

# Non-CAT Reasoning – 1

## LRDI - 15

CEX-D-0287/18

Number of questions : **35**

**Directions for questions 1 to 7:** Answer the questions on the basis of the information given below.

A family of eight members – A, B, C, D, E, F, G and H – consists of three couples. There are three generations in the family. They form four groups of two members each and decide to go on foreign tour in four different countries – Canada, USA, UK and France.

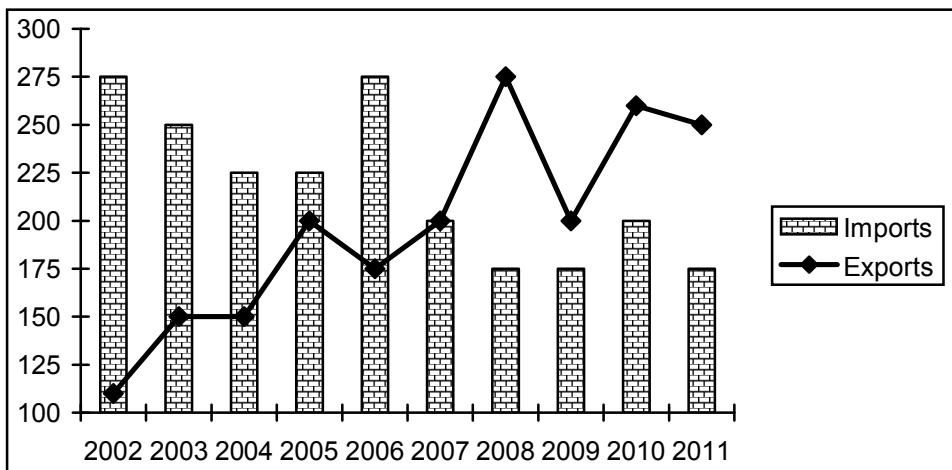
- (i) A is the grandfather of one of the male members who is going to the USA.
- (ii) Both members of a group have decided to visit the same country and each couple forms a group.
- (iii) H, female, is married to E, who is going to the UK.
- (iv) B and D form a group, and agree to go to the USA after showing stiff resistance not to go to the same.
- (v) E's mother-in-law is mother of C, who is the father of B and brother of H.
- (vi) D is unmarried and niece of C.
- (vii) Oldest member of the family is going to Canada.

1. How is F related to C?  
 (1) Wife                      (2) Mother                      (3) Daughter                      (4) Cannot be determined
2. How many male members are there in the family?  
 (1) 3                      (2) 4                      (3) 5                      (4) 2
3. Which of the following groups goes to the UK?  
 (1) C and F                      (2) A and G                      (3) H and E                      (4) B and D
4. How is D related to E?  
 (1) Son                      (2) Daughter                      (3) Niece                      (4) Nephew
5. How many children does A have?  
 (1) 1                      (2) 3                      (3) 2                      (4) 4
6. Which of the following persons goes to France?  
 (1) C                      (2) D                      (3) E                      (4) H
7. What is the relation between B and H in that order?  
 (1) Nephew and Aunt                      (2) Niece and Aunt  
 (3) Brother and Sister                      (4) Grandson and Grandmother

**Directions for questions 8 to 12:** In each of the following questions, find out the wrong number in the given series.

8. 16, 25, 49, 100, 225, 361, 625  
 (1) 100 (2) 225 (3) 361 (4) 625
9. 518, 1030, 1130, 2858, 3054, 7160, 7474  
 (1) 7474 (2) 3054 (3) 1130 (4) 7160
10. 2, 10, 30, 68, 130, 232  
 (1) 68 (2) 2 (3) 232 (4) 130
11. 32, 37, 47, 58, 71, 82  
 (1) 47 (2) 82 (3) 58 (4) 37
12. 0, 4, 18, 48, 100, 160, 294  
 (1) 18 (2) 100 (3) 160 (4) 294

**Directions for questions 13 to 17:** Analyse the following chart showing the exports and imports of Sono Ltd. and answer the questions based on this chart.

