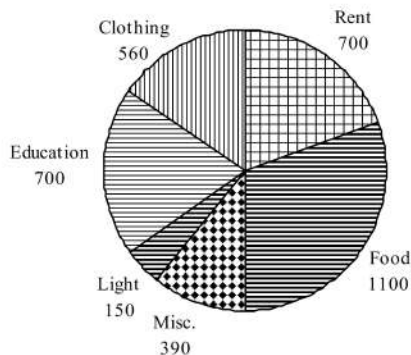
Direction for questions 15 to 19: The two pie diagrams below provide the relative expenses of 2 families.

FAMILY A



Total expenses = Rs. 4,800

FAMILY B



Total expenses = Rs. 7,200

15. If the total expenses of the two families are doubled the ratio of expenditure on "light" would be

- (a) 1 : 1 (b) 3 : 5
(c) 2 : 3 (d) 5 : 4
(e) 4 : 5

16. If the expenses of family B increases three fold, the expenses on education would be

- (a) 19.55% (b) 20.44%
(c) 21.67% (d) 19.44%
(e) 22.95%

17. The expenses on miscellaneous by family A as a per cent of expenses on miscellaneous of family B is

- (a) 64% (b) 56%
(c) more than 80% (d) 80%
(e) 49%

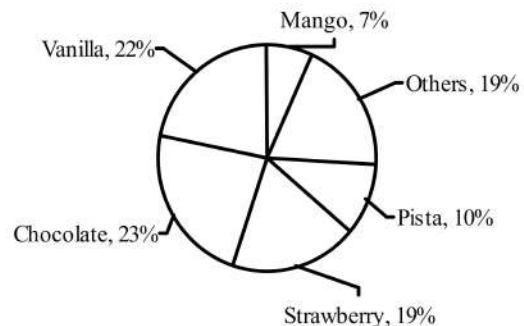
18. The item showing the least difference in expenditure between the 2 families is :

- (a) food (b) light
(c) clothing (d) miscellaneous.
(e) education

19. The percentage expenses of families A and B on Food are in a ratio

- (a) 55 : 48 (b) 4 : 5
(c) 5 : 4 (d) 48 : 55
(e) 8 : 9

Direction for questions 20 to 24: Answer the questions using data from the pie chart.



Market share of different flavours of ice-cream

20. If the total market of icecreams is Rs. 445 crores, what is the contribution of chocolate flavour? (in Rs. crores)

- (a) 152.5 (b) 102.35
(c) 108 (d) 110
(e) None of these

21. What is the difference between the share of Mango and Vanilla? (in Rs. crores) (use data from Question 23)

- (a) 66.75 (b) 31.5
(c) 71.2 (d) 76.9
(e) 70

22. If Chocolate is 20 per cent costlier than Strawberry, what is the difference in volume sales of Strawberry and Chocolate?

- (a) 4% (b) 25%
(c) 12% (d) 0.83%
(e) 15%

23. If the total market of icecreams goes up by 15 per cent and contribution of others in monetary term remains the same, what is the new share of other flavours in the market?

- (a) 16.5% (b) 17.23%
(c) 15.5% (d) 18%
(e) 20%

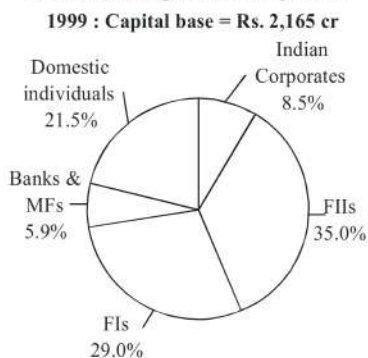
24. If Mango ice cream costs Rs. 60 per litre, what is the approximate volume sales of Mango flavour when the total ice cream market is Rs. 445 crores?

- (a) 5.2×10^5 litres (b) 5×10^6 litres
(c) 52,000 litres (d) 38×10^5 litres
(e) 52×10^5 litres

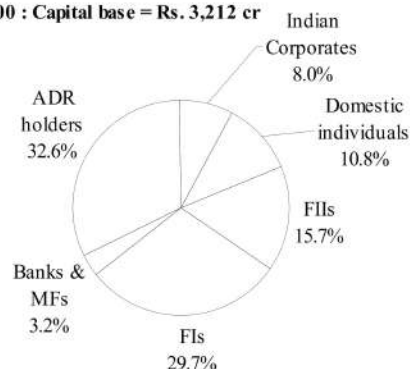
Level - 2

Direction for questions 25 to 28: Refer to the pie charts below.

Shareholding Pattern by ICICI



2000 : Capital base = Rs. 3,212 cr



25. ADRs or American Depository Receipts are shares issued in America. If the capital base of ICICI has increased only because of an ADR issue, then at what price was the ADR issued? Total ADRs issued = 5 crore.

- (a) Rs. 210 (b) Rs. 315
(c) Rs. 250 (d) Rs. 320
(e) Rs. 275

26. By what percentage has the value of domestic individual's shareholding in ICICI changed from 1999 to 2000?

- (a) -39% (b) -34.15%
(c) -50% (d) -25.5%
(e) -42.5%

27. Reliance Ltd. holds shares worth Rs. 50 crore in ICICI in 1999. If Reliance Ltd. is categorised under the head Indian corporates, then what has been the change in the percentage of shares held by Reliance amongst Indian corporates from 1999 to 2000?

