CHAPTER – 9
OMET BASED DI

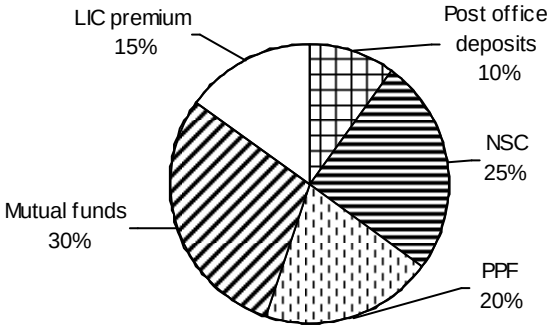
Introduction:

This chapter contains questions similar to the ones asked in other management entrance tests (OMET) like XAT, IIFT, SNAP etc. These questions are generally more calculation intensive than the ones which come in CAT. They generally do not involve any reasoning concepts.

Worked out Examples:

These questions are based on the pie chart and the table given below.

The pie chart shows the breakup of the investment of a person in various schemes in 2000 and the table shows the investments in the same schemes in 2001.



Total investment = ₹50,000

Scheme	Percentage of total investment that is invested in the scheme
Post office deposits	8%
NSC	30%
LIC Premium	15%
PPF	15%
Mutual funds	32%

Total investment = ₹60,000

9.01: In how many of the schemes is his investment in 2000 less than that in 2001?
(A) 1 (B) 2 (C) 3 (D) 4

Sol: The share of LIC premium in both years were the same. His total investment increased from 2000 to 2001.
∴ His LIC premium in 2000 < his LIC premium in 2001.
His investments in post office deposits, mutual funds, PPF and NSC in 2000 were
$\frac{10}{100}(50000), \frac{30}{100}(50000), \frac{20}{100}(50000)$ and $\frac{25}{100}(50000)$ i.e., 5000, 15,000, 10000 and 12500 respectively.
His investments in these schemes in 2001 were
$\frac{8}{100}(60000), \frac{32}{100}(60000), \frac{15}{100}(60000)$ and $\frac{30}{100}(60000)$ i.e. 4800, 19,200, 9000 and 18000.
∴ A total of three schemes satisfied the given conditions. Choice (C)

9.02: In which scheme was his total investment in both years together the maximum?
(A) Post Office deposits (B) NSC
(C) LIC premium (D) Mutual funds

Sol: From the previous solution, his total investment in both years in Post Office deposits, mutual funds, PPF and NSC (in ₹) were 9800, 34,200, 19000 and 30500. His total investment in LIC Premium in both yeas = $\frac{15}{100}$ (50000 + 60000) = ₹16,500.
∴ Maximum total investment was in mutual funds.
Alternately: Percentage of his investments was maximum in mutual funds in each year. ∴ His total investment must be maximum in mutual funds. Choice (D)

9.03: In 2002, his total investment was ₹70,000. His investment breakup was the same as that in 2000. In how many schemes in 2002 was his investment more than ₹12,600?
(A) 0 (B) 1 (C) 2 (D) 3

Sol: 12600 = $\frac{12600}{70000}(100) = 18\%$ of his total investment. His investment was more than 18% of his total investment in three schemes i.e., PPF, NSC and mutual funds. Choice (D)

9.04: In how many schemes in 2001 was his investment more than his average investment in the schemes?
(A) 2 (B) 3 (C) 4 (D) 0

Sol: There were 5 schemes.
∴ Average investment would be $\frac{100}{5} = 20\%$ of total investment. His investments in mutual funds and NSC exceeded this.
∴ Two schemes satisfied the given conditions.
Choice (A)

9.05: If his combined investments in the various schemes in 2000 and 2001 were represented in a pie chart, for how many schemes would the angle be more than 90°?
(A) 0 (B) 1 (C) 4 (D) 2

Sol: 90° = $\frac{90^\circ}{360^\circ}$ (100) = 25%.
As his investments in LIC premium, PPF and Post Office deposits in both years formed less than 25% of his total investment, the angle for these schemes in the pie chart formed will be less than 90°.
∴ For the other two schemes the angle would be more than 90°. Choice (D)

Exercise – 9(a)

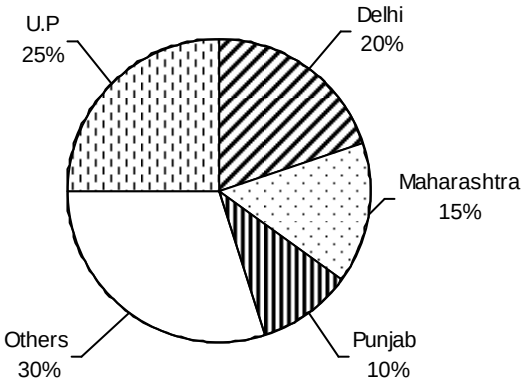
Directions for questions 1 to 5: These questions are based on the information given below.

