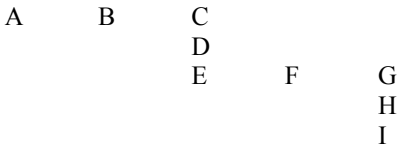
DATA INTERPRETATION QUESTION BANK

EXERCISE 1

Directions for Qs. 1 to 2: Refer to the following data and answer the following questions.



Each of the digits 1, 2, 3, 4, 5, 6, 7, 8 and 9 is represented by a different letter in the figure.
A + B + C, C + D + E, E + F + G and G + H + I is equal to 13.

1. Which of the digits does E represent?
(1) 9 (2) 4 (3) 7 (4) 1

2. Which of the digits does D represent?
(1) 8 (2) 7 (3) 3 (4) 7 or 8

Directions for Qs. 3 to 7: Refer to the following information and answer the following questions.
In a group of 200 people, number of people having at least primary education : number of people having at least middle school education : number of people having at least high school education :: 7 : 3 : . 90 of these play football and 60 play hockey. 5 people in category III (defined as people having high school education) and one fourth each in category I and II (defined as people having primary school education only and people having middle school education but not high school education, respectively) do not play any game. In each of the above category the number of people playing only hockey equal the number of people playing only football. 2 people each in categories I and II and 1 person in category III play both the games. 2 people playing both games are uneducated (category IV). 5 people in category III play only hockey.

Assume middle school education can be had only after completing primary school and high school education can be had only after completing middle school. Also all people in the group fall under the four categories described above.

3. How many people have middle school education?
(1) 16 (2) 32 (3) 48 (4) 64

4. How many high school educated people do not play football?
(1) 6 (2) 8 (3) 10 (4) 12

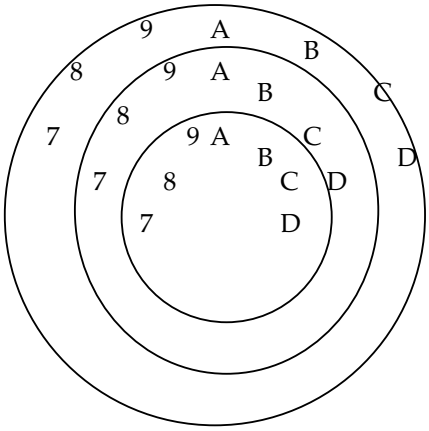
5. How many people having middle school, but not high school, education play only football?
(1) 2 (2) 7 (3) 11 (4) 15

6. How many people who completed primary school could not finish middle school?
(1) 48 (2) 64 (3) 80 (4) 96

7. How many uneducated people play neither hockey nor football?
(1) 15 (2) 20 (3) 23 (4) 28

Direction for Qs. 8 - 10: *Refer to the following data and answer the following questions.*

A simple coding system, using cryptograms, is designed as below. Three concentric wheels each having all the alphabets and the number 0 to 9 are written around the rims of the wheels.



8. Suppose that a cryptogram system is made by rotating the inner wheel 2 alphabets to the right and rotating the outer wheel 2 alphabets to the left. Starting with the inner wheel, what would APPLE be coded as?
(1) BRRC7 (2) 8RNJC (3) 8CCNR (4) 8RNNC

9. How many cryptogram system can be totally made from this device? (Starting inner wheel)
(1) 2315 (2) 1295 (3) 676 (4) Indeterminate

10. Assume that both the inner and outer wheels have been rotated one step, but you don't know whether left or right. What would the rotations be if HOCJ9 has to decode to a proper English word? (Starting inner wheel)
(1) Inner right, Outer right (2) Inner left, Outer left
(3) Inner right, Outer left (4) Inner left, Outer right

Directions for Qs. 11 to 13: Each of these questions contains six statements followed by 4 sets of combinations of 3. Choose the set in which the statements are most logically related.

11. A. All pianos are large B. All flutes are well turned
C. All pianos are loud D. All flutes are loud
E. All pianos are flutes F. All pianos are well tuned
(1) FBE (2) CDF (3) BEF (4) BCF

12. A. All acetones are corrosive substances.
B. All corrosive substances are acidic.
C. All acetones are alkaline.
D. Some acetones are alkaline and corrosive.
E. All acetones are acidic.
F. No oxide corrodes.
(1) ACB (2) BDE (3) BCD (4) BAE

13. A. Some oils are refined
B. Some oils are not brown.
C. Some refined oils are acceptable.
D. Only brown oils are acceptable.
E. Some oils are not acceptable.
F. Only refined oils are brown.
(1) BDE (2) CFE (3) AEB (4) ABE

Directions for Qs. 14-17: Refer to the following information and answer the following questions.
In a village far far away, by name Foolistan, there are four kinds of people: Dumbos, Idiots, Fools and Morons. The village has each of these people in equal numbers, people in the village belong to exactly one of the four kinds. Everyday, people in this village have the habit of making assess of themselves. However, some rules are followed. A person may not make an ass of himself (or herself) at all. Idiots commit twice the number of blunders as do Dumbos, Fools thrice as many as Idiots and Morons four times as many as Fools. However, by a strange fact of the tribe, if even one person of a kind commits zero blunders, no one in the group commits a blunder. Every Dumbo commits the same number of blunders as every other Dumbo. Use these facts to answer the next four questions.

14. On a particular day, 66,000 blunders were committed. Which of the following is not possible? (Assume the total population is 400)
(1) A Fool did not commit any blunder
(2) An Idiot did not commit any blunder
(3) A Moron did not commit any blunder
(4) None of these

15. The population of the village is 400. On a given day every group committed blunders, and Fools as a group commit 1200 blunders. The total number of blunders committed on that day is:
(1) 5000 (2) 6600 (3) 66000 (4) 6000

16. On a particular day, the Morons don't commit any blunders, and the other groups may or may not have committed blunders. Which of the following is the least number of blunders, which certainly satisfy the above the criteria? (Assume total population = 400)
(1) 600 (2) 100 (3) 2700 (4) 900

17. On a day, all four groups commit blunders and a Dumbo commits 3 blunders. If the population is 400, the total number of blunders on the day is:
(1) 99 (2) 9900 (3) 9000 (4) 990

Directions for Qs. 18 to 20: Refer to the following information and answer the following questions.

Shyam Kumar multiplier is a smart mathematician. While negotiating has salary with his prospective employer he worked out and proposed a novel salary plan, which his employer accepted as he was one of the smartest salesman around. According to the plan, his salary would increase every day of his employment such that on any day his income would be two rupees more than the square of the number of the days he has been employed for with the company.
Back home his wife Renu congratulated him on working out an excellent deal and then together they planned their expenses in tune with the new salary plan. As they expected their income to be increasing on a daily basis — they planned their expenses in a way that the expenses of any day would be met by the day's income itself, moreover they planned to make a net saving (which would be the difference of income and the expenses of the day) out of the day's income.

Thus they expected their expenses to be one rupee more than twice the number of days Shyam Kumar would have been employed for on that day, with the company.

18. On which day of his employment did Shyam Kumar Multiplier's savings of a day exceed Rs. 100?
(1) 10^{th} (2) 11^{th} (3) 12^{th} (4) 13^{th}

19. Shyam Kumar Multiplier wanted to get into Limca Book of Records. He eyed the category which listed the person holding the record for the maximum salary increase in a single day. The person currently holding the record is Salim Khan who was given a raise of Rs. 12,000 in a single day. If Shyam Kumar were to beat his record he will have to remain in this job for a minimum of,
(1) 5999 days (2) 6000 days (3) 6001 days (4) 6002 days

20. Shyam and Renu planned to put each day's savings into their savings bank account. They also decided that they would regularly purchase Fixed Deposits in multiples of Rs. 300 from their savings in the account. They would purchase their first Fixed Deposit on
(1) 11^{th} day (2) 12^{th} day (3) 13^{th} day (4) 14^{th} day

Directions for Qs. 21 – 25: Refer to the following information and answer following questions.
Alord received a large order for stitching school uniforms from Mayflower school and Little Flower school. He has two cutters who will cut the fabric, five tailors who will do the stitching, and two assistants to stitch the buttons and button holes. Each of these nine persons will work for exactly 10 hours a day. Each of the May-flower uniforms requires 20 min. for cutting the fabric, one hour for stitching, and 15 min. for stitching buttons and button holes, whereas the Little Flower uniform requires 30 min., 1 hour, and 30 min. respectively for these activities.

21. What is the maximum number of little Flower uniforms that A lord can complete in a day?
(1) 50 (2) 20 (3) 40 (4) 30

22. On particular day, Alord decided to complete 20 Little Flower uniforms. How many Mayflower uniforms can he complete on that day?
(1) 30 (2) 40 (3) 20 (4) 0

23. If Alord decides to complete 30 Little Flower uniforms only and no other on a particular day, how many total man-hours will be idle?
(1) 20 (2) 30 (3) 5 (4) 25

24. If he hires one more assistant, what is the maximum number of Mayflower uniforms that he can complete in a day?
(1) 40 (2) 50 (3) 60 (4) 30

25. A lord has the option to hire one more employee of any category. Which category should he hire to get maximum increase in production capacity, assuming that he needs to stitch only Mayflower uniforms on that day?
(1) Tailor (2) Cutter (3) Assistant (4) Cannot be determined

Directions for questions 26 to 35: Each questions is followed by two statements, A and B. Answer each question using the following instructions.

Choose 1: if the question can be answered by using one of the statements alone, but cannot be answered by using the other statement alone.
Choose 2: if the question can be answered by using either statement alone.
Choose 3: if the questions can be answered by using both the statements together, but cannot be answered by using either statement alone.
Choose 4: if the question cannot be answered even by using both the statements together.

26. What is the value of the two digit positive integer N?
A. Four times N is 48 less than the square of the smallest two digit number.
B. N is a prime number whose square lies between 150 and 250.

27. ABCD is a cyclic quadrilateral. Is ABCD a rectangle?

A. AB $\| \|$ CD.

B. $\angle A + \angle C = 180^0$

28. What is the value of the positive integer n?

A. The product of the numbers a, and b, which are respectively three less and two less than n, is 0.

B. $\frac{n!}{2} = (n-2)!$

29. What is the perimeter of the triangle ABC? One of its side is $10\sqrt{3}$ units.

A. ABC is the hypotenuse of the right angle triangle ABC.

B. The sum of the areas of the semicircles described on the three sides of the triangle ABC is $100\ \pi$ sq. units.

30. The cost price of an article is 100. Find the profit made by selling it.

A. Ten percent discount was given on the list price and the profit percentage made is 25 percentage points more than the discount percent.

B. List price is Rs.180 and profit percent is $1/5^{th}$ of the mark up percentage.

31. The length of trains of traveling at 90km/hr crosses train B in 32 seconds.

A. Train A traveling at 90 km/hr crosses train B in 32 seconds.

B. Train A and B are not traveling in the opposite directions.

32. Find the value of the real number N, where N > 0?

A. N is a two digits prime number less than 15, whose square and cube have the digit 1 occurring more than once.

B. N is a composite number less than 10, whose square and cube have their sum of digits equal to the number itself or a multiple of it.