- (a) -15% (b) -32%
(c) -40% (d) -35%
(e) -45%

28. Debt-equity ratio is the ratio of amount of debt of the company to its capital base. If ICICI maintains the debt equity ratio in both 1999 and 2000 at 2 : 1, then how much debt does ICICI raise in 2000?

- (a) Rs. 1,097 crore (b) Rs. 2,094 crore
(c) Rs. 550 crore (d) Rs. 1100 crore
(e) None of these

ANSWERS

1. (a) 2. (a) 3. (b) 4. (c) 5. (d) 6. (c) 7. (a) 8. (a) 9. (a) 10. (d)
11. (a) 12. (d) 13. (b) 14. (b) 15. (e) 16. (d) 17. (c) 18. (b) 19. (d) 20. (b)
21. (a) 22. (a) 23. (a) 24. (e) 25. (a) 26. (d) 27. (b) 28. (b)

SOLUTIONS

Level - 1

1. a Value in options in average compensation in 2002
 $= 0.52 \times 10 = \$ 5.2 \text{ m}$
 Value of options in average compensation in 2003
 $= 8.8 \times 0.36 = \$ 3.2 \text{ m}$

$$\therefore \text{Percentage change} = \frac{3.2 - 5.2}{5.2} \times 100\% = -38\%$$

2. a Total compensation of U.S. chief executives in 2002
 $= 10 \times 4,800$
 $= \$ 48,000 \text{ m}$
 Total compensation of U.S. chief executives in 2003
 $= 8.8 \times 5,600 = \$49,280 \text{ m}$
 So, Average compensation of U.S. chief executives of newly established 800 companies

$$= \frac{49,280 - 48,000}{800}$$

$$= \frac{1,280}{800} = \$1.6 \text{ m.}$$

3. b Change in long term incentives payments of average compensation of US Chief Executives
 $= 0.27 \times 8.8 - 0.18 \times 10$
 $= 2.376 - 1.8$
 $= \$0.576 \text{ m}$

Change in bonus payments of average compensation of US chief executives
 $= 0.21 \times 8.8 - 0.16 \times 10.0$
 $= 1.848 - 1.6$
 $= \$0.248 \text{ m}$

$$\therefore \text{Required ratio} = 576 : 248 = 7:3.$$

4. c Change in options = \$ 2 m
 Increase in bonus = \$0.248 m.
 \therefore Percentage of change in options diverted to bonus
 $= \frac{0.248}{2} \times 100 \approx 12\%$

5. d Change in base salary = $1 - 8.8 \times .11 = \$0.032 \text{ m}$

6. c Rs 2.5 crores

7. a $\approx 9.2 : 28.2 \approx 1 : 3$

8. a

9. a The Times of India in '97

10. d Deccan Herald gained 5.34 Cr.

11. a 2.53% of 1146.49 = 29 billion barrels

12. d (i) Daily production of India = 0.66 million barrels
 Daily consumption of India = 2.2 million barrels
 Difference between the consumption and the production = 1.54 million barrels.

(ii) Daily production of Iran = $\frac{0.66}{1.86} \times 11.27$
 $= 4 \text{ million barrels}$

Daily consumption of Iran = 0

- (iii) Daily production of Saudi Arabia

$$= \frac{0.66}{1.86} \times 28.17$$

$$= 10 \text{ million barrels}$$

Daily consumption of Saudi Arabia = 0

- (iv) Daily production of Russia

$$= \frac{0.66}{1.86} \times 11.27$$

$$= 4 \text{ million barrels}]$$

Daily consumption of Russia

$$= \frac{2.2}{5.13} \times 7.69$$

$$= 3.3 \text{ million barrels}$$

Difference between the consumption and the production of Russia = 0.7 m barrels

13. b

Country	Reserves	Annual Production	Ratio Annual Production Reserves
India	5.58	0.24	$\frac{0.24}{5.58} = 0.043$
USA	27.15	3.21	$\frac{3.21}{27.15} = 0.118$
Iran	121.69	1.45	$\frac{1.45}{121.69} = 0.012$
Saudi-Arabia	245.2	3.63	$\frac{3.63}{245.20} = 0.015$

14. b Oil reserves in Russia = 6.02%
Oil reserves in Libya = 3.14%
Suppose 3.14 = x% of 6.02
- $$\Rightarrow x = \frac{3.14}{6.02} = \frac{31400}{602} = 52.16 \approx 52\%$$
- \therefore Reserves located in Libya
= Approx 52% of the reserves located in Russia
15. e Family A yields $18/360 \times 9600 = \text{Rs. } 480$
B yield $15/360 \times 14400 = \text{Rs. } 600$
 \Rightarrow ratio = 480 : 600 = 4 : 5
16. d Percent on education shall remain at $70/360 \times 100$
17. c Family A spends $48/360 \times 4800 = \text{Rs. } 640$
B spends $39/360 \times 7200 = \text{Rs. } 780$
 \Rightarrow required % = $640 / 780 \times 100 = 82\%$
18. b For family A, Light = $18/360 \times 4800 = 240$
For family B, Light = $15/36 \times 7200 = 300$
 \Rightarrow difference = $300 - 240 = \text{Rs. } 60$ (least)
19. d %exp. of A on food = $96/360 \times 100$
% exp. of B on food = $110/360 \times 100$
 \Rightarrow Ratio = 96: 110 = 48 : 55
20. b Vanilla = 23% = $23/100 \times 445 = \text{Rs. } 102.35$ cr.
21. a Share of Vanilla – Share of Mango = $22 - 7 = 15\%$
Thus, $15/100 \times 445 = \text{Rs. } 66.75$ cr.
22. a If 100 litres of Strawberry were sold at Rs 10 per litre yielding Rs. 1,000, 100 litres of Chocolate were sold at Rs. 12 (20% costlier than Chocolate) yielding Rs. 1,250 (share of Chocolate = 25%, and share of Strawberry = 20%).
or $x = 1250/12 = 104.15$ litres or difference in
volume of sales = $\frac{104 - 100}{100} = 4\%$
23. a If total market is Rs.100 at present that of others is Rs. 19 (19%). The next year the market increases to Rs. 115 (15% increase) while that of the others remains at Rs.19.
Share = $19/115 = 16.5\%$