Number of students studying in different streams in six engineering colleges

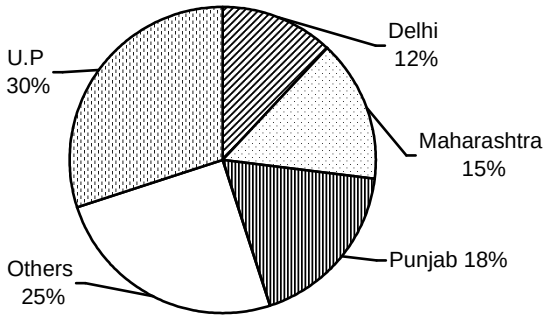
Streams / Colleges	Computer Science	Electrical Engg	Electronics	Civil	Mechanical	Others
A	250	320	160	272	128	150
B	120	210	200	150	180	220
C	220	150	220	160	200	120
D	180	170	140	128	100	172
E	240	220	180	170	190	200
F	160	200	150	190	150	160

These pie charts show the distribution of students of different states in colleges B and E

College B



College E



1. How many students doing Civil engineering in college B, were from U.P?
(A) 37 (B) 75
(C) 80 (D) Cannot be determined

2. What is the difference between the number of students from Delhi in colleges B and E?
(A) 65 (B) 72 (C) 78 (D) 84

3. What is the difference between the number of students pursuing Computer Science and those pursuing Mechanical engineering in the given six colleges?
(A) 222 (B) 225 (C) 182 (D) 220

4. By what percentage is the number of students from Punjab in college B more/less than those from Maharashtra in college E?
(A) 75% (B) 60%
(C) 50% (D) 40%

5. The total number of students in college F forms approximately what percentage of the total number of students in colleges A, B and D put together?
(A) 31% (B) 32.25%
(C) 24% (D) 22%

Directions for questions 6 to 10: These questions are based on the information given below.

The table given below shows the partial details of the percentage wise distribution of all the expenses under different heads by A and B and both A and B together.

Expense type	A	B	A and B together
Rent	30%	22.5%	27%
Food	20%	20%	
Clothing	12%		14%
Medical		13%	16%
Education	11%		
Entertainment			7%

6. What percent of his expenses does B spent on education?
(A) 23.5% (B) 22.5%
(C) 16% (D) 17.5%

7. If the amount spent on rent by A and B together is ₹6,750, then what is the amount spent on medical expenses by A?
(A) ₹1,300 (B) ₹2,700
(C) ₹1,800 (D) ₹1,650

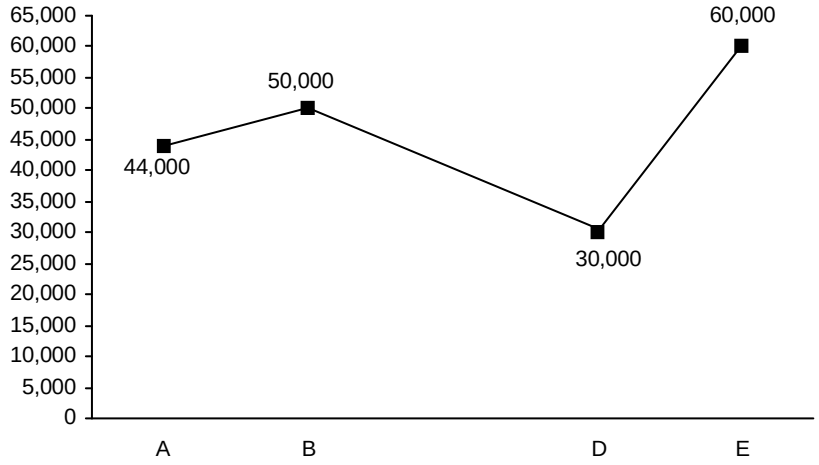
8. What is the ratio of the expenditure of A to that of B under the heads education and entertainment?
(A) 11 : 12 (B) 11 : 10 (C) 4 : 3 (D) 12 : 11

9. Under how many of the given heads is the amount spent by A more than that of B?
(A) 3 (B) 4 (C) 5 (D) 6

10. Which of the following is the least?
(A) Amount spent by A and B together on Entertainment.
(B) Amount spent by B on clothing.
(C) Amount spent by A on education.
(D) Amount spent by B on education.