33. Is $\frac{10^n + 5}{3}$ an integer?

A. n is an integers.

B. n is and natural integer.

34. Will A and B take more than 14½ days to complete the work working together?

A. If they work on alternate days with A starting the work, they take 28½ days to complete the work.

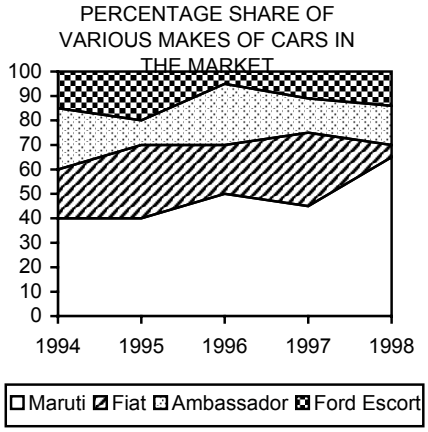
B. If they work on alternate days with slower person among A and B starting the work, they take 29 days to complete the work.

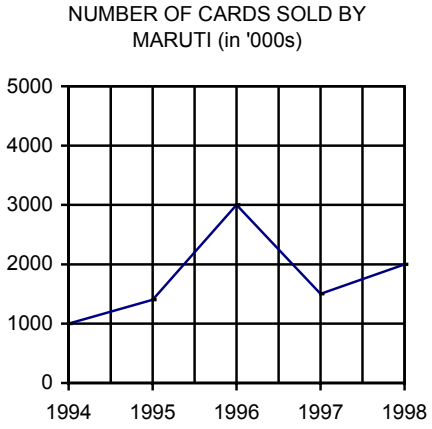
35. The length of train A and B are 4000m and 350 respectively. What is the speed of the train B?

A. Train B crosses train A which is traveling at 60km/hr in 22 seconds.

B. The speed of trains B is more than the speed of trains A.

Directions questions for 36 to 40: Study the following graph and answer the questions that follow.





36. What is the number of Fiat cars sold in 1994 (in '000s)?
(1) 750 (2) 500 (3) 1500 (4) can't say

37. Which of the following statements is false?
(1) The number of Fiat cars sold registered a decrease from 1995 to 1996.
(2) The number if Fiat cars sold registered an increase from 1996 to 1997.
(3) The number of Ambassador cars sold registered an increase from 1997 to 1998.
(4) None of these.

38. Which of the following statements is/are true?
(A) The percentage decrease in the number of cars sold by Fiat from 1994 to1998 is 75%
(B) The number of cars sold by Ford Escort in 1997 and 1998 is same.
(C) The percentage increase in the number in the number of cars produced by Maruti in 1996, when compared to that of 1995 in more than 100%
(1) A and C (2) B and C (3) A and B (4) None of these

39. In which of the following years, did the umber of ford Escorts sold register a decrease compared to that in the previous year?
(1) 1998 (2) 1996 (3) 1997 (4) Both1996 and 1998

40. The total number of cars sold is maximum in the year
(1) 1995 (2) 1996 (3) 1997 (4) 1998

Directions questions for 41 to 45: These questions are based on the following data.
50,000 Units of brand X are being sold in the market at a price of Rs.1o/- unit. A competitive brand, Y, enter the market. The course of actions available for the company marketing brand X are

(1) Cut the price of X by 50 %, which would result in an increase in the number of units sold of X by 30 % with a probability of 0.5 and 20% with a probability of 0.5

((2) Advertise, which would cost Rs.2,00,00, but would result in an increase in the number of units sold of X by 50% with a probability of 0.1, by 20% with a probability of 0.5 and 10% with a probability of 0.4.

(3) Remain silent, in which case, the probability of losing the market by 40 % is 0.5 and the probability of retaining its market is 0.5

41. Which is the best course of action to follow?
(1) cut down the prices (2) Advertising

(3) remain silent (4) Cannot be determined

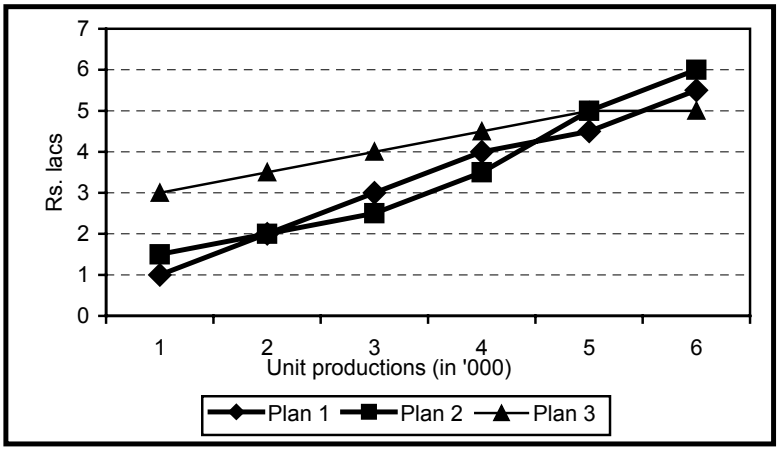
42. In which of the cases, does the market of X (number of units sold) increase the most?
(1) cut down the prices (2) Advertising
(3) Remaining silent (4) None of these

43. What is the net loss if course 1 is followed ?
(Net Loss = Money realised originally – Money realized now)
(1) Rs.87,500 (2) Rs.1,00,000 (3) Rs.1,87,500 (4) Rs.2,00,000

44. What is the revenue realised (net of advertising expenses) if Course 2 is followed?
(1) Rs.4,00,000 (2) Rs.3,95,000 (3) Rs.3,12,500 (4) Rs.3,00,000

45. How much more/less in the net revenue realized by following course 2 than that realised by following course 2 than that realised by following course 3?
(1) Rs.5,000 less (2) Rs.5,000 more (3) Rs.50,000 (4) Rs.50,000 more

DIRECTIONS for questions 46 to 50: Refer to the data below and answer the questions that follow.
ABC limited produces a product P for which demand is unlimited and they can sell all they produce. They want to control costs and have three production plans from which to choose. The fixed cost incurred by the company is Rs.1lac, Rs.1.5lacs and Rs.1lac from plan I, II and III respectively. Given below is the graph of marginal cost of production virus number of units produced. It is also give that it can produce P in a batch of 1000 only.



46. If production = 2000, then which of the three is best plan?
(1) Plan 1 (2) Plan 2 (3) Plan 3 (4) Plan 1 or Plan 2

47. If production = 3000 then which of the three is the best plan?
(1) Plan 1 (2) Plan 2 (3) Plan 3 (4) Plan 1 or Plan 2

48. If production < 3000 then which of the three is the best plan?
(1) Plan 1 (2) Plan 2 (3) Plan 3 (4) Plan 1 or Plan 2

49. If production > 4000 then which of the three is the best plan?
(1) Plan 1 (2) Plan 2 (3) Plan 3 (4) Plan 1 or Plan 2

50. For some reasons, the company cannot choose plan1, then 2 is best plan if;
(1) Production≤4000 (2) Production<4000
(3) Production=3000 or Production=4000 (4) Non of these

EXERCISE 2

Direction for Qs. 1to5 : Refer to the following information and the answer the following questions.
People Power Corporation presently employs three Managers (A, B and C) and five recruitment agents (D, E, F, G and H). The company is planning to open a new office in San Jose to manage placement of software professionals in the US. It is planning to relocate two of the three managers and three of the five recruitment agents to the office at San Jose. As it is an organization which is highly people oriented the management wants to ensure that the individuals who do not function well together should not be made as a part of the team going to the US. The following information was available to the HR department of People Power Corporation.

- ✓ Managers A and C are at each others throat and therefore cannot be sent as a team to the new office.
- ✓ C and E are excellent performers in their own right. However, they do not function together as a team. They should be separated.
- ✓ D and G have had a major misunderstanding during the last office picnic. After the picnic these two have not been in speaking terms and should therefore not be sent as a team.
- ✓ D and F are competing for a promotion which is due in another 3 months. They should not be a team.

1. If D goes to the new office which of the following is (are) true?
I. C cannot go II. A cannot go III. H must also go
(1) I only (2) II and III only (3) I and III only (4) I, II and III

2. If A is to be moved as one of the Managers, which of the following cannot be a possible working unit?
(1) ABDEH (2) ABFGH (3) ABEGH (4) ABDGH

3. If C and F are moved to the new office, how many combinations are possible?
(1) 4 (2) 1 (3) 3 (4) 5

4. Given the group dynamics of the Managers and the recruitment agents, which of the following is sure to find a berth in the San Jose office?
(1) B (2) H (3) G (4) E

5. If C is sent to the San Jose office which member of the staff cannot go with C?
(1) B (2) D (3) G (4) F

Directions for Qs. 6 - 10: Refer to the following data and answer the following questions.
It is a game based on the position you take in a clock. You are at the 1 O'clock position. You can move one step clockwise, 1 step anti clockwise or to a place that is diametrically opposite yours. For example, from 1 O'clock if you move clockwise you will be at 2 O'clock. As you start the game, you are at 1 O'clock position and your score is 1. If you move a step clockwise, add the value of the time in that position to your score to give you the new score. If you move a step anticlockwise, add the value of the time in that position and subtract 2 from your score. If you move a step diametrically opposite, add the value of the time in that position to your score and subtract 4 from your score to get the new score. You cannot get back to a position that you have already visited.

6. What will be your minimum score after the third move?
(1) 10 (2) 7 (3) 11 (4) None of these

7. What will be your maximum score after the second move?
(1) 16 (2) 18 (3) 20 (4) 24

8. If you had moved a step anticlockwise in the first move, you could not have reached one of the following positions in the third move.
(1) 10 O'clock (2) 5 O'clock (3) 7 O'clock (4) 6 O'clock

9. What is the shortest number of moves that you require to reach the 5 O'clock position When you start from 1 O'clock position?
(1) 4 (2) 3 (3) 5 (4) 2

10. A man said to a lady, "Your mother's husband's sister is my aunt." How is the lady related to the man?
(1) Mother (2) Aunt (3) Sister (4) Grandmother

11. If P + Q means P is the brother of Q; P – Q means P is the mother of Q and P * Q means P is the sister of Q. Which of the following means M is the maternal uncle of R, if you can assume a third person K to be involved in establishing the relationship?
(1) M-K*P (2) M+K*R (3) M+K-R (4) M+K+R

Directions for Qs. 12 - 13: Refer to the following information and answer the following questions.
A, B, C and D are four ladies who are friends of Elizabeth. On one Saturday the four of them visited Elizabeth at her weekend getaway.

I. The time of each visit was as follows: A at 8 O'clock, B at 9 O'clock, C at 10 O'clock and D at 11 O clock.
II. At least one woman visited Elizabeth between A and B.
III. At least one of C or D visited Elizabeth before A.
IV. C did not visit Elizabeth between B and D.

12. Who visited Elizabeth first?
(1) A (2) B (3) C (4) D

13. Who visited Elizabeth last?
(1) A (2) B (3) C (4) Insufficient data

Directions for Qs. 14 - 18 : Refer to the following information and answer the following questions.
Each of the questions is followed by two statements. You have to decide whether the information provided in the statements is sufficient for answering the question.