24. e Total sales of Mango = $7/100 \times 445 = \text{Rs. } 31.15$ cr.
Volume of sales = $31.15/60 = 52 \times 10^5$ litres

Level - 2

25. a Cost of ADR = Value of issue/No.of ADRs issued
= Increase in capital/No.of ADRs
= $1047/5 \approx 209.5$ cr.
26. d 1999 value of DIs shareholding
= 21.5% of 2165 = 465.5.
2000 value of DIs shareholding
= 11% of 3212 = 346.9
- $$\text{Percentage change} = \frac{346.9 - 465.5}{465.5} = -25.5\%$$
27. b Reliance's share amongst corporates holding ICICI shares in 1999 (where 1 unit = 216.5 crore)
- $$= \frac{50 \text{ crore}}{8.5\% \text{ of } 2165}$$
- $$= \frac{50 \text{ crore}}{8.5\% \text{ of } 100 \text{ units}}$$
- Reliance's share amongst corporates holding ICICI shares in 2000 (where 1 unit = 321.2 crore)
- $$= \frac{50 \text{ crore}}{8.5\% \text{ of } 3212}$$
- $$= \frac{50 \text{ crore}}{8.5\% \text{ of } 148 \text{ units}}$$
- \therefore Percentage change
- $$= \frac{\frac{50 \text{ crore}}{8.5\% \text{ of } 148 \text{ units}} - \frac{50 \text{ crore}}{8.5\% \text{ of } 100 \text{ units}}}{\frac{50 \text{ crore}}{8.5\% \text{ of } 100 \text{ units}}}$$
- $$= \frac{4.0 - 5.9}{5.9}$$
- $$= -32\%$$
28. b ICICI to maintain debt equity ratio at 2 : 1 will have to raise double the amount in debt that it raises by capital. Capital increase is Rs. 1,047 crore.
Hence, debt increase is $2 \times 1047 \text{ cr} = \text{Rs. } 2,094$ crore.

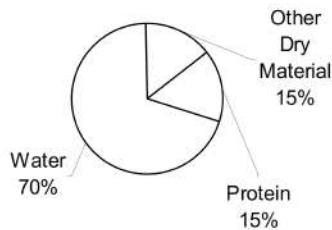
PREVIOUS YEARS QUESTIONS

LEVEL - 1

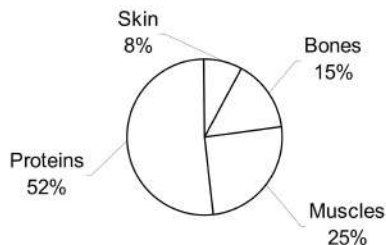
1994

Directions for Questions 1 to 4: Answer the questions on the basis of the information given below.

Distribution of material in Ghosh Babu's body (as % of total body weight)



Occurance of Proteins in different organ's of Ghosh Babu's body



- What fraction of Ghoshbabu's weight consists of muscular and skin protein?
 - $\frac{1}{13}$
 - $\frac{1}{30}$
 - $\frac{1}{20}$
 - Cannot be determined
- Ratio of distribution of protein in muscle to the distribution of protein in skin is
 - 3 : 1
 - 3 : 10
 - 1 : 3
 - $3\frac{1}{2} : 1$
- What percent of Ghosh Babu's body weight is made up of skin
 - 0.15
 - 10
 - 1.2
 - Cannot be determined
- In terms of total body weight, the portion of material other than water and protein is closest to
 - $\frac{3}{20}$
 - $\frac{1}{15}$
 - $\frac{85}{100}$
 - $\frac{1}{20}$

2001

Directions for Questions 5 to 7: Answer the questions based on the pie charts given below.