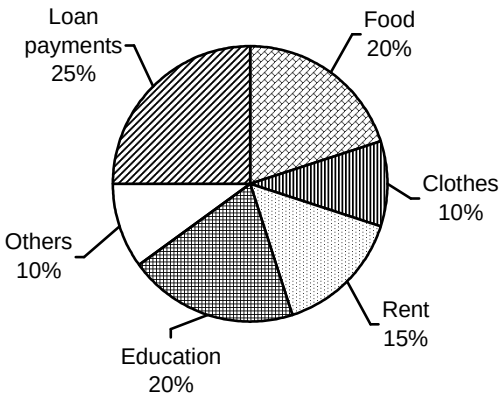
Directions for questions 11 to 15: These questions are based on the information given below.

Monthly expenditure of four persons – A, B, D and E



Note: The average expenditure of the five persons A, B, C, D and E is 46,000.

Breakup of the expenditure of C



11. What is the total expenditure of C on Food and Loan payments?
(A) 16,100 (B) 18400 (C) 20700 (D) 23000

12. If the loan payments of E is 10% more than that of C, then what percentage of the monthly expenditure of E was spent on loan payments?
(A) 19.16% (B) 21.0%
(C) 21.08% (D) 26.83%

13. If A and E spent respectively 17% and 23% of their expenditure on rent, then by what percentage was the expenditure of E on rent more than that of A?
(A) 36% (B) 54.20%
(C) 84.4% (D) 92.2%

14. If the monthly expenditure on education for all five persons is the same, then for how many persons was the expenditure on education in between 16% and 21% of their total monthly expenditure?
(A) 1 (B) 2 (C) 3 (D) 4

15. If the expenditure of E on 'others' was 30% more than that for C, then what percentage of the monthly expenditure of E was spent on 'others'?
(A) 9.96% (B) 15.33%
(C) 22.0% (D) 19.93%

Directions for questions 16 to 20: These questions are based on the following information.

The following table gives the scores of ten students in five subjects – Maths, Physics, Chemistry, English and Biology. It is also known that no student got the same marks in any two subjects.

Student	Physics	Chemistry	English	Biology	Maths	X	Y	Z
Arun	35	40	28		36		English	Physics
Chander	27		41		44		Physics	Biology
Dhanush	32	41		29	36			English
Gaurav			32		29			Chemistry
Hrishitha	28	29			42	Maths		English
Jahna		32	39	37		Maths	Physics	
Michael	42		28		39	Biology	English	
Nayana	43	26	33	32		Physics		English
Pratesh	37	34	35				Biology	English
Shyam	31		30		35			English

X represents the subject in which the student got the highest marks.
Y represents the subject in which the student got the least marks.
Z represents the subject in which the student got the median marks.
It is also known that
(i) The marks of Chander in Chemistry and Biology are equal to the respective marks of Shyam.
(ii) The marks scored by Nayana in Maths is the same as that scored by Arun in Biology.
(iii) Both Gaurav and Pratesh scored their highest marks in the same subject.
(iv) All marks are integers.

16. Which of the following can be the marks scored by Chander in Chemistry?
(A) 27 (B) 28
(C) 30 (D) More than one of the above

17. What are the total marks scored by Shyam in all the five subjects put together?
(A) 153 (B) 157 (C) 160 (D) 162

18. Of all the students, who got the highest marks in English?
(A) Chander (B) Dhanush
(C) Hrishitha (D) Chander or Dhanush