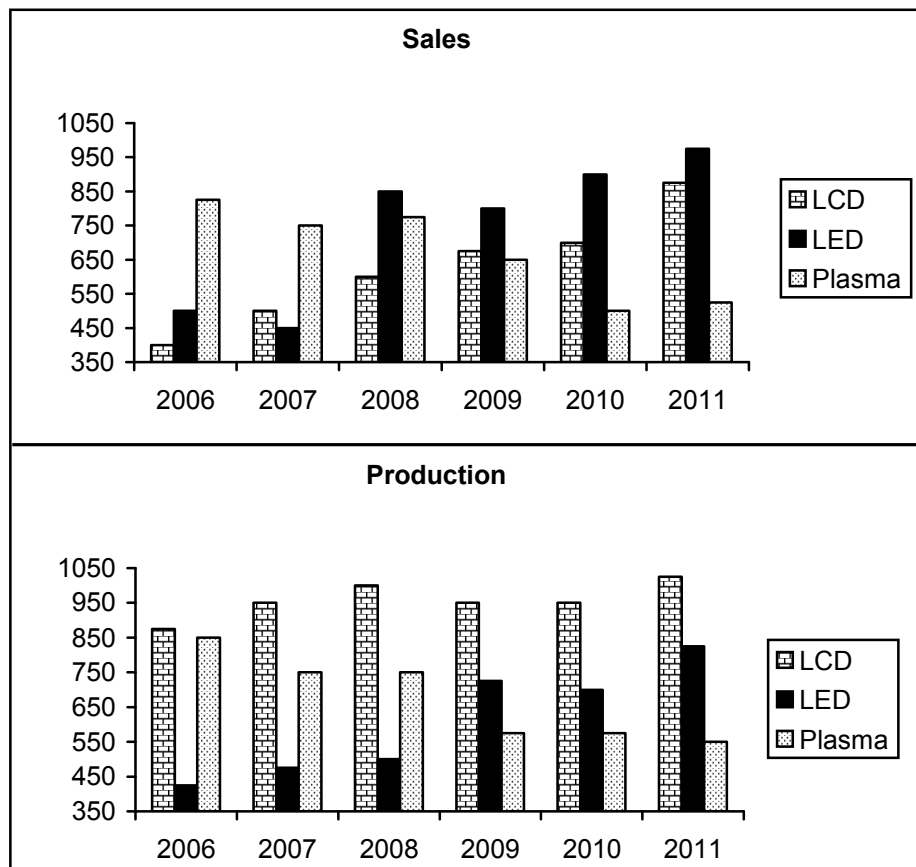


13. Approximately by what percentage are the total Exports greater/smaller than the total imports for the given period?  
 (1) Greater by 9 percent  
 (2) Smaller by 10 percent  
 (3) Smaller by 9 percent  
 (4) Greater by 10 percent
14. If the absolute difference between imports and exports are ranked in ascending order, which year gets 4<sup>th</sup> rank?(If two years have same absolute difference, they will be ranked consecutively based on some other parameters)  
 (1) 2010 (2) 2008 (3) 2009 (4) None of the above

15. In which year was the fifth largest annual percentage increase in exports recorded?  
 (1) 2007 (2) 2005 (3) 2009 (4) None of the above
16. Which year had the second largest annual percentage increase in imports?  
 (1) 2010 (2) 2005 (3) 2006 (4) None of the above
17. What is the approximate percentage point difference in the maximum annual percentage increase in exports and the maximum annual percentage decrease in Imports?  
 (1) 10 (2) 28 (3) 15 (4) 12

**Directions for questions 18 to 20:** Read the information given below, analyse the following chart of Domestic Sales and Production of a country and answer the questions

Following charts present data about the domestic sales and production of LCD, LED and Plasma TVs produced and sold in a country (in number of units). Differences in production and sales will be bridged through external trade (i.e. export and imports) of the TV category during a given year



18. What year has registered the highest external trade in total number of TV units?  
 (1) 2006 (2) 2007 (3) 2008 (4) 2010

19. In which year are the net exports (exports - imports) of all the categories taken together the highest?  
 (1) 2006 (2) 2007 (3) 2009 (4) 2010
20. Examine the following statements  
 I. LCD TVs were always exported  
 II. Net exports of all the categories of TVs for all the years is 1275  
 III. In only one year the production of plasma TVs fell short of sales
- Select the best option  
 (1) Statement I alone is correct  
 (2) Statement I and II are correct  
 (3) Statement I and III are correct  
 (4) All three statements are correct

**Directions for questions 21 to 24:** Answer the questions on the basis of the information given below.

Following table shows the percentage population of six states below poverty line and proportions of male and female.