Chart 1 shows the distribution of 12 million tonnes of crude oil transported through different modes over a specific period of time. Chart 2 shows the distribution of the cost of transporting this crude oil. The total cost was Rs. 30 million

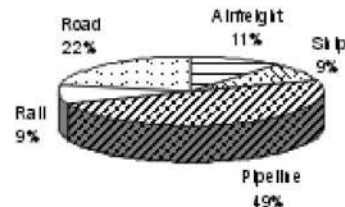


Chart 1: Volume transported

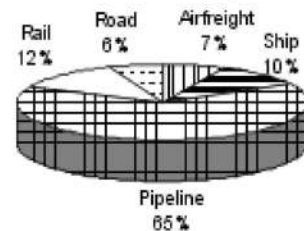


Chart 2: Cost of transportation

- The cost in rupees per tonne of oil moved by rail and road happens to be roughly
 - Rs. 3
 - Rs. 1.5
 - Rs. 4.5
 - Rs. 8
- From the charts given, it appears that the cheapest mode of transport is
 - road
 - rail
 - pipeline
 - ship
- If the costs per tonne of transport by ship, air and road are represented by P, Q and R respectively, which of the following is true?
 - $R > Q > P$
 - $P > R > Q$
 - $P > Q > R$
 - $R > P > Q$

2002

Directions for Questions 8 and 9: Answer the questions based on the pie charts given below.

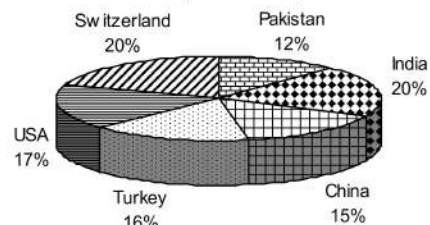


Chart 1

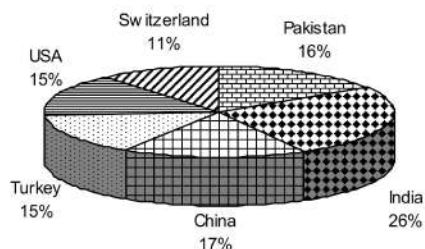


Chart 2

Chart 1 shows the distribution by value of top 6 suppliers of MFA Textiles in 1995. Chart 2 shows the distribution by quantity of top 6 suppliers of MFA Textiles in 1995. The total value is 5760 million Euro (European currency). The total quantity is 1.055 million tonnes.

8. The country which has the highest average price is
 - (a) USA
 - (b) Switzerland
 - (c) Turkey
 - (d) India
9. The average price in Euro per kilogram for Turkey is roughly
 - (a) 6.20
 - (b) 5.60
 - (c) 4.20
 - (d) 4.80

LEVEL - 2

1999

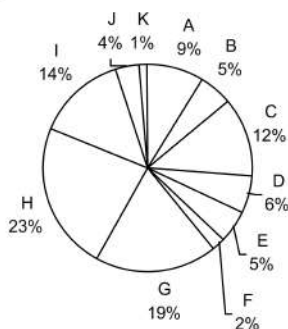
Directions for Questions 10 to 15: Answer the questions on the basis of the information given below.

Consider the information provided in the figure below relating to India's foreign trade in 1997-98 and the first eight months of 1998-99. Total trade with a region is defined as the sum of exports and imports from that region. Trade deficit is defined as the excess of imports over exports. Trade deficit may be negative.

- | | |
|-------------|----------------------------------|
| A. USA | G. Other East European countries |
| B. Germany | H. OPEC |
| C. Other EU | I. Asia |
| D. UK | J. Other LDCs |
| E. Japan | K. Others |
| F. Russia | |

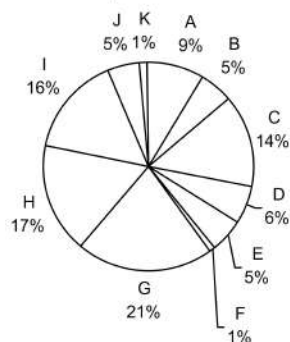
Source of imports 1997-98

Imports into India \$40,779 million



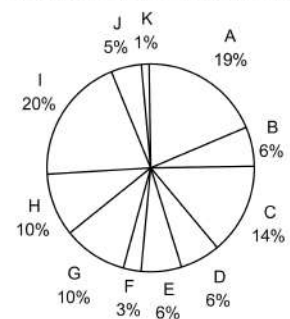
1998-99 Imports into India (April-November)

\$28,126 million



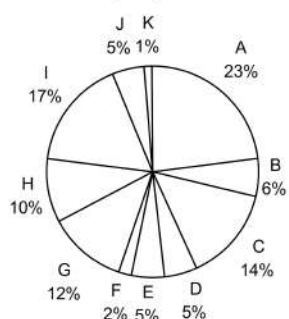
Destination of exports 1997-98

Exports from India: \$33,979 million



1998-99 Exports from India (April-November)

\$21,436 million



10. What is the region with which India had the highest total trade in 1997-98?
 - (a) USA
 - (b) Other EU countries
 - (c) OPEC
 - (d) Others
11. In 1997-98 the amount of Indian exports, million US dollars, to the region with which India had the lowest total trade, is approximately
 - (a) 750
 - (b) 340
 - (c) 220
 - (d) 440

12. In 1997-98, the trade deficit with respect to India, billion US dollars, for the region with the highest trade deficit with respect to India, is approximately equal to

- (a) 6.0 (b) 3.0
(c) 4.5 (d) 7.5

13. What is the region with the lowest trade deficit with India in 1997-98?

- (a) USA (b) Asia
(c) Others (d) Other EU countries

Additional directions for questions 14 and 15:

Answer the questions on the basis of the information given below.

Assume that the average monthly exports from India and imports to India during the remaining four months of 1998-99 would be the same as that for the first eight months of the year.