Mark (1), If the question can be answered by using one of the statements alone, but cannot be answered by using the other statement alone.
Mark (2), If the question can be answered by using either statement alone.
Mark (3), If the question can be answered by using both the statements together, but cannot be answered using either statement alone.
Mark (4), If the question cannot be answered even by using both the statements together.

14. Is one of X or Y a fraction?
A. $X^2Y^3 = 8$ B. X is rational

15. A is a prime number. Is B a prime number?
A. B = 9A + 7 B. AB is even

16. Is 3x + 10y even?
A. x is even B. y is odd

17. Which amongst the three x, y and z (all real) is the greatest?
A. x : y : z : : 6 : 8 : 11 B. $xyz - y^2$ is positive

18. What is the speed at which L is driving?
A. The ratio of the speeds of L and M is 3 : 5
B. L and M start from city X to Y simultaneously and as soon M reaches city Y he returns and meets L on the way exactly 2 horus from the time they both left city X.

Directions for Qs. 19 – 23: Refer to the following information and answer the following questions.

Each question contains two statements in the question followed by four statements. Choose the alternative from the four statements which is logically related and follows the statements in the question.

19. No M are P. Some M are S
(1) Some S are P 2. Some P are S (3) No S are M (4) Some S are not P

20. All M are P. All S are M
(1) All P are S (2) All M are S (3) All S are P (4) None of the above

21. Some M are not P. All M are S
(1) No S are P (2) All S are P (3) Some S are not P (4) No S are P

22. No P are M. Some S are not M.
(1) No S are P (2) All P are S (3) Some M could be S (4) All S are P

23. All Critical Thinking classes are full. John found a class that wasn't full
(1) John might have found a Critical Thinking class
(2) The class John found was not a Critical Thinking class
(3) All Critical Thinking classes were not found
(4) John was a dumb guy

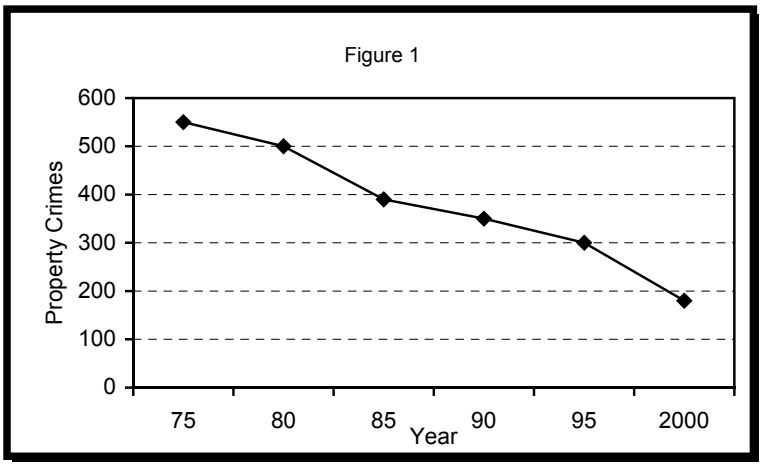
Directions for Qs.24– 25: Refer to the following information and answer following questions.

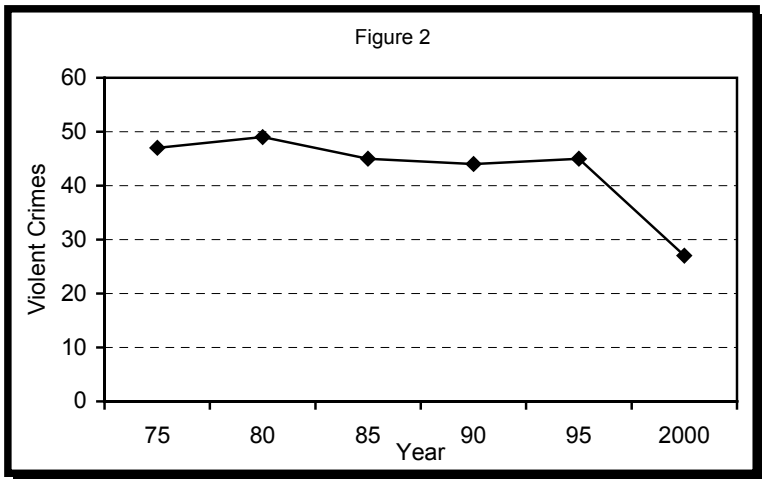
Speaker: The great majority of people in this city have access to the best medical care available any where in the world.
Opposition: There are thousand of poor in this city who cannot afford to pay to see a doctor.

24. Which of the following is true of the opposition's comment?
(1) It constitutes a hasty generalization on few examples
(2) It cities statistical evidence which tends to corroborate the views of the speaker
(3) It tries to compare two unrelated data and draws a contrarian conclusion
(4) It is not necessarily inconsistent with the speaker's remarks.

25. A possible objection that opposition could have fielded to the spearker's comments would be to point to the existence of
(1) a city which has more doctors than this city
(2) a city in which people are given better medical care than this city
(3) a city which has a higher per capita hospital bed than this city
(4) the amount spent on medical insurance for people of this city

DIRECTIONS for questions 26 to 30: Refer to the data below and answer the questions that follow.





The two graph above gives me crime statistics for the USA. Fig 1 give the variation of the number of property crimes per 1000 households with time. Property crimes consist of motor vehicle theft, theft and burglary. Fig 2 gives the number of violent crimes per 1000 population with time. Violent following can be divisible into three categories – aggravated assault, simple assault and robbery. The following facts are also given and may be used in answering the questions that follow.

1. The population of the USA between 1975 and 2050 is by the equation P= 2.3 (T-1950) + 157, where P is the population in millions in the year T.
2. The number of persons per household can assumed to remain constant for the period 1975 to 2050.

26. Let x1 and x2 be the number of property crimes in 1975 and in 2000 expressed as a percentage of the population, respectively. What is the ratio of x1 to x2?
(1) 3 : 1 (2) 27 : 10 (3) 1 : 3 (4) 18 : 5

27. Assume that the total number of property crimes per year follow the following trend after 2000. The total number of property crimes per year at the end of every 25 year is 0.71 times the number at the beginning. What is the number of property crimes per 1000 households in the year 2050?
(1) 63 (2) 90 (3) 129 (4) 180

28. In 2000, the number of aggravated assaults/1000 population was greater the number of robberies/1000 population by 1.8 and the number of simple assaults was three time the number of aggravated assaults. What was the total number of robberies in 2000?
(1) 1.1×10^6 (2) 1.1×10^3 (3) 3.9 (4) 3.9×10^3

29. Let y1 and y2 be the total number of violent crimes per year in 1975 and 2000, respectively. What is y2 – y1
(1) 22 (2)-22 (3) 4.2 (4) none of these

30. The total number of property rimes in the year 200 was 1.45 times the total number of violent crimes in the year 1975. what is the average number of person per household?
(1) 2.1 (2) 3.2 (3) 4.2 (4) 4.9

DIRECTIONS for questions 31 to 35: Refer to the data below and answer the questions that follow.

ABC is a firm which deals with furniture. Manufacturing of table requires three levels of assembly. The finished table is at first level. The leg assembly and table top are second level. The pieces that go into the leg assembly are at the third level which consist of shortrails, longrails and legs. One unit of table requires one unit of tabletop and one unit of leg assembly. One unit of leg assembly requires 2 units of shortrails, 2 units of longrails and 4 units. Orders are placed just in time to minimize storage.

The lead time for activities are (Lead time is waiting time required to complete one activity)

Parts	Weeks
Assamble table	1
Finished leg assembly	1
Purchase legs	1
Purchase shortrails	1
Purchase longrails	1
Purchase table top	2

The availability of part at present time

Parts	Units
Table	50
Leg assembly	100
Legs	150
Shortrails	50
Longrails	0
Table top	50

Demand of finished Tables

Details	Week 4	Week5	Week6
Demands (units)	200	150	100

31. For meeting the demand of 200 units of finished table of week 4, when would the first order of tabletops be placed?
(1) Week 1 (2) Week 3 (3) Week 4 (4) Week 5

32. What is the net requirement of legs for meeting the demand of week 4 finished table?
(1) 200 (2) 50 (3) 400 (4) 800

33. When and how many units of shortrail would be placed for meeting the demand of finished table of week 6?
(1) 100 units in week 1 (2) 200 units in week 3
(3) 300 units in week 6 (4) Data insufficient

34. If in-hand units of legs are increased from 150 to 300, then what would be the net requirements of legs for meeting the demand of finished table of week 5?
(1) 1800, 900 (2) 2200, 1100 (3) 1600, 800 (4) 800, 400

35. The supplier of longrails has shiftedhis manufacturing unit to its new location. Because of this the delivery time of long rail has been increased by 1 week. When would the order of longrails be placed to meet the week 5 demand of finished table?
(1) Week 1 (2) Week 4 (3) Week 5 (4) None of above

DIRECTIONS for questions 36 to 40: Each of the following questions is by two statements.
Mark [1], if the question can be answered by using any of the statements alone but not by using the other statement alone.
Mark [2], if the question can be answered only by using either of the statements alone.
Mark [3], if the question can be answered only by using both the statements together.
Mark [4], if the question cannot be answered.

36. a, b, c, d are positive integer. Which is the second smallest of these?
I. $\frac{a}{3} < \frac{b}{4}, \frac{b}{2} < \frac{c}{3}$ II. $\frac{a}{3} < \frac{d}{6}, \frac{c}{4} < \frac{d}{3}$

37. LCM of two numbers A & a B is & is and HCF is 12. What is the number B?
I. A is not a factor B.
II. B is greater than A.

38. What is the age of Ram?
I. Sum of the ages of Ram and Shyam was 60 five years back.
II. Sum of the ages of Ram and Shyam would be 100 fifteen years from now.

39. What is the ratio of volume of sphere to of the cone?
I. Radius of the cone is twice that of the sphere.
II. Height of the cone is equal to the radius of the sphere.

40. Who is/are the tallest among A, B, C, D and E?
I. D is the tallest among C, D and E.
II. B, who is not shorter than D, is not the shorter of A and B.

Questions 41 to 43: are based on the following City College is selecting a four-person debate team. There are seven candidates of equal ability. X, Y and Z, who belong to Group A; and L, M, N and P who belong to Group B. The team must have two members from each group. Also, the members must be able to work well with the all the members of the other team. Debaters Y & L, Z & N, L & M are incompatible pairs.

41. If debater Y is rejected and M is selected, the team will consist of
(1) L, M, X and Z (2) M, N, X and Z (3) M, N, P and X (4) M, P, X and Z.

42. If debater L is on the team, which other debaters must be on the team as well?
(1) M, X and Z (2) N, X and Z (3) P, N and Z (4) P, X and Z

43. If both Y and Z are selected, which of the other debaters are thereby assured of a place on the team?
(1) Both L and M (2) Both M and P (3) Only N (4) Both N and P

Directions: Q 44-50: The following table gives the number of AIDS cases over 2 years of selected countries.