State	% Population below poverty line	Proportion of male & female	
		Below Poverty line	Above Poverty line
		M : F	M : F
A	16	2 : 3	3 : 4
B	10	4 : 3	5 : 2
C	14	3 : 4	2 : 3
D	20	5 : 2	4 : 3
E	25	4 : 1	2 : 1
F	20	2 : 3	4 : 1

21. If the total population of the state A is 5000 then what is the number of females above poverty line in state A?  
 (1) 2000 (2) 2400 (3) 2600 (4) Data inadequate
22. If the population of C and D together is 2000 what is the total number of females below poverty line in the above states?  
 (1) 5000 (2) 6000 (3) 7200 (4) Cannot be determined
23. If the population of males below poverty line in state C is 6000 and in state E is 10000. Then what is the ratio of the total population of state C and E is \_\_\_\_\_.  
 (1) 2 : 1 (2) 3 : 5 (3) 1 : 5 (4) None of the above

24. If in state F population of females below poverty line is 12000, then what is the population of males below poverty line in that state?  
(1) 8000 (2) 6000 (3) 12000 (4) None of the above

**Directions for questions 25 to 28:** Answer the questions on the basis of the information given below.

Six families – Sharma, Verma, Jain, Bansal, Choudhary and Khan - live in a six floored building. Each family lives in a different floor from 1st to 6th. Each family has either 1, 2 or 3 children.

- (i) Verma and Khan have the same number of children and one of them lives on the 6th floor.
  - (ii) The number of floors between Sharma and Bansal is 3 and both of them have the same number of children.
  - (iii) Verma, lives on the floor immediately above Choudhary but below Jain and has the same number of children as Choudhary.
  - (iv) The number of families having 3 children is 3 and the number of children is different for Sharma and Jain.
25. What is the difference between the number of children of the families living on the 4th and 5th floors?  
(1) 1 (2) 2 (3) 0 (4) Cannot be determined
26. Which family lives on the 3rd floor?  
(1) Verma (2) Sharma (3) Choudhary (4) Bansal
27. Which of the following families has more children compared to the other three.  
(1) Jain (2) Bansal (3) Sharma (4) Verma
28. The total number of children in Sharma's and Bansal's families put together is  
(1) 3 (2) 4 (3) 5 (4) Cannot be determined

**Directions for questions 29 to 32:** Answer the questions on the basis of the information given below.

There are six friends Radhika, Neha, Rupa, Mahima, Sayali and Shobha. Each of them is studying in a different MBA institute viz. A, B, C, D, E and F. Each of the friends has a different specialization in their MBA programme viz. Finance, IT, Operations, HR, Marketing and General Management. Each of the friends has a different qualification viz. BCA, B.Com, CA, BBM, BSc and BTech.

The following information is available about them:

- (i) Mahima joined institute B and did not take up Marketing or IT and is not a B.Tech.
  - (ii) The person who joined institute E opted for HR and is not a CA or a B.Sc.
  - (iii) The person, who is a BCA graduate, joined the institute D and took IT. Whereas, the person, who is B.Com graduate, took up General Management.
  - (iv) Shobha is a CA and has taken Finance.
  - (v) The person, who is a B.Tech graduate has taken Operations Management and did not join institute A or C.
  - (vi) Radhika joined institute F, Rupa is a BCA graduate and Neha took up HR.
29. Mahima's educational qualification and specialization were?  
(1) B.Com and General Management (2) BCA and Finance  
(3) BSc and General Management (4) B.Com and Finance

30. The student with a BTech qualification is studying in which institute?  
(1) F (2) A (3) C (4) D
31. What is the qualification of Sayali?  
(1) BSc (2) BBA (3) B Tech (4) CA
32. If Shobha joined institute C, then the student who joined A opted for?  
(1) Finance (2) Marketing (3) IT (4) HR

**Directions for questions 33 to 35:** Answer the questions on the basis of the information given below.

A cube is placed on the ground against a wall such that no corner of cube touches the corner of the wall. If the cube is painted with two different colours – red and blue, such that 2 opposite faces are painted red and remaining 2 faces are painted blue. The cube is now cut out into 27 identical cubes.