14. What is the region to which India's exports registered the highest percentage growth between 1997-98 and 1998-99?

- (a) Other East European countries
(b) USA
(c) Asia
(d) Exports have declined, no growth

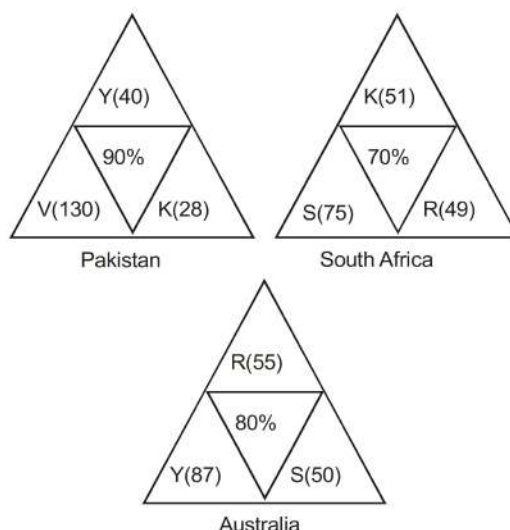
15. What is the percentage growth rate in India's total trade deficit between 1997-98 and 1998-99?

- (a) 43 (b) 47
(c) 50 (d) 40

2004

Directions for Questions 16 to 19: Answer the questions on the basis of the information given below.

Coach John sat with the score cards of Indian players from the 3 games in a one-day cricket tournament where the same set of players played for India and all the major batsmen got out. John summarized the batting performance through three diagrams, one for each game. In each diagram, the three outer triangles communicate the number of runs scored by the three top scorers from India, where K, R, S, V, and Y represent Kaif, Rahul, Saurav, Virender, and Yuvraj respectively. The middle triangle in each diagram denotes the percentage of the total score that was scored by the top three Indian scorers in that game. No two players score the same number of runs in the same game. John also calculated two batting indices for each player based on his scores in the tournaments; the R-index of a batsman is the difference between his highest and lowest scores in the 3 games while the M-index is the middle number, if his scores are arranged in a non-increasing order.



16. For how many Indian players is it possible to calculate the exact M-index?

- (a) 0 (b) 1
(c) 2 (d) More than 2

17. Among the players mentioned, who can have the lowest R-index from the tournament?

- (a) Only Kaif, Rahul or Yuvraj
(b) Only Kaif or Rahul
(c) Only Kaif or Yuvraj
(d) Only Kaif

18. How many players among those listed definitely scored less than Yuvraj in the tournament?

- (a) 0 (b) 1
(c) 2 (d) More than 2

19. Which of the players had the best M-index from the tournament?

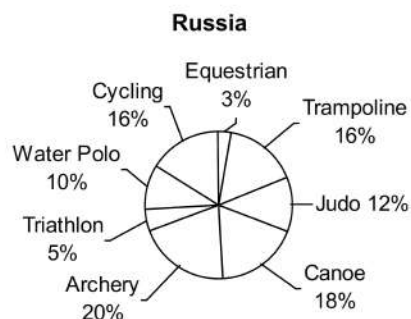
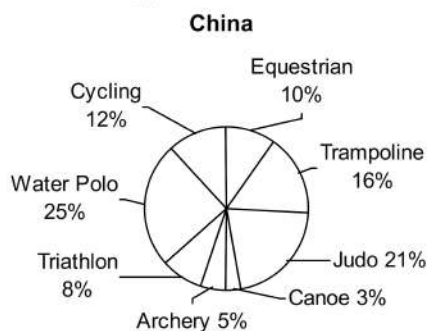
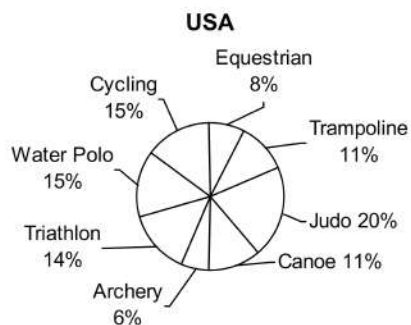
- (a) Rahul (b) Saurav
(c) Virender (d) Yuvraj

MEMORY BASED QUESTIONS

2013

Directions for questions 20 to 22: Answer the questions on the basis of the information given below.

The pie charts given below show the distribution of the number of athletes sent by three countries to take part in eight different games in the recently held Olympics. The numbers of athletes sent by USA, China and Russia were in the ratio 8 : 11 : 5. It is also known that the total number of athletes sent by the three countries put together was 2400.



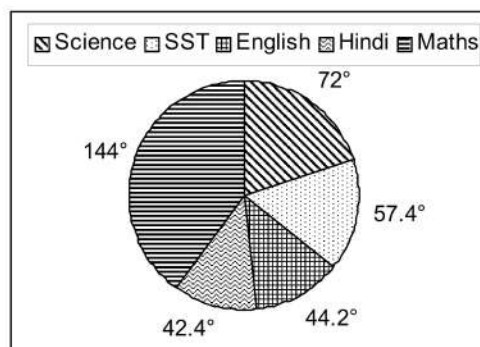
20. The female to male ratio for Cycling athletes from Russia and USA was 1 : 19 and 4 : 1 respectively. If the number of female Cycling athletes was equal to the number of male Cycling athletes for the three countries put together, then what was the number of female Cycling athletes from China?
- (a) 4 (b) 96
(c) 66 (d) None of these
21. What was the absolute difference between the maximum number of athletes sent by China for a game and the minimum number of athletes sent by Russia for a game?
- (a) 260 (b) 160
(c) 242 (d) 145
22. The number of Water Polo athletes constituted what percent of the total number of athletes sent by the three countries put together?
- (a) 20.00 (b) 18.90
(c) 22.30 (d) 18.54