Country	1996 (In '000 cases)	1996 (Rate)	1997 (In '000 cases)
Argentina	51	0.1	43
Australia	342	2.1	143
Austria	85	1.1	37
Bahamas	78	33.9	25
Belgium	85	0.8	25
Brazil	1361	0.9	206
Burundi	652	13.0	235
Canada	513	1.9	232
Chile	34	0.2	13
Denmark	97	1.8	25
Dominican Republic	256	3.9	152
Ethiopia	19	0.0	18
France	1852	3.3	555
French Guyana	45	56.2	10
Greece	53	0.5	18
Haiti	332	5.0	231
Honduras	58	1.2	38
Israel	13	0.3	11
Italy	888	1.5	231
Jamaica	37	1.4	13
Japan	34	0.0	7
Mexico	499	0.6	14
Netherlands	215	1.4	75
New Zealand	30	0.9	21
Norway	35	0.8	11
Portugal	44	0.4	35
South Africa	46	0.1	19
Sweden	73	0.8	34
Switzerland	163	2.4	84
United Kingdom	653	1.1	239
United States	21846	8.9	6442
Wet Germany	873	1.4	222
Yugoslavia	18	0.0	12
Zambia	286	4.0	218

All countries that have reported more than five hundred AIDS cases to the WHO in 1997 are listed here. The left column gives the total number of cases reported by each country for 1996, the middle column gives the 1996 rate (AIDS cases per 10000 population) and the last column shows the number of cases reported in early 1997.
Most 1997 reports were for only the first quarter or a third of the year. Owing to reporting delays of six months or more, cases reported in 1997 actually were diagnosed in 1996.

44. Which country has reported the maximum number of AIDS cases to WHO during 1996?
(1) Brazil (2) United States (3) France (4) Italy

55. How many countries have reported 25000 AIDS cased in the early 1997?
(1) Two (2) One (3) Three (4) None.

46. The ratio of AIDS cases reported in early 1997 is 2 : 5 for
(1) South Africa & Portugal (2) Israel & Denmark
(3) Yugoslavia & Netherlands (4) West Germany & France

47. The number of countries for which 1996 (rate) [per 100,000] is more than five is
(1) five (2) four (3) three (4) six

48. What is the population of Zambia on the basis of the reported cases of AIDS in 1996 (in thousands)?
(1) 650000 (2) 700000 (3) 72000 (4) 715000

49. Which of the following are true from the table?
I. The reported AIDS cases of Ethiopia, Japan and Yugoslavia as compared to the population is negligible.
II. The 1996 (rate) is highest for French Guyana though the reported cases are only 45000.
III. The population of Haiti is 66400000
IV. France reported more than 2000 cases of AIDS in 1996.
(1) I & II (2) II & III (3) I, II & III (4) I, II & VI

50. The countries which have reported less than 2000 cases both in 1996 and early 1997 are
(1) Japan, Ethiopia and Israel (2) Jamaica, Yugoslavia & Japan
(3) Ethiopia, Chile & French Guyana (4) Ethiopia, Israel and Yugoslavia.

EXERCISE 3

DIRECTIONS for questions 1 to 10: Each question is followed by two statements.
You have to decide whether the information provided in the statements is sufficient for answering the question.

Mark 1 if the question can be answered by using one of the statements alone, but cannot be answered by using the other statement alone.

Mark 2 if the question can be answered by using either statement alone.

Mark 3 if the question can be answered by using both statements together, but cannot be answered by using either statement alone.

Mark 4 if the question cannot be answered even by using both the statements together.

1. One side of the triangle ABC is 5cm long. Is the largest angle in triangle ABC greater than 90°?
I. Triangle ABC is a right angled triangle 4,
II. Two sides of the triangle ABC are 3 cm and 4 cm long.

2. What is the number of institutes in Hyderabad that have an annual income of over Rs.5, 00, 000 and own a Laser Printer?
I. 30% of the institutes in Hyderabad have an annual income of over Rs.5, 00, 000
II. 25% of the institutes in Hyderabad which have an annual income of over Rs.5,00,000 own a Laser Printer.

3. Is a >b?
I. $8 - (a - b)^3$ is a positive number.
II. $4 - (a-b)^2$ is a negative number.

4. There are two identical cubical boxes A and B which contain 8 and 27 balls respectively. The balls are made of the same material. Which box is heavier?
I. The balls are of different sizes.
II. The boxes are not made of same material.

5. Is a/b defined where a and b are integers?
I. a is neither a positive number nor a negative number.
II. b is neither a positive number nor a negative number.

6. What time does the clock show?
I. The angle between the hours hand and the minutes hand is 80°.
II. The time is between 3 O'clock and 4 O'clock.

7. A ladder is leaning against a wall at a height of 9m at 8:00 a.m. and it started slipping. What is the distance between the point at which the ladder is contacting the wall and point at which the ladder is contacting the floor at 8:30 a.m.?
I. The length of the ladder is 15 m.
II. The rate at which the top of the ladder is slipping is 2 cm per minute.

8. What is the speed of a particle at position x?
I. The speed of the particle was 5 cm/sec at point X_0 which is 5 cm away from x.
II. The speed of the particle is increasing at the rate of 0.5 cm/sec every 1 cm it travels.

9. What is the ratio of two numbers p and q?
I. p is 50% greater than q.
II. p and q are respectively 87.5% and 25% greater than a third number r.

10. If each pencil costs Rs.2 and each pen costs Rs.3, then how many pens did I buy given that I bought at least one pencil and at least one pen?
I. I bought one pencil.
II. I spent a total amount of Rs.8 buying pens and pencils.

DIRECTIONS for questions 11 to 14: These questions are based on the following information regarding the price changes that a certain pharmaceutical company is considering for its products.

Product	Existing Price (Rs.)	Revised Price (Rs.)
Antacid	1.50	2.50
Anti Hypertensive	10.00	12.50
Expectorant	18.00/bottle	24.00/bottle
Anti Asthmatic	20.00	26.00
Anti Pyretic	5.00	8.00

The prices for all the products except Expectorant are the prices of 10 tablets.

11. If a family has a hypertensive and an asthmatic patient, where the person with hypertension has to consume three tablets of Anti Hypertensive per day and the asthmatic patient has to take two tablets of Anti Asthmatic every alternate day, what will be the increase in expenditure on two patients for 30 days?
(l) Rs.40.50 (2) Rs.42.75 (3) Rs.46.50 (4) Rs.38.50

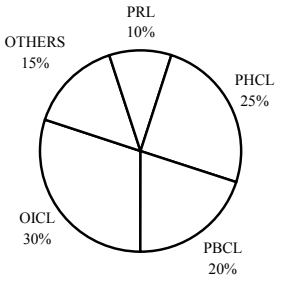
12. What is the percentage increase in the expenditure of a person for one year if he consumes 32 tablets of Antacid in one week?
(1) 7½% (2) 6 ½ % (3) $6^2/_3$% (4) None of these

13. A person is prescribed to take two spoons of Expectorant thrice everyday for a period of, 20 weeks. Assuming that each bottle of Expectorant contains 90 spoons. Find the expenditure according to the existing prices.
(1) Rs.200 (2) Rs.180 (3) Rs.168 (4) Rs.240

14. A person is prescribed a combination of antipyretic and anti-asthmatic such that he has to take one of these before breakfast, the other after lunch and the one he had at breakfast at dinner also; if he consumed an antipyretic at the end of the dinner after the 7^{th} day of the course, he started the course with
(1) Anti-asthmatic (2) Antipyretic
(3) Not possible to determine (4) None of the above

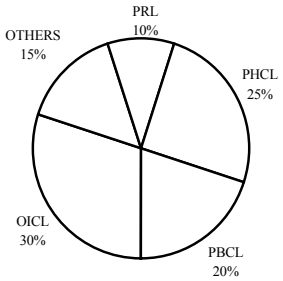
DIRECTIONS for questions 15 to 19: These questions are based on the pie diagrams given below.
Shefali, a first year student of management from a well known institute of management in western India, was doing her internship with a leading public sector bank in India. Her project involved analyzing the market shares of various Indian companies that manufacture and sell fuels and lubes. Halfway through her project she managed to collect the following information from the sales figures of various companies.

Percentage shares of various companies in total sales of fuel (by value)



Total Sales of fuels for the year 2000-2001 = Rs. 22, 400crores

Percentage shares of various companies in total sales of lubes (by value)



Total Sales of lubes for the year 2000-2001 = Rs. 22, 400crores

Shefali's project guide, after reviewing the above information, pointed out the fact that the above figures were inclusive of the considerable volumes of inter-company sales that occur every year. Therefore the correct market shares of the companies should be arrived at after deducting the inter company sales figures from the present figures. Shefali then further collected the following information regarding the inter-company sales.

BUYER	Sale value as a percentage of the total sales of the selling company					
SELLER		PRL	OICL	PHCL	PBCL	OTHERS
PRL	Fuels	-	50	10	-	40
	Lubes	-	30	-	10	60
OICL	Fuels	—	—	15	20	10
	Lubes	-	-	20	-	40
PHCL	Fuels	-	20	-	20	20
	Lubes	-	10	-	25	40
PBCL	Fuels	-	30	10	-	35
	Lubes	-	15	5	-	25
OTHERS	Fuels	-	10	5	10	-
	Lubes	-	15	5	15	-

15. By approximately what percentage did Shefali overestimate the correct value of the total sales of fuels?
(1) 135% (2) 200% (3) 110% (4) 180%

16. If the correct sales figures are considered, then which of the following has the largest percentage share by value of the sales of fuels and lubes put together?
(1) PRL (2) OTHERS (3) OICL (4) PBCL

17. If for any company, Sales - Purchases = Profit, then neither fuels nor lubes were profitable for
(1) PRL (2) PHCL (3) OTHERS (4) OICL

18. Assuming the information given in the above question as true, which of the following had the maximum profitability for fuel?
(1) OICL (2) PHCL (3) PBCL (4) OTHERS

19. Which of the following had the second largest percentage share by value when the correct sales figures of fuels and lubes put together are considered?
(1) OTHERS (2) PHCL (3) OICL (4) PBCL

DIRECTIONS for questions 20 to 23: These questions are based on the data given below.
A paddy processing unit purchases 10,000 kg of paddy. After subjecting it to milling operation, the husk and rice are separated. The husk forms 5% of the total paddy weight. The rice so extracted from the paddy contains 6% of brokens or defective material in it. Cost of purchase of paddy is Rs.3.50/kg and the selling price of rice is Rs.8.00/kg. The broken material is sold at Rs.2.00/kg. The husk is sold atRs.0.50/kg.

20. What is the amount of paddy to be processed, such that the sale of the rice extracted from it excluding brokens and husk fetches an amount of Rs.14, 288?
(1) 2000 kg (2) 1786kg (3) 2500 kg (4) 1886 kg

21. Assuming that all the rice produced by processing 10,000 kg of paddy is sold, what would be the decrease in profits if the brokens in the operations increased to 8%?
(1) Rs. 1,000 (2) Rs. 1,100 (3) Rs. 1, 140 (4) Rs. 1,200

22. Due to the evaporation of moisture, there is a 5% loss of weight before the processing of the. Paddy began. As a result the decrease in the weight of rice obtained (in kg) is
(1) 450 kg (2) 500 kg (3) 447 kg (4) 475 kg

23. What is the amount realised on the sale of by products i.e., broken and husk on processing 5,000 kg of paddy
(l) Rs.200 (2) Rs.180 (3) Rs.695 (4) Rs.190

DIRECTIONS for questions 24 to 27: These questions are based on the data given below.
In a zoo, twelve animals, Elephant. Wolf Deer, Bear. Gorilla, Tiger. Antelope, Giraffe, Lion, Chimpanzee, Horse and Zibra are locked in twelve different cages from 1 through 12 (not necessarily in that order.) These cages are on either side of the path. Cages 1 through 6, in that order, are on the left side of the path and the cages 7 through 12, in that order, are on the right side of the path. Cage 1 is opposite Cage 7, Cage 2 is opposite Cage 8 and so on. The arrangement of the animals is as follows.