33. What is the number of cubes with exactly two faces painted with two different colours?  
(1) 10 (2) 8 (3) 6 (4) 12
34. What is the sum of cubes having exactly one face painted and exactly three faces painted?  
(1) 11 (2) 12 (3) 13 (4) 14
35. How many cubes have no face painted with red colour?  
(1) 6 (2) 8 (3) 9 (4) None

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**Visit “Test Gym” for taking Topic Tests / Section Tests on a regular basis.**

# LRDI - 15

## Answers and Explanations

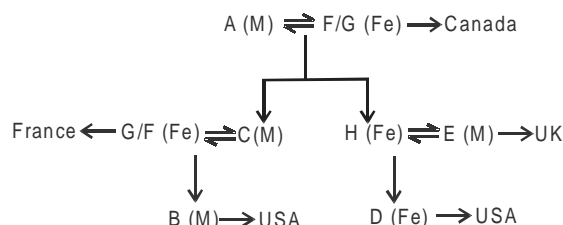
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1	4	2	2	3	3	4	2	5	3	6	1	7	1	8	2	9	4	10	3
11	2	12	3	13	3	14	1	15	1	16	1	17	1	18	3	19	2	20	1
21	2	22	4	23	1	24	1	25	1	26	1	27	4	28	4	29	1	30	1
31	1	32	2	33	2	34	4	35	3										

**For questions 1 to 7:** Using statements (i), (iv) and (vii), we can conclude that A is in oldest generation, goes to Canada and B and D are in youngest generation.

Using statements (iii), (v) and (vi) we can conclude that C, E and H are in second generation.

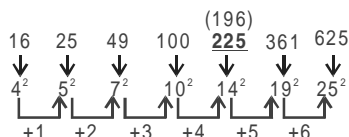
On combining above two conclusions, we get



M = Male and Fe = Female

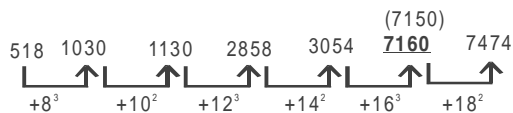
1. 4    2. 2    3. 3    4. 2    5. 3    6. 1    7. 1

8. 2    The series is moving as:



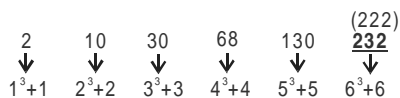
Hence, 225 is the wrong number.

9. 4    The series is moving as:



Hence, 7160 is the wrong number.

10. 3    The series is moving as:



Hence, 232 is the wrong number.

11. 2    The series is moving as:

$$\begin{aligned}
 32 + (3 + 2) &= 37 \\
 37 + (3 + 7) &= 47 \\
 47 + (4 + 7) &= 58 \\
 58 + (5 + 8) &= 71 \\
 71 + (7 + 1) &= 82(79)
 \end{aligned}$$

Hence, 82 is the wrong number.

12. 3    The series is moving as:

$$\begin{aligned}
 0 &\downarrow 1^2 \times 0 \\
 4 &\downarrow 2^2 \times 1 \\
 18 &\downarrow 3^2 \times 2 \\
 48 &\downarrow 4^2 \times 3 \\
 100 &\downarrow 5^2 \times 4 \\
 160 &\downarrow 6^2 \times 5 \\
 294 &\downarrow 7^2 \times 6
 \end{aligned}$$

Hence, 160 is the wrong number.

13. 3    Total exports =  $112.5 + 150 + 150 + 200 + 175 + 200 + 275 + 200 + 262.5 + 250 = 1975$   
 Total imports =  $275 + 250 + 225 + 225 + 275 + 200 + 175 + 175 + 200 + 175 = 2175$   
 The percentage by which exports are smaller than imports

$$= \frac{2175 - 1975}{2175} \times 100 \approx 9\%$$

14. 1    The absolute difference between imports and exports for the given year are :-

2002	162.5
2003	100
2004	75
2005	25
2006	100
2007	0
2008	100
2009	25
2010	62.5
2011	75

Hence, the 4<sup>th</sup> rank while arranged in ascending order is in 2010.

15. 1 The percentage increase in exports for the given years are:-

2003	33.33%
2004	0%
2005	33.33%
2006	-12.5%
2007	14.28%
2008	37.50%
2009	-27.27%
2010	31.25%
2011	-4.76%

Hence, fifth largest increase is in the year 2007.