2014

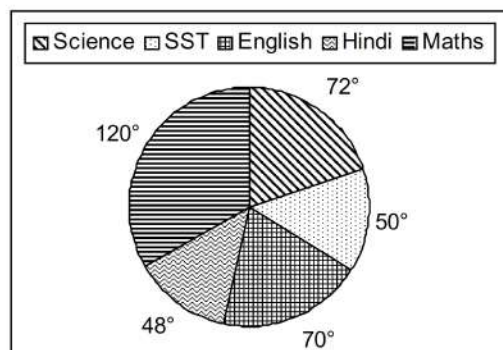
Directions for questions 23 to 26 : Answer the questions on the basis of the information given below.

The subject wise breakup of the marks obtained by 4 students in 5 subjects during their board examination is given below. Assume that all subjects carry equal maximum marks unless specified.

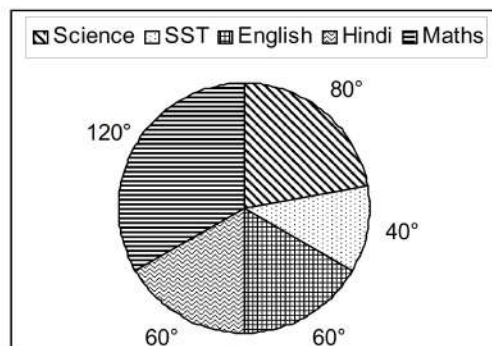
Geoffrey



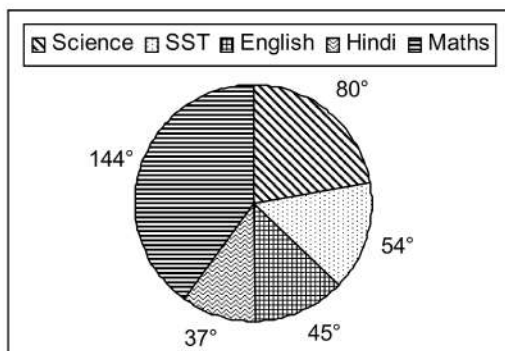
Tommen



Arya



Sansa



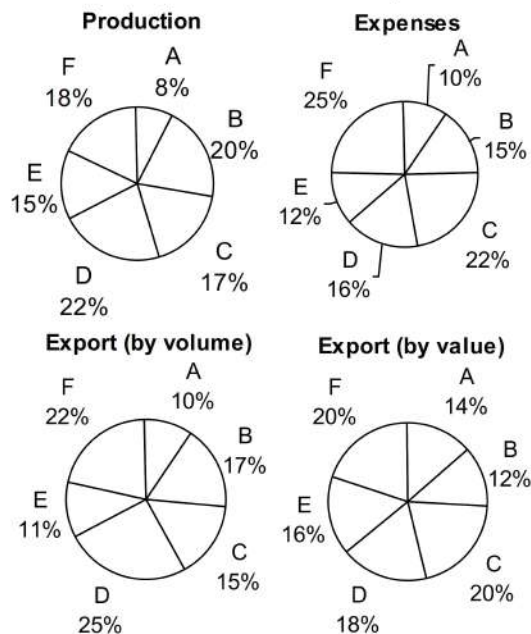
23. If the minimum percentage required to pass in any subject is 33.33 and it is also known that Arya passed in all the subjects, then what can be the minimum percentage that she can score in English?
- (a) 30% (b) 40%
(c) 50% (d) 60%
24. If the pattern of the examination is changed in such a way that the maximum marks for Maths is double of the maximum marks for any other subject (the breakup of marks remaining unchanged), then what is the ratio of maximum marks, in all the subjects put together, which Geoffrey can score to the maximum marks, in all the subjects put together, which Tommen can score?
- (a) 4 : 3 (b) 1 : 1
(c) 3 : 4 (d) 1 : 2
25. If the pattern of the examination is changed in such a way that the maximum marks for Maths is double of the maximum marks for any other subject (the breakup of marks remaining unchanged), then what is the ratio of maximum marks, in all the subjects put together, which Sansa can score after the change in pattern and before the change in pattern?
- (a) 35 : 54 (b) 3 : 2
(c) 2 : 3 (d) 9 : 5
26. If the marks scored by Geoffrey in Maths is maximum possible then what is the average of percentage marks scored by him in all the subjects?
- (a) 50% (b) 25%
(c) 10% (d) 12.5%

2015

Directions for questions 27 to 30 : Answer the questions on the basis of the information given below.

The following pie chart gives details of the production, expenses and export of the six products manufactured by company KL Enterprises, which manufactures only the given six products, in the year 2014. In the given

year, the company followed a very strict internal audit policy and any item that did not meet the specifications were rejected and disposed off. All the products exported were those manufactured in the same year itself.



Profit = Sales – Expenses

$$\text{Profitability (\%)} = \frac{\text{Profit}}{\text{Expenses}} \times 100$$

Note: Export is the only source of sales.