1. The Elephant is in the P^1 cage and is diagonally opposite to the Wolf which is opposite to the Chimpanzee.
2. The Bear is opposite to the Giraffe which is exactly in between the Gorilla and the Antelope.
3. The Deer is opposite to the Lion which is exactly in between the Wolf and the Tiger.
4. The Horse is diagonally opposite to the Chimpanzee.

24. If the Tiger is not opposite to the Gorilla, then which animal is adjacent to the Elephant?
(1) Antelope (2) Horse (3) Gorilla (4) Cannot be determined

25. In how many ways can the animals be arranged in the cage?
(l) One (2) Two (3) Three (4) Four

26. Which animal is exactly in between the Giraffe and the Deer?
(1) Antelope (2) Giraffe (3) Gorilla (4) Cannot be determined

27. If the Elephant is shifted to 12^{th} cage and the Deer is adjacent to the Gorilla then which animal is opposite to the Tiger?
(1) Antelope (2) Lion (3) Gorilla (4) Deer

28. Five items A, B, C, D and E are kept in five different boxes numbered 1 to 5. Exactly one item is kept in each box. C's box number is as much less than E's box number as E's box number is less [1] than A's box number. D is in box number 4 but not next to E. Then B is in box number
(1) 3 (2) 1 (3) 5 (4) 4

Directions Q. 29 to 33: Study the following table and answer the question given below it.
Number of different types of tyres of tyres sold by a company over the years (Numbers in lakh)

Year	A	B	C	D	E
1989	35	20	40	14	25
1990	40	15	55	20	35
1991	30	25	45	25	30
1992	25	30	50	30	35
1993	45	35	25	38	32
1994	42	28	34	42	30
1995	36	34	38	48	25

29. What was the approximate percentage increase in the number of D type tyres sold from 1992 to 1993?
(1) 26 (2) 30 (3) 35 (4) 40

30. In which of the following years was the percentage of D type tyres sold to total number of tyres sold the maximum among the given years?
(1) 1992 (2) 1994 (3) 1990 (4) 1995

31. In the case of which of the following types of tyres was there continuous increase in sales over the years?
(1) B (2) E (3) D (4) C

32. What was the difference in the number of C type tyres sold in 1990 and 1994?
(1) 21,000 (2) 2,10,000 (3) 2,50,000 (4) 21,00,000

33. The share of B type tyres in total sales of the company in 1994 was:
(1) 13% (2) 14% (3) 15% (4) 16%

DIRECTIONS for questions 34 to 36: These questions are based on the data given below.
In the recently held Asian Games, an apartment in the games village was allotted to five sportsmen - Pranay, Qureshi, Rasool, Surendar and Tarif. They were practising for the games in which they were participating. The games in which they are participating are as follows.

1. No two players play the same number of games.
2. Exactly three players participate in swimming.
3. Tennis was the only game common among Pranay, Qureshi and Tarif.
4. Weightlifting is the most common game.
5. Qureshi and Rasool are the only chess players and when Surendar joins them they practise weightlifting.
6. Cycling was the common game of Rasool and Tarif.

34. Which player plays all the five games?
(1) Pranay (2) Qureshi (3) Rasool (4) Surendar

35. Which among the following statements is definitely true?
(1) The only common game among Pranay, Qureshi and Rasool is swimming.
(2) The only common game between Qureshi and Tarif is cycling.
(3) Qureshi and Rasool participate in ail the games except Tennis.
(4) The number of players participating in each game is unique.

36. How many players participate in weightlifting?
(1) five (2) three (3) two (4) four

DIRECTIONS for questions 37 to 38: Select the correct alternative from the given choices.

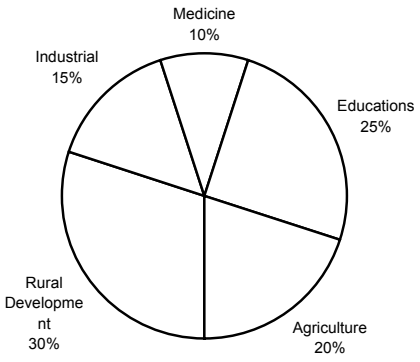
37. Eighty players numbered I through 80 are standing in a row, one behind the other, in the increasing order of their numbers. The physical director of the players performed eight successive inspections of the players and in each of the respective inspections he sent the first 10, 20, 30, 40, 50, 60, 70 and 80 players, from the front of the row to the end of the row. Each time the players being sent back one after another. After these eight rounds of inspections what is the position of the player numbered 5?
(1) 46^{th} (2) 45^{th} (3) 35^{th} (4) None of these

38. Five friends A, B. C. D and F wear five different coloured shirts Red. White, Green, Blue, and Black (not necessarily in that order) and five different coloured Trousers Red, White, Green, Blue and Black (not necessarily in that order) such that no person wears the shirt and the trouser of same colour. It is known that neither B nor E wears the Blue trouser while A wears a Black shirt. A. person has to wear only a White or Blue shirt with a White or Blue trouser. Which of the following gives a correct combination of the colour of A's trouser and the person wearing the Blue trouser given that D wears the Green shirt but not the Black trouser?
(1) Green, D (2) Green, C (3) Red, D (4) cannot be determined

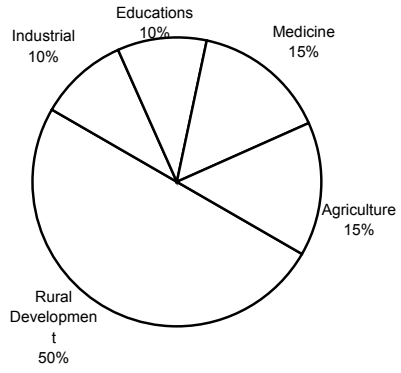
DIRECTIONS for questions 39 to 42: These questions are based on the pie charts given below

SECTORAL OUTLAY

1991- Total Outlay Rs. 2, 00, 000



1992- Total Outlay Rs. 2,50, 000



39. In 1992, the amount allocated to the sector recording a decrease in outlay of 8 percentage points over the one year period exceeds the amount allocated to the sector recording an increase in outlay of 5 percentage points by an amount of
(l) Rs.l0, 000 (2) Rs.12, 500 (3) Rs. 15, 000 (4) Rs. 17, 500

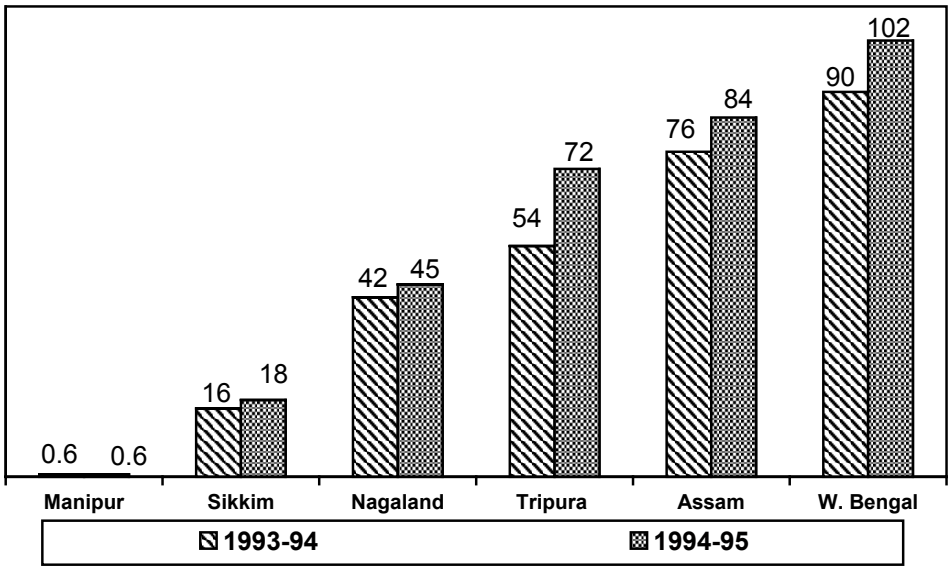
40. In the year in which the allocation to four sectors equals the allocation to Rural Development, the outlay of the sector which has the maximum allocation out of these four sectors, exceeds that of the sector to which there was least allocation by
(l) Rs.5, 000 (2) Rs. 10.000 (3) Rs.15, 000 (4) Rs.12, 500

41. The year in which allocation to Rural Development and other sectors are equal, the two sectors whose combined aggregate exceeds 25% but is less than 50% of the total allocation are
(1) Agriculture and Medicine (2) Agricultural and Industrial
(3) Medical and Education (4) None of the above

42. For the sector which records maximum percentage increase in allocation as compared to the previous year, the difference between the outlay for the two years is
(1) Rs.40, 000 (2) Rs. 5, 000 (3) Rs.50, 000 (4) None of these

DIRECTIONS for questions 43 to 46: These are based on the bar graph given below.

PRODUCTION OF COTTON
In thousands bales



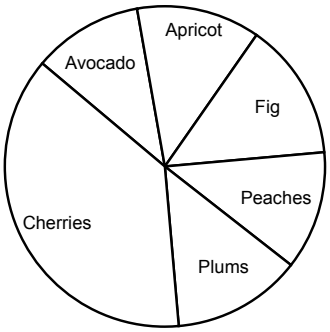
43. The total production in 1994-95 of the states that individually show a growth of more than 10% from 1993-94 to 1994-95 forms what proportion of the total production for all the states for that year?
(1) 82.1% (2) 91.7% (3) 93.6% (4) 85.8%

44. If x denotes maximum percentage increase in 1994-95 for any state and y denotes the least percentage increase for any state in 1994-95, then which of the following relations between x and y is the most appropriate?
(1) $(x-y)^2 = 0$ (2) $(x-y)^2 = 5621$
(3) x^2/y^2 is undefinable (4) y^2/x^2 is undefinable

45. By what percentage does the combined production in 1993-94 of the two largest cotton producing states exceed the production of the state whose production was the closest to the average production of all the states that year?
(1) 360% (2) 255% (3) 160% (4) None of these

46. The state which records 33.33% increase in production produces approximately what percentage of total production for 1993-94?
(1) 20 (2) 21 (3) 19 (4) 22

DIRECTIONS for questions 47 to 50: These questions are based on the following pie chart which represents the percentage of various trees in a fruit orchard consisting of 21, 600 trees and the table which represents percentages of fruit-yielding trees in each category of trees.