16. 1 The imports increased only in 2006 and 2010 in the entire period.

The percentage increase in

$$2006 = \frac{275 - 225}{225} \times 100 = 22.22\%$$

The percentage increase in 2010

$$= \frac{200 - 175}{175} \times 100 = 14.28\%$$

Hence, the second largest increase was in the year 2010.

17. 1 The maximum percentage increase in exports is in 2008 i.e. 37.5%.

The maximum percentage decrease in imports is in 2007 i.e.

$$= \frac{275 - 200}{275} \times 100 = 27.27\%$$

Hence, the required answer =  $37.5 - 27.27 \approx 10\%$ .

18. 3 In 2006, the external trade for LCD =  $875 - 400 = 475$ ; for LED =  $500 - 425 = 75$ , Plasma =  $850 - 825 = 25$ .

So total external trade =  $475 + 75 + 25 = 575$  units

In 2007, the external trade for LCD = 450, LED = 25, Plasma = 0

So total external trade =  $450 + 25 = 475$  units

In 2008, the external trade for LCD = 400, LED = 350, Plasma = 25

So total external trade =  $400 + 350 + 25 = 775$  units

In 2010, the external trade for LCD = 250, LED = 200, Plasma = 75

So total external trade =  $250 + 200 + 75 = 525$  units

Hence, the highest external trade in total number of TV units is registered in the year 2008.

19. 2 In 2006, the export for LCD =  $875 - 400 = 475$ ; for LED =  $425 - 500 = -75$ , Plasma =  $850 - 825 = 25$ .

Net exports =  $475 - 75 + 25 = 425$  units

Similarly, in 2007, net exports =  $450 + 20 + 0 = 470$  units

in 2009, net exports =  $275 - 75 - 75 = 125$  units

and in 2010, net exports =  $250 - 200 + 75 = 125$  units

Hence, the highest net exports is in the year 2007.

20. 1 Statement I: For every year, the production of LCD TVs is more than its domestic sales, i.e. net exports (exports - imports) is positive. Hence, statement I is true.

Statement II: The net exports for the years are:

Year	2006	2007	2008	2009	2010	2011
Net exports (in units)	425	470	50	125	125	25

The net exports is equal to 1220 units. Hence, statement II is not true.

Statement III: From the two bar graphs, we can conclude that the years 2008 and 2009 have the production of Plasma TVs fell short of sales. Hence, statement III is false.

21. 2 The population in state A above poverty line

$$= \frac{5000 \times 84}{100} = 4200$$

Hence, the number of females above poverty line in state A

$$= \frac{4200 \times 4}{7} = 2400.$$

22. 4 On the basis of the given information question cannot be answered.

$$23. 1 \text{ The required ratio} = \frac{\frac{6000}{14} \times \frac{7}{3} \times 100}{\frac{10000}{25} \times \frac{5}{4} \times 100} = 2 : 1.$$

$$24. 1 \text{ Required number} = \frac{12000 \times 2}{3} = 8000.$$



**For questions 25 to 28:** The information given is tabulated below.

Floor	Family	Case I	Case II
		Number of Children	Number of Children
6th	Khan	3	3
5th	Sharma/Bansal	1	2
4th	Jain	2	1
3rd	Verma	3	3
2nd	Choudhary	3	3
1st	Bansal/Sharma	1	2

25. 1

26. 1

27. 4

28. 4

**For questions 29 to 32:**

The following can be deduced from the given information:

Persons	Institutes	Qualification	MBA Programme
Radhika	F	B. Tech	Operations
Neha	E	BBM	HR
Rupa	D	BCA	IT
Mahima	B	B.COM	General Management
Sayali	A/C	B.Sc	Marketing
Shobha	C/A	CA	Finance

29. 1    30. 1    31. 1    32. 2

33. 2    Required number of cubes =  $2 \times 4 = 8$  (2 cubes on 4 edges).

34. 4    Number of cubes with exactly 3 faces painted = 2  
 Number of cubes with exactly 1 face painted  
 $= 4 \times 2 + 2 \times 2 = 12$   
 (4 cubes each on faces painted red and 2 cubes each on faces painted blue)  
 $\therefore$  Required number of cubes =  $12 + 2 = 14$ .

35. 3    Required number of cubes = 9  
 (9 cubes from each of the red face have been removed).