27. In 2014, the products exported as a percentage of the products manufactured by the company could not be more than
- (a) 73.3% (b) 81.81%
(c) 80% (d) 88%
28. In 2014, if product D was a profit making product for the company, what was the maximum number of products that were loss making products for the company?
- (a) 2 (b) 3
(c) 4 (d) Zero
29. The export price per unit of which product was the highest?
- (a) A (b) C
(c) D (d) E
30. For which product the rejection rate was maximum?
- (a) C (b) F
(c) E (d) B

ANSWERS

- | | | | | | | | | | |
|---------|---------|---------|---------|---------|---------|---------|---------|---------|---------|
| 1. (c) | 2. (a) | 3. (d) | 4. (a) | 5. (b) | 6. (a) | 7. (c) | 8. (b) | 9. (b) | 10. (c) |
| 11. (b) | 12. (a) | 13. (a) | 14. (b) | 15. (b) | 16. (c) | 17. (a) | 18. (b) | 19. (b) | 20. (c) |
| 21. (a) | 22. (d) | 23. (c) | 24. (b) | 25. (d) | 26. (a) | 27. (c) | 28. (b) | 29. (d) | 30. (c) |

SOLUTIONS

LEVEL - 1

1. c The skin & muscular protein totally constitutes 33% of the total proteins. The total proteins itself is 15% of the total body weight. Hence the percentage of skin & muscular protein as a fraction of the total body weight = 33% of 15% = 5%. = $\frac{1}{20}$.

Required fraction

$$= (8 + 25)\% \text{ of } 15\% = \left(\frac{1}{3}\right) \times \left(\frac{3}{20}\right) = \frac{1}{20}.$$

2. a Required Ratio = 25 : 8 \approx 3 : 1.
3. d We can determine only the percentage of skin protein in Ghosh Babu's total body weight. But there is no data given about the percentage of skin in Ghosh Babu's body. Hence the answer is (d).
4. a Proportion of material other than water & protein in Ghosh Babu's body is $\frac{15}{100} = \frac{3}{20}$.
5. b Cost in rupees of oil moved by rail and road is 18% of 30 million = 5.4 million.

Volume of oil transported by rail and road
= 31% of 12 million tonnes
= 3.72 million tonnes.

Cost in rupees per tonnes = $\frac{5.4}{3.72} = 1.5$ approximately.

6. a From the chart, we can make out the least among road, rail, pipeline, ship by looking at the ratio of cost to volume.

$$\text{Road} = \frac{6}{22}, \quad \text{Rail} = \frac{12}{9}$$

$$\text{Pipeline} = \frac{65}{49}, \quad \text{Ship} = \frac{10}{9}$$

Since ratio of cost to volume for road is the lowest, it is the cheapest.

7. c Ship, air and road.

Like the previous answer again look at ratio of

$$\frac{10}{9}, \frac{7}{11}, \frac{6}{22}$$

$$\text{So } \frac{10}{9} > \frac{7}{11} > \frac{6}{22}$$

Hence, $P > Q > R$.

8. b It can be easily observed from the two charts that Switzerland's ratio of chart 1 to chart 2 is $\frac{20}{11}$ has the highest price per unit kilogram for its supply. Finding the ratio of the value and quantity is enough to reach the solution.
9. b Total value of distribution to Turkey is 16% of 5760 million Euro.

Total quantity of distribution to Turkey is 15% of 1.055 million tonnes.

So the average price in Euro per kilogram for Turkey is

$$\frac{\left(5760 \times \frac{16}{100}\right)}{\left(1055 \times \frac{15}{100}\right)} \approx 5.6$$

LEVEL - 2

10. c Total trade with a region is defined as: The sum of exports and imports from that region, from the pie charts for 1997-98, we have the following sectors occupying maximum area.

	Country	Exports	Imports	Trade
H	OPEC	3397.9	9379.2	12795.1
I	Asia	6796	5709	12505
G	East Europe	3397	7748	11145.9
C	EU	4757	4893.5	9650.5
A	USA	6456	3670	10126

H – OPEC has the maximum trade.

11. b From the pie chart, the region having lowest trade is K.
1% of imports + 1% of exports
 \therefore Indian exports are 1% of 3397.9 which is roughly 340 million USD.

12. a

	Imports to India	Exports from India	Trade deficit
A	3670.11	6456.01	-2785.9
B	2038.95	2038.74	0.21
C	4893.48	4757.06	136.42
D	2446.74	2038.74	408
E	2038.95	2038.74	0.21
F	815.58	1019.37	-203.79
G	7748.01	3397.9	4350.11
H	9379.17	3397.9	5981.27
I	5709.06	6795.8	-1086.74
J	1631.16	1698.95	-67.79

So, we see that region H has highest trade deficit of approximately \$6,000 million or \$6 billion.

13. a From the pie chart for 1997-98, we get that USA which is a region A has the lowest trade deficit.
(9% of imports – 19% of total exports)

$$\left(\frac{9}{100} \times 40779 - \frac{19}{100} \times 33979 \right) = \$ - 2785.9 \text{ million.}$$

14. b From the pie chart, we know that the exports have increased from three regions A, G and H as follows.