Type of tree	Percentage of fruit yielding trees in the category
Avocado	93
Apricot	87
Cherries	61
Fig	86
Plums	77
Peaches	78

47. The number of fruit yielding Cherry trees in the orchard are
(1) 1701 (2) 4941 (3) 3402 (4) 5751

48. The number of fruit yielding apricot trees exceed the number of fruit yielding peach trees by
(1) 327 (2) 364 (3) 357 (4) 347

49. Which among the following has the greatest number of fruit yielding trees?
(1) Avocado (2) Apricot (3) Peach (4) Plum

50. The fruit yielding plum trees from what percentage of fruit yielding peach trees?
(1) 112 (2) 110 (3) 107 (4) 101

DIRECTIONS for questions 51 to 55: These questions are based on the table given below.

PERFORMANCE OF EIGHT STUDENTS IN MOCK CAT

Student code	Verbal Ability			Quantitative Ability			Reading Comprehension			Data Interpretation		
	√	x	net	√	x	net	√	x	Net	√	x	Net
S_1	20	4	19	31	12	29	35	10	32.5	14	4	12
S_2	42	8	40	18	4	16	40	10	37.5	20	5	18.75
S_3	36	14	32.5	30	12	27	34	16	30	18	4	17
S_4	7	4	6	12	8	10	32	12	29	14	4	13
S_5	20	30	12.5	11	12	8	18	4	17	10	12	7
S_6	40	10	37.5	30	20	25	30	20	25	15	5	12.5
S_7	34	10	31.5	24	4	23	35	12	32	18	6	16.5
S_8	28	20	23	32	16	28	30	16	26	20	4	19

√ → Number of questions correct
x → Number of questions wrong
net → Net score in the section

Cut-off Marks

Area	Total number of questions in the section	Cutoff Marks
Verbal Ability	50	23
Quantitative Ability	50	18
Reading Comprehension	50	22
Data Interpretation	25	10

Students qualify in the test if they score more than or equal to cut off mark in all the sections. The sum of the net scores in all four sections together is called Grand Total.

51. Among the students who have qualified what is the maximum Grand Total?
(1) 106.5 (2) 108.5 (3) 100 (4) 103

52. What is the least Grand Total among the students who have qualified?
(1) 100 (2) 96 (3) 94 (4) 96.5

53. Who among the following committed maximum number of mistakes?
(1) S_1 (2) S_2 (3) S_3 (4) S_7

54. Which of the following statements is true?
I. The person who scored the maximum mark in Reading Comprehension did not qualify at the Exam.
II. The person who had the maximum Grand Total did not get maximum in any of the individual sections.
III. S_8 attempted maximum number of questions among all the students.
(1) Only I (2) Only I and ill
(3) All three statements are true (4) Only I and II

55. Who among the following answered maximum number of questions correctly?
(1) S_8 (2) S_7 (3) S_5 (4) S_6

EXERCISE 4

DIRECTIONS for questions 1 to 5: Refer to data below and answer the questions that follow.
In the two Tables below some statistics about consumption of electricity in India are given.

Table 1 gives the electricity consumed per (1) 1000 population, (20 1000 sq. kms of area and (3) per1000 consumers, for the period 1950 to 1950. note that all the population in India does not consume electricity- only a fraction are actual consumers. The data is given in terms of GWH (Giga watt Hour) and 1 GWH = 10^9 WH.

Table 2 gives the number of consumers as well its break up into various categories for the same period.

TABLE 1

Electricity Consumption in GWH

Year to	1950	1970	1980	1990	1993	1994
Per 1000 Population	0.016	0.09	0.253	0.253	0.299	0.32
Per 1000 Sq. kms area	1.7	15.4	25.1	64.4	80.8	88
Per 1000 Consumers	3.5	3.3	2.5	2.7	3.2	3.4

TABLE 2

Electricity of Consumers in Thousand

Year to	1950	1970	1980	1990	1993	1994
Domestic	1157	10165	22338	50389	60193	63406
Commercial	259	3206	4582	8002	9209	9558
Industrial	63	553	1150	2077	2337	2423
Agriculture	19	1571	4233	8631	9971	10372
Others	3	70	268	534	602	637
Total	1501	14665	32571	69633	82312	86399

1. Total electricity consumed by all the consumers in India in 1980 was
(1) 0.82×10^5 KWH (2) 0.82×10^7 KWH
(3) 0.82×10^9 KWH (4) None of above

2. India's total land area in 1994 was
(1) 3.3×10^6 sq. kms (2) 3.3×10^7 sq. kms
(3) 3.3×10^8 sq. kms (4) 3.3×10^9 sq. kms

3. Let f1 andf2 be the fraction of the total population who were electricity consumers in 1970 and 1980, respectively. What is the value of the ratio $\frac{f2}{f1}$
(1) 0.51 (2) 1.97 (3) 1.32 (4) Data insufficient

4. Consider the percentage rate of growth for the period 1980 to 1990 in the numbers of the four types consumers Domestic, Commercial, Industrial and Agricultural. How many of these percentage rates of growth were more than the percentage rate of growth of the total number of consumers for the same period?
(1) 0 (2) 1 (3) 2 (4) 3

5. What was the percentage increase in the number of Domestic consumers from 1970 to 1994?
(1) 223% (2) 374% (3) 524% (4) 612%

DIRECTIONS for questions 6 to10: Each of the following questions is followed by two statements.
Mark [1], if the question can be answered by using any of the statements alone but not by using the other statement alone.
Mark [2], if the question can be answered by using either of the statements alone.
Mark [3], if the question can be answered by using both the statements together.
Mark [4], if the question can not be answered.

6. Is y a perfect square where x and y are natural numbers?
I. y is divisible by (x+1) and (x+2)
II. y <200

7. Is a bag there are less than 40 marbles which are red, blue and black in colour. What is the probability of picking a black marble?
I The probability of drawing a blue marble is 1/3.
II. The probability of drawing a red marble is 1/24.

8. If 102 is perfectly divisible by a natural number x, what is the value of x?
I. x + 17 is divisible 3. II. X + 2is divisible by 4

9. The sum of the prices of 2 shares X and Y is Rs.160. what is the price of Y?
III. When there is an increase of 10% in one of these of the shares and a decrease of 55 in the other, there is a change of Rs.6 in Y.
IV. 50 < x < 130

10. In ΔABC. $\angle A = 70^0$. What is the value of $\angle C$?
I. $\angle A - \angle C < \angle B - \angle C$ II. $B^2 + C^2 = 7300$

DIRECTIONS for questions 11 to 14: Refer to the data and answer the questions that follow.
Three leading drug manufacturers, ajit Pharma, and Chinku pharma each launch an atipyretic drug. Each company uses all or some of the 5 components A, B, C,D and E. the table below gives the composition of these components in their drug.

	A	B	C	D	E
Ajit Pharma	12	15	20	28	25
Bittu Pharma	37	15	13	15	20
Chinku Pharam	26	15	10	34	15

Above value are in percentage of composition. All manufactures produce their drug as a tablet of 300 mg.

11. .The effectiveness of components A, B, C, D are in the ratio 5 : 6 : 4 : 3, while E is just a sweetner and does not have any therapeutic. Which of the following company's tablet is most effective?
(1) Ajit Pharma (2) Bittu Pharma
(3) ChinkuPharma (4) Data Insufficient

12. If the side effects caused by drugs are proportional to the ratio of 's composition to the sum of B's and E's composition, which drug has least side effect.
(1) Ajit Pharma (2) Bittu Pharma
(3) ChinkuPharma (4) Data Insufficient

13. Ajit Pharma finds that its sales are dipping, because it drug's taste is too sweet. So, it decides to decrease the composition of E and increase that C, keeping other composition unchanged. It also wants to make sure that the side effect is not more than double its previous value. What could be the maximum percentage of C's composition in Ajit's Drug? (Use data from the previous questions if necessary).
(1) 25% (2) 30% (3) 34% (4) 37%

14. If in all, million tables are produced by these 3 companies, per annum, the consumption of component C, annually would be:
(1) 60 kg (2) 90 kg (3) 105 kg (4) Data Insufficient

DIRECTIONS for questions 15 to 19: Refer to the data below and answer the questions that follow.

JET AIRWAYS

1ST august, 2002 to 31st October, 2002

(To & From)

Special Festival Fares					
From Mumbai to	Current fares (R.)	Festival fares (Rs)	From Mumbai to	Current fares (Rs)	Festival fares (Rs)
Delhi	6095	3920	Udaipur	4405	2213
Kolkata	6855	3320	Bhopal	4125	2371
Bangalore	4485	2839	Mangalore	4280	2446
Chennai	4905	2744	Nagpur	4200	2555
Hyderabad	4140	2443	Jodhpur	4935	2684
Ahedabad	3255	2017	Jaipur	5530	2917
Pune	2215	1295	Calicut	5060	3018
Indore	3360	1965	Cochin	6215	3248
Aurangabad	2745	2098	Thiruvananthapuram	6700	3312

To and From fares are same and the rates are effective from 1st August,2002 to 31st October,2002.

15. Ramesh, an executive of a company at Mumbai visits Delhi, Nagpur and Indors every month and Mr. Ganesh visits Kolkata, Manglore and Hyderabad every mnth from Mumbai. Find the difference in th percentager benefit to the company between the rips of Ramesh and Ganesh in the festival month.
(1) 11 (2) 25 (3) 35 (4) none of these

16. With the discounts offered for Kolkata and Delhi tickets, how many different kinds of tickets can be bought respectively utilizing the festival benefit for other visits also
(1) 11 & 5 (2) 12 & 6 (3) 17 & 4 (4) 16 & 3

17. The largest absolute discount is what percentage of the lowest absolute discount?
(1) 3.87% (2) 216% (3) 464% (4) 546%

18. What is the average discount in the air fare approximately?
(1) Less than 10% (2) More than 50%
(3) Less than 50% (4) None of these

19. Four executives of a company visited one of the four cities Delhi, Bhopal. Ahemdabad and Indore. All of them left on 29th July, 2002 and came after a weeks visit, by the return flight of the same air lines. What would have been percentage saving in tickets expenditure if they had postponed their visit by one week, and returned after a week.
(1) 12% (2) 24% (3) 38% (4) 42%

DIRECTONS for questions 20 to 24: Refer to the data below and answer the questions that follow.
The table provides the percentage of total revenues accounted for the top 2 firms, top 4 firms and the top 190 firms in various industries. However, one of the data points in one of the industries is incorrect which is then corrected by adding or subtracting 4% from the incorrect data.

Industry	Top2 form (% of total industry)	Top 4 Firms (% of total industry)	Top 10 Firms(% of total industry)
Steel	60	75	100
Oil & gas	50	80	100
Shipping	40	50	100
Leather	4	6	10
Textiles	8	18	30
Sp. Chem	3	5	7
Elevators	100	100	100
Refrigerators	25	40	60

20. Which is the incorrect data point and what is the correct data?
(1) Top4firmsforOil & Gas, 75% (2) Top 4 firms for Leather,55
(3) Top 4 firms for Textiles,14% (4) Top 4 firms for Refrigerators, 45%

21. if the size of the largest steel firms is Rs5000 cr, which of the following cannot be the total size of the steel industry?
(1) 10,000 cr (2) 12,500 cr (3)15,000 cr (4) 17,000 cr

22. How many industry definitely have at least 20 firms in all?
(1) 4 (2) 3 (3) 5 (4) 6

23. An industry faces restrictions if the top 2 firms form more than 40% of the industry and the top 4 firms more than 60% of the industry. An exception to this is if the largest firm in the industry is owned firms by the government. Which of the following is true?
(1) Government owned firms can exist in a maximum of 3 industries
(2) 4 industries face restrictions.
(3) The ratio of the number of industries that face restrictions to the number of industries that do not face restrictions isles than 0.5.
(4) None of above.