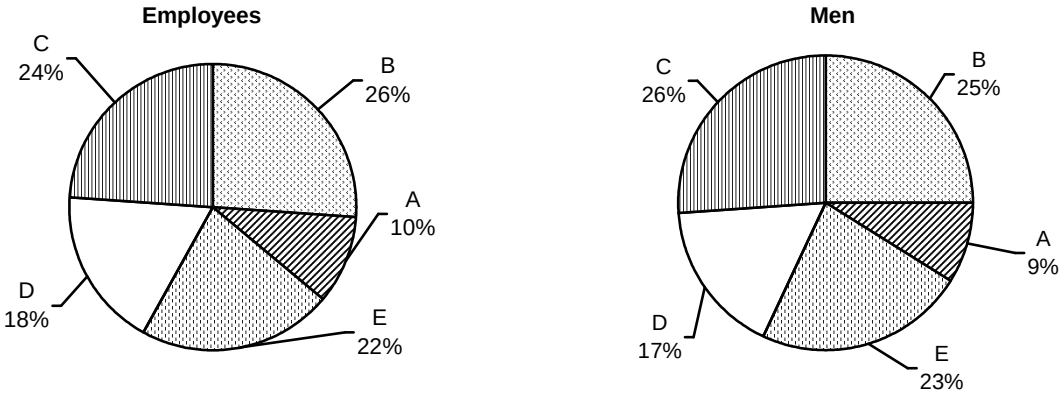
19. How many students obtained their highest marks in Maths?
(A) 2 (B) 3 (C) 4 (D) 5

20. Which of the following statements is/are not true?
(A) Hrishitha scored more marks in Biology than in English.
(B) Pratesh scored his highest marks in Physics.
(C) Dhanush scored his highest marks in Chemistry.
(D) In Maths, Nayana scored the highest marks among all the given students.

Exercise – 9(b)

Directions for questions 1 to 5: These questions are based on the information given below.

The pie charts show the percentage break-up of employees in all the five different departments of a company and the percentage of men in those departments.



1. If the difference between the number of women in departments A and B is 32, then what is the number of women in departments D and E together?
(A) 64 (B) 80
(C) 40 (D) Cannot be determined

2. In which of the following departments is the number of women, the highest?
(A) D (B) B (C) E (D) C

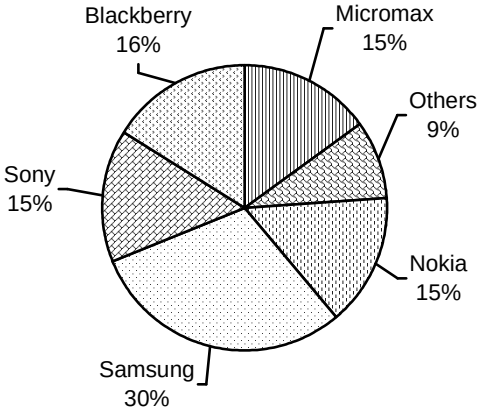
3. What could be the least number of women in all the departments together?
(A) 200 (B) 100
(C) 50 (D) Cannot be determined

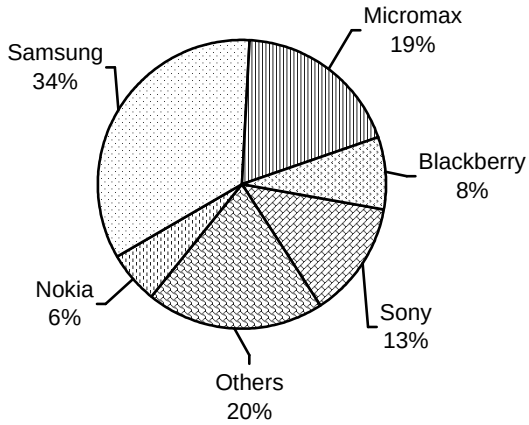
4. If the number of women in departments C and D are equal and the total number of employees in the company is 300, then what is the total number of men in the departments C and D together?
(A) 23 (B) 129 (C) 76 (D) 86

5. In which of the following departments is the percentage of men, the highest?
(A) B (B) C (C) D (E) E

Directions for questions 6 to 10: These questions are based on the information given below.