	Country	1998-99	1997-98
A	USA	7395.4	6456
G	East European countries	3858.5	3397.9
H	OPEC	3215.4	3397.9

Also the exports for 8 months have been given. According to new directions, before question 247, we need to calculate exports for 12 months

$$\frac{21436 \times 12}{8} = \$32,154 \text{ million.}$$

The maximum percentage increase is therefore from region A.

15. b India's total trade deficits are as follows.

	Imports	Exports	Deficit
1997-98	40779	33979	6800
1998-99	42189	32154	10035

Total imports for 1998-99

$$= \frac{28126 \times 12}{8} = \$42,189 \text{ millions}$$

$$\begin{aligned} \text{Similarly, exports for 1998-99} &= \frac{28126 \times 12}{8} \\ &= \$32,154 \text{ millions} \\ \text{Percentage growth rate} &= \frac{10035 - 6800}{6800} \times 100 \\ &= 47.6\% \end{aligned}$$

For questions 16 to 19:

Go through the following table.

	Pakistan	South Africa	Australia
K	28	51	< 48
R	< 22	49	55
S	< 22	75	50
V	130	< 49	< 48
Y	40	< 49	87
Top 3 batsmen	198	175	192
India Total	220	250	240

16. c

17. a

18. b

19. b

For questions 20 to 22 :

The total number of athletes sent by:

$$\text{USA} = 2400 \times \frac{8}{24} = 800$$

$$\text{China} = 2400 \times \frac{11}{24} = 1100$$

$$\text{Russia} = 2400 \times \frac{5}{24} = 500$$

20. c Total number of Cycling athletes sent by the three countries together

$$= 0.15 \times 800 + 0.12 \times 1100 + 0.16 \times 500 = 332$$

Total number of female Cycling athletes sent by the three countries together = 166

Number of female Cycling athletes sent by Russia

$$= \frac{1}{20} \times (0.16 \times 500) = 4$$

Number of Cycling athletes sent by USA

$$= \frac{4}{5} \times (0.15 \times 800) = 96$$

Hence, the number of female Cycling athletes sent by China = $166 - (4 + 96) = 66$.

21. a Maximum number of athletes sent by China for a game = $0.25 \times 1100 = 275$

Minimum number of athletes sent by Russia for a game = $0.03 \times 500 = 15$

Hence, the required difference = $275 - 15 = 260$

22. d The total number of Water Polo athletes sent by the three countries put together

$$= 0.15 \times 800 + 0.25 \times 1100 + 0.10 \times 500 = 445$$

Hence, the required percentage

$$= \frac{445}{2400} \times 100 = 18.54.$$

23. c Minimum percentage to pass in a subject = 33.33%

Thus, 40° out of 360° represents 33.33%.

$\Rightarrow 60^\circ$ represents 50%.

24. b Let maximum marks for each subject other than maths = 100

\therefore Maximum marks in maths = 200.

For Geoffrey, $144^\circ = 200$ marks.

$\Rightarrow 360^\circ = 500$ marks.

For Tommen, if $120^\circ = 200$ marks then

$$72^\circ > 100 \text{ marks,}$$

which is not possible.

\therefore For Tommen, $72^\circ = 100$ marks

$\Rightarrow 360^\circ = 500$ marks.

\therefore Ratio of maximum marks, in all the subjects put together, which Geoffrey can score to the maximum marks, in all the subjects put together, which Tommen can score = 1 : 1.

25. d Before the change in pattern,

$$144^\circ = 100 \text{ marks}$$

$\Rightarrow 360^\circ = 250$ marks.

After the change in pattern,

$$80^\circ = 100 \text{ marks}$$

$\Rightarrow 360^\circ = 450$ marks.

\therefore Desired ratio = $450 : 250 = 9 : 5$.

26. a By the problem,

$$144^\circ = 100 \text{ marks}$$

$\Rightarrow 360^\circ = 250$ marks.

$$\therefore \text{Average percentage} = \frac{250}{500} \times 100 = 50\%.$$

27. c Let the production be $100x$ and export (volume) be $100y$.

As the share in export for three products (i.e. A, D and F is more than that in production but A witness the maximum change in share.)

For maximizing the export (volume) assume all volume of A is exported

$$\therefore 8x = 10y \Rightarrow \frac{y}{x} = 0.8 = 80\%.$$

28. b Let the expenses and export by value be $100x$ and $100y$ respectively.

As D is making profit

$$\therefore 16x > 18y \Rightarrow x > \frac{9}{8}y$$

Now, we can see that three products B, C and F can be in loss.

29. d Let export (by volume) and export by value be $100x$ and $100y$ respectively then price per unit for all products is shown below:

$$A = \frac{14y}{10x}, B = \frac{12y}{17x},$$

$$C = \frac{20y}{15x}, D = \frac{15y}{25x}$$

$$E = \frac{16y}{11x}, F = \frac{20y}{22x}$$

Hence, E has the highest price per unit.

30. c Let the production and export is $100x$ and $100y$ respectively.

Rejection rate of all products is given below:

$$A = 1 - \frac{10y}{8x}, B = 1 - \frac{17y}{20x}, C = 1 - \frac{15y}{20x}$$

$$D = 1 - \frac{25y}{22x}, E = 1 - \frac{11y}{15x}, F = 1 - \frac{22y}{18x}$$

Hence, E has the maximum rejection rate.