24. If were least 2 mergers in the steel industry last year (the year before the data pertains to), how many firms definitely existed in that industry last year?
(1) 8 (2) 10 (3) 9 (4) 7

DIRECTIONS for Qns. 25 to 29: Consider the following statements where every person gets exactly one different dish:

1. Ria will not get soup unless Janet gets hot coffee.
2. Gia will not get gums unless Veena gets soup.
3. Veena will not get tea unless Gia gets soup.
4. Janet will not get gums unless Ria gets hot coffee.
5. Janet will not get hot coffee unless Veena gets gums.
6. Gia will not get hot coffee unless Ria gets tea.
7. Gia will not get tea unless Ria gets hot coffee.
8. Ria will not get hot coffee unless Gia gets soup.
9. Veena will not get gums unless Ria gets the hot coffee.
10. Janet will not get tea unless Ria gets gums.
11. Gia will not get soup unless Ria gets gums.

25. Who gets gums?
(1)Ria (2)Gia (3) Janet (4) Veena

26. Who gets soup?
(1)Janet (2)Veena (3) Gia (4) Ria

27. Who gets hot coffee?
(1)Gia (2)Veena (3) Ria (4) Janet

28. Who does Janet get?
(1)Hot coffee (2)Soup (3) Gums (4) Tea

29. Dileep, Martin and Salman married Ranjana, Vidisha and Karuna (not necessarily in that order). Each of the couples has a son; their names being Saumitra, Shyam and Subhash. Further

i. Ranjana married six months before Karuna did.
ii. Salman was first to marry & Dileep, the last. Al the marriages took place in 1998 between February (month of first marriage) and September (month of last marriage).
iii. None of the couples had a child within one year of their marriage.
iv. Saumitra was born within 16 months of his parents' wedding. He was not born between August & Janauary both months inclusive
v. Karuna's son was born within 16 months of her marriage and Vidisha's exactly 24 months after the marriage.
vi. Subash was born an American citizen in Janaury.

Who are Saumitra's parents
(1)Dileep-Ranjana (2)Salman-Karuna
(3) Martin-Ranjana (4) Martin-Karuna

30. Sangt Kripalchand had been preaching daily how important it was not to tell a lie. At last, Seth Jhuthamal decided to heed Sant's teaching. So, henceforth, he would not tell a lie on Monday, Wednesday, Thursday and Saturday; on other days he would continue to tell lies only.
Presently, a customer comes to his jewellery shop and Seth Juthamal ties to close a sales deal.
"But what is the guarantee that the jewellery is of specified parity" the customer asks.
For today is Tuesday, the Santji's beloved day, when I don't speak a lie.
"What if I make purchase tomorrow", the customer enquires.
"Tomorrow may be too late as being Saturday I may lie that day" insisted Sethji.
So, this is how the conversation took place.

What could be the day of this conversation?
(1)Friday (2)Tuesday (3) Sunday (4) Any one of these

31. Every month Chess Federation of India publishes ranking of Indian Chess Players. They actually complement the FIDE lists which are brought out at longer intervals. It was seen, observing monthly lists for last tear, that top six players in the list remained same throughout the year but there was considerable mutual change of rankings among these six. Thus ranking for January 2003 as follows:

January 2003 was as follows:

1. P. Harikrishna	2. D. Barua	3. K. Humpy
4. S. Chanda	5. K. Ramesh	6. S.S Ganguli

The list of rankings for Feb 2003 had an entirely different look with each of the six ranked in a position from the previous one. The following facts are known :

1. No one else had his/her ranking changed by as many places as D. Barua, whose change in ranking was the greatest of the six.
2. The product of Chanda's ranking for the two months was the same as product of Ganguli's ranking for the two months.

Who was ranked 5th in the list for February 2003.
(1)P. Harikrishna (2)D. Barua (3) K. Humpy (4) None of these

32. In the following sum

E E E	EEE
F F F	XXX
+ G G G	+ YYY
J K LM	JKLM

where each of the different letters stand for a different digits, E stands for
(1)2 2 .3 (3) 4 (4) None of these

DIERCTIONS for Questions 33 - 35: The coach of Indian Snooker and Billiards team has a novel way of providing them the required practice and improving the individual's skill set. He does this through forming practice teams from among the team members after carefully considering relative strengths and weaknesses. Presently, he aims to reduce the number of practice teams from 4 – A1, A2, A3, A4 – to 3 to be called B1, B2 and B3. The players on team A1 are: A, B and C. The players on Team A2 are: D, E, F and G. The players on team A3 are: H and I. The players on team A4 are: J, K and L. A new team must, of course, have a minimum of two players. Other conditions are:

1. Each of the new teams (B teams) must contain at least one member from the four original teams (A teams)
2. K and L have to be in separate teams
3. Any of the B teams cannot contain all the members of any of the A teams.

33. What could be the maximum strength of a B team?
(1) 8 (2) 6 (3) 7 (4) 5

34. If one of the B teams is constituted of C, D, E, F and J only, which of the following groups cannot completely represent one of the other B teams?
(1) A, B, I (2) B, H, K (3) G, I, L (4) B, G, I, L

35. If a B team is constituted of A, C, D and K only, which of the following groups does not completely represent one of the other B teams?
(1) B, G, L (2) B, E, I (3) B, F, G, H (4) E, H, J, L

DIRECTIONS for Q 36 - 37: Refer to the following data
There are four bags on a shelf all in a straight horizontal line. Each bag contains a pair of socks and a tie. No bag contains a pair of socks and tie the same colour as the bag or each other. All four bags, pairs of socks and ties are either red, green, blue or yellow. No two bags are the same colour, no two ties are the same colour and no two pairs of socks are the same colour.
The red tie is in the bag next to the bag containing the pair of green socks. The yellow socks are in the bag next to the green bag which is next to the bag containing the green tie. The bag on the far left is red. The blue socks are in the bag next to the bag containing the blue tie. The yellow bag is n't next to the blue bag which is next to the bag containing the red socks. The green tie is in the blue bag or the yellow bag. The yellow tie is not in the red bag which is not, and is not next to the bag containing the yellow socks.

36. Which bag is the right most?
(1) Yellow (2) Green (3) Blue (4) Yellow or Blue

37. Which combination of bag tie and socks (in that order) is in the extreme left?
(1) Red- Blue-Green (2) Red–Green-Yellow
(3) Red-Yellow-Red (4) Red-Yellow-Yellow

DIRECTIONS FOR Q. 38-39: Refer to the following data

In a city state, government officials never tell the truth and those who are not government officials always tell the truth. A visitor meets three residents of the city state and asks one of them," Are you a government official?"

The first resident answer the question. The second native then reports that the first resident denied being a government official. The third resident says that the first resident is a government officials.

38. How many of these three residents are not government officials?

(1) 1 (2) 3 (3) 2 (4) Insufficient data

39 What is the order in which the three residents statements are true/false

(1) True, True, False (2) False, False, True

(3) True, True, True (4) Insufficient data

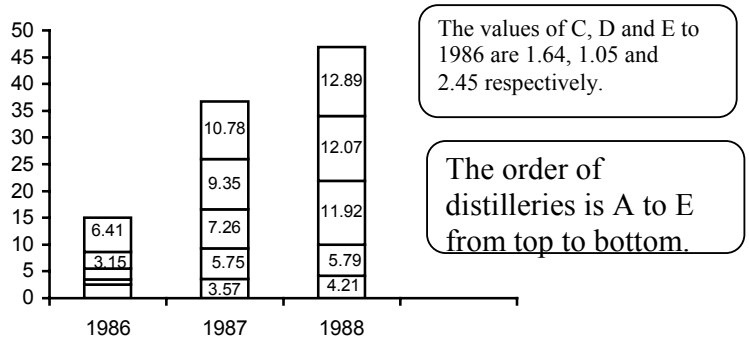
40. In a batch of 120 postgraduate History students each student has to select at least one subject out of American History, Ancient Indian History. Modern Indian History and History of Modern Europe. 90 students selected History of Modern Europe and an equal number. American History. 105 students selected Ancient Indian History and an equal number. Modern Indian History. AT least how many students selected all the four subjects.

(1) 75 (2) 45 (3) 30 (4) Insufficient data

EXERCISE 5

Directions: Q 1 to 4 are based on the following bar charts:

LIQUOR SUPPLIED IN TAMIL NADU BY DISTILLERIES A, B, C, D, E (in lakh cases).



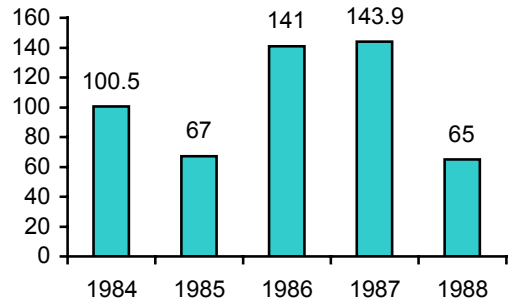
Q.1 Which of the five states manufactured liquor at the lowest cost?
(1) Tamil Nadu
(2) Delhi
(3) The state which has the lowest value for (Wholesale Price – Excise duty) per litre
(4) Cannot be determined

Q.2 If Excise duty is levied before the goods leave the factory, then which of the following choices shows the excise duty in ascending order for the year 1986?
(1) ECABD (2) ADEBC (3) DCEBA (4) Cannot be determined

Q.3 By what per cent do the excise duty rates between the closest among the five rates nearly differ?
(1) 2 (2) 13 (3) 1/3 (4) Cannot be determined

Q.4 If the Tamil Nadu Co., with the least simple annual growth in sales in the given period had shown the same rate of growth as the one which grew fastest, what would that company's sale have been in 1988, in lakh cases?
(1) 13 (2) 15.4 (3) 130 (4) Cannot be determined

Directions Q 5 to 7 : Refer to the following Bar-chart (values are in Rs crore):



Q.5 What is the average value of the contract secured during the years shown in the diagram?
(1) Rs. 103.48 crore (2) Rs. 105 crore
(3) Rs. 100 crore (4) Rs. 125.2 crore

Q.6 Considering 1985 as the performance base of 100% to which other performances may be referred, which of the following most closely represents the set of Project Export Performance indices for '84, '85, '86', '87, '88?
(1) 150, 100, 211, 216, 97 (2) 100, 67, 141, 144, 65
(3) 150, 100, 200, 215, 100 (4) 120, 100, 220, 230, 68

Q.7 Which is the year in which the highest percentage decline is seen in the value of contract secured compared to the preceding year?
(1) 1985 (2) 1988 (3) 1984 (4) 1986

Directions Q 8 to 13 :The table below shows the estimated cost (in Rs. lakh) of a project of laying a railway line between two places.