The pie charts give the percentage distribution of the total smart phone market in India in 2012 and 2013





6. If in 2013, the entire value of Samsung's gain in market share is at the expense of Nokia's loss in market share from 2012, then what is the decline, in the number of smart phones sold by Blackberry from 2012 to 2013?
(A) 50% (B) 66.67%
(C) 43.75% (D) 33.33%

7. If the combined sales of smart phones by Micromax, Nokia and Sony in 2012 is more than the sales of Micromax and 'others' in 2013 by 9,000, then how many companies have shown a decline of more than 3000 in the number of smart phones sold by them in 2013 as compared to 2012?
(A) 3
(B) 2
(C) 1
(D) Cannot be determined

8. If the combined sales of smart phones of Blackberry, Micromax and others in 2012 is same as that of Sony, Blackberry and Micromax in 2013, then what was the percentage growth smart phones sold by Samsung from 2012 to 2013?
(A) 13.33%
(B) 16.66%
(C) 4%
(D) Cannot be determined

9. In 2014, if the number of smart phones sold by Nokia falls by 30% compared to 2013, while the others remain the same, then what is the market share of Blackberry in 2014 assuming no new player enters the market?
(A) 8% (B) 8.15%
(C) 7.85% (D) 8.25%

10. In the above case, by approximately how many percentage points did the combined market share of Samsung and Micromax increase in 2014?
(A) 0 (B) 1 (C) 2 (D) 3

Directions for questions 11 to 15: These questions are based on the information given below.

Hematite, an ore of iron, is extracted from six different places, A, B, C, D, E and F. The table shows the percentage of the quantity extracted at six places and the concentration of pure iron in the ore mixed at those six places.

Place	Quantity extracted	Concentration of pure iron
A	12.5%	24%
B	14%	37.5%
C	20%	30%
D	24%	25%
E	7.5%	20%
F	22%	27.5%

11. From which of the following places is the quantity of pure iron obtained, the largest?
(A) B (B) C (C) D (D) F

12. If the total quantity of ore extracted is 200 million tonnes, then what is the total quantity of pure iron obtained? (in million tonnes)
(A) 56 (B) 55.6
(C) 56.5 (D) 53.6

13. The quantities extracted from which of the two places is to be mixed so that mixture has the highest concentration of pure iron?
(A) C and F (B) B and F
(C) D and F (D) B and C

14. If the quantity of pure iron extracted from C is 48 million tonnes, then from how many of the given places is the total quantity of ore extracted more than 100 million tonnes?
(A) 4 (B) 3 (C) 2 (D) 5

15. The quantity of pure iron extracted from B is approximately what percent of the total quantity of pure iron extracted from all the Ores?
(A) 17% (B) 19% (C) 21% (D) 15%

Directions for questions 16 to 20: These questions are based on the information given below.

A company manufactures only two products A and B. The percentage share of A and B out of the total profit earned by the company is given in the table. The percentage increase in the profit for product A, over the previous year, for the years 2011 to 2016 is also given.

Year	% share of A out of total profit	% share of B out of total profit	% increase in the profit for A
2011	25%	75%	25%
2012	30%	70%	20%
2013	16%	84%	33.33%
2014	12.5%	87.5%	37.5%
2015	16.5%	83.5%	20%
2016	22%	78%	10%

Directions for questions 16 to 19: Type in your answer in the input box provided below the question.

16. In which of the following years, is the increase in the profit for product B the highest when compared to the previous year?
(A) 2012
(B) 2013
(C) 2014
(D) 2015

17. If the profit of product A is 2014 was ₹1.1 crores, then what was the profit for product B in 2013? (in ₹ crores)
(A) 4.2 (B) 4.4
(C) 3.75 (D) 10.5

18. In how many of the given years was the profit for product A more than the average profit of product A over the years 2011 to 2016?
(A) 4 (B) 2 (C) 3 (D) 5

19. What was the percentage increase in the profit for product B from 2012 to 2013?
(A) 200% (B) 100%
(C) 300% (D) 150%

20. If the profit for product B was 60% of the total profit in the year 2010, then what is the ratio of the profit for product B in 2010 and 2011?
(A) 3 : 2 (B) 2 : 3
(C) 5 : 2 (D) 2 : 5

Key

Exercise – 9(a)

1. D	5. A	9. C	13. C	17. A
2. B	6. A	10. C	14. C	18. A
3. A	7. B	11. C	15. A	19. C
4. D	8. D	12. C	16. B	20. D

Exercise – 9(b)

1. B	5. B	9. B	13. D	17. A
2. B	6. C	10. B	14. A	18. C
3. C	7. D	11. D	15. B	19. A
4. D	8. A	12. B	16. C	20. D