	1988	1989	1990	1991
1. Surveying	41.5	7.5	2.2	0.5
2. Cement	-	95.0	80.0	75.0
3. Steel	-	70.0	45.0	60.0
4. Bricks	-	15.0	12.0	16.0
5. Other building material	-	25.0	18.0	21.0
6. Labour	2.1	25.0	20.0	18.0
7. Administration	7.5	15.0	15.0	14.0
8. Contingencies	1.0	15.0	4.2	5.0
Total	**52.1**	**267.5**	**196.4**	**209.5**

Q.8 If the cost of materials rises by 5% each year from 1990 onwards, by how much w ill the estimates fall short?
(1) Rs. 11.4 lakh (2) Rs. 16.4 lakh
(3) Rs. 21.4 lakh (4) Rs. 26.4 lakh

Q.9 What ratio does cost of material bear to labour cost approximately?
(1) 4 : 1 (2) 8 : 1 (3) 12 : 1 (4) 16 : 1

Q.10 The total expenditure is required to be kept within Rs. 700 lakh by making a cut equally in all the years, on expenditure of administration. What will be the percentage cut for 1989?
(1) 22.6 (2) 32.6 (3) 42.6 (4) 52.6

Q.11 If the length of line to be laid each year is in proportion to the provision for material and labour cost, what fraction of the total length is proposed to be completed in the third year?
(1) 0.9 (2) 0.7 (3) 0.6 (4) 0.3

Q.12 After preparing the estimate, the provision for contingencies is felt inadequate and is therefore doubled. By what percent does the total estimate increase?
(1) 3.47 (2) 2.45 (3) 1.50 (4) 3.62

Q.13 It is found at the end of 1990, that the entire amount estimated for the project has been spent. But for 1991, the actual amount spent is equal to that which was estimated. By what per cent approximately has the actual expenditure exceeded the estimate?
(1) 39 (2) 29 (3) 19 (4) 9

Directions for Q. 14 to 18: The first table gives the number of saris (of all the eight colours) stocked in six regional showrooms. The second gives the number of saris (of all the eight colours) sold in these six regional showrooms. The third table gives the percentage of saris sold to saris stocked for each colour in each region. The fourth table gives the percentage of saris of a specific colour sold within that region. The fifth table gives the percentage of saris of a specific colour sold across all the regions.

Study the tables and for each of the following questions, choose the best alternative.

Table 1

Region	Blue	Green	Magenta	Brown	Orange	Red	Violet	Yellow	Total
1	267	585	244	318	132	173	195	83	1994
2	341	480	99	199	234	119	200	109	1781
3	279	496	107	126	100	82	172	106	1468
4	198	307	62	221	65	96	124	91	1164
5	194	338	120	113	82	60	125	124	1156
6	158	261	133	104	71	158	128	82	1095
Total	1437	2454	765	1081	684	688	944	595	8658

Table 2

Region	Blue	Green	Magenta	Brown	Orange	Red	Violet	Yellow	Total
1	122	164	71	165	40	84	97	45	788
2	124	200	37	78	67	47	73	50	676
3	21	57	7	24	9	14	20	11	163
4	79	85	22	164	18	46	43	54	511
5	29	36	22	17	9	18	19	16	166
6	1	3	2	2	1	3	2	4	18
Total	376	545	161	450	144	212	254	180	2322

Table 3

Region	Blue	Green	Magenta	Brown	Orange	Red	Violet	Yellow	Total
1	46	28	29	52	30	49	50	54	40
2	36	42	37	39	29	39	37	46	38
3	8	11	7	19	9	17	12	10	11
4	40	28	35	74	28	48	35	59	44
5	15	11	18	15	11	30	15	13	14
6	1	1	2	2	1	2	2	5	2
All	26	22	21	42	21	31	27	30	

Table 4

Region	Blue	Green	Magenta	Brown	Orange	Red	Violet	Yellow	Total
1	15	21	9	22	4	11	12	6	100
2	18	30	5	12	10	7	11	7	100
3	13	35	4	15	6	9	12	7	100
4	15	17	4	32	4	9	8	11	100
5	17	22	13	10	5	11	11	10	100
6	6	14	11	11	6	17	11	22	100

Table 5

Region	Blue	Green	Magenta	Brown	Orange	Red	Violet	Yellow
1	32	30	44	37	28	40	38	25
2	33	37	23	17	47	22	29	28
3	6	10	4	5	6	7	8	6
4	21	16	14	36	13	22	17	30
5	8	7	14	4	6	8	7	9
6	0	1	1	0	1	1	1	2
Total	100	100	100	100	100	100	100	100

Q.14 In which region is the maximum percentage of blue saris sold?
(1) 2 (2) 3 (3) 1 (4) 4

Q.15 Out of its total sates, which region sold the minimum percentage of green saris?
(1) 1 (2) 6 (3) 4 (4) 2

Q.16 Which region sold the maximum percentage of magenta saris out of the total sales of magenta saris?
(1) 3 (2) 4 (3) 2 (4) 1

Q.17 Which colour is the most popular in region 1?
(1) Blue (2) Brown (3) Green (4) Violet

Q.18 Which region-colour combination accounts for the highest percentage of sales to stock?
(1) (1, Brown) (2) (2, Yellow) (3) (4, Brown) (4) (5, Red)

Directions for Q. 19 to 22 : The table below give the achievements of Agricultural Development Programmes from 1983-84 to 1988-89.

Programme	83-84	84-85	85-86	86-87	87-88	88-89

Irrigation (Cumulative in Million Hectares)

Major & Medium	22.05	22.70	23.20	24.0	24.60	25.32
Minor	28.60	32.77	32.77	34.20	34.20	35.14

High yielding varieties (Million Hectares)

1. Paddy	16.90	18.20	19.70	18.70	21.70	22.80
2. Wheat	15.90	16.10	16.80	17.80	19.40	19.10
3. Jowar	3.10	3.50	3.90	4.40	5.30	5.10
4. Bajra	2.90	3.60	4.60	4.70	5.40	5.20
5. Maize	1.40	1.60	1.60	1.70	1.90	2.00

Consumption of Chemical fertilisers (Million tons)

1. Nitrogen	3.42	3.68	4.07	4.22	5.20	5.49
2. Phosphate	1.11	1.21	1.32	1.44	1.73	1.89
3. Potash	0.59	0.62	0.67	0.73	0.78	0.84

Q.19 How much area, in million hectares, was brought under irrigation during the year 1986-87?
(1) 58.20 (2) 1.43 (3) 0.80 (4) 2.23

Q.20 The consumption of chemical fertiliser per hectare of gross cropped area is lowest for the year
(1) 1984-85 (2) 1985-86 (3) 1986-87 (4) 1987-88

Q.21 It is possible that a part of the minor irrigated area is brought under major and medium areas. In which year has this definitely happened?
(1) 1984-85 (2) 1985-86 (3) 1986-87 (4) 1987-88

Q.22 In which year does the area cropped under high yielding varieties show a decline for the maximum number of crops?
(1) 1988-89 (2) 1985-86 (3) 1986-87 (4) None of these

Directions for Q. 23 to 30: Each of the following questions is followed by two statements.
Mark 1, if the question can be answered with the help of statement 1 alone.
Mark 2, if the question can be answered with the help of statement 2 alone.
Mark 3, if both statement 1 and statement 2 are needed to answer the question, and
Mark 4, if the question cannot be answered even with the help of both the statements.

Q.23 How long did Mr. X take for the 5000 km journey with 10 stopovers?
(1) The i^{th} stopover lasted i^2 minutes.
(2) The average speed between any two stopovers was 66 kmph.

Q.24 A man distributed 43 chocolates to his children. How many of his children are older than five years?
(1) A child older than five gets 5 chocolates.
(2) A child 5 years or younger gets 6 chocolates.

Q.25 If R is an integer between 1 & 9, and P - R = 2370, what is the value of R?
(1) P is divisible by 4. (2) P is divisible by 9.

Q.26 Is $(x^{-1} - y^{-1})/x^{-2} - y^{-2}) > 1$?
(1) $x + y > 0$.
(2) X and y are positive integers and each is greater than 2.

Q.27 x, y, and z are three positive odd integers. Is x + z divisible by 4?
(1) y - x = 2 (2) z - y = 2

Q.28 Ramu went by car from Calcutta to Trivandrum via Madras, without any stopping breaks. The average speed for the entire journey was 40 kmph. What was the average speed from Madras to Trivandrum?
(1) The distance from Madras to Trivandrum is 0.30 times the distance from Calcutta to Madras.
(2) The average speed from Madras to Trivandrum was twice that of the average speed from Calcutta to Madras.

Q.29 X is older than Y, Z is younger than W and V is as old as Y. Is Z younger than X?
(1) W may not be older than V (2) W is not older than V

Q.30 The unit price of product P1 is non-increasing and that of product P2 is decreasing. Five years hence, which product will be costlier?
(1) Current unit price of P1 is twice that of P2.
(2) 5 years ago, unit price of P2 was twice that of P1.

Directions Q. 31 to 35: Each of these items has a question followed by two statements. As the answer, mark

1, if the questions can be answered with the help of both the statements but not with the help of either statement itself.
2, if the question can not be answered even with the help of both the statements.
3, if the question can be answered with the help of statement II alone
4, if the question can be answered with the help of statement I alone

Q.31 What is value of x, if x and y are consecutive positive even integers?
I. $(x - y)^2 = 4$. II. $(x + y)^2 < 100$

Q.32 What is the profit percent?
I. The cost price is 80% of the selling price. II. The profit is Rs. 50.

Q.33 What is the length of the rectangle ABCD?
I. Area of the rectangle is 48 square units.
II. Length of the diagonal is 10 units

Q.34 What is the price of bananas?
I. With Rs.84, I can buy 14 bananas and 35 oranges.
II. If price of bananas if reduced by 50% then we can buy 48 bananas in Rs.12.

Q.35 What is the first term of an arithmetic progression of positive integers?
I. Sum of the squares of the first and second term is 116.
II. The fifth term is divisible by 7.

EXERCISE 6

Directions: Q. 1 to 4: are based on the table and information given below.

Bankatal works x hours a day and rests y hours a day. This pattern continues for 1 week, with an exactly opposite pattern next week, and so on for four weeks. Every fifth week he has a different pattern. When he works longer than he rests, his wage per hour is twice of what he earns per hour when he rests longer than he works.

The following are his daily working hours for the weeks numbered 1 to 13:

	1st week	5th week	9th week	13th week
Rest	2	3	4	-
Work	5	7	6	8

A week consists of six days and a month consists of 4 weeks.

Q.1 What is his salary for first month?
(1) 1440 (2) 2040 (3) 1320 (4) 1680

Q.2 Referring to the data given in Q. 187, Bankatlal's average monthly salary at the end of the first four months will be:
(1) 1760 (2) 2040 (3) 1830 (4) 1680

Q.3 The new manager Kushaldas stipulated that Rs. 5 be deducted for every hour of rest and Rs.25 be paid per hour starting the 9th week, then what will be the change in Bankatlal's salary for the 3rd month? (Hourly deductions and salaries are constant for all weeks starting 9th week).
(1) 540 (2) 480 (3) 240 (4) 0

Q.4 Using the data in the previous questions, what will be the total earning of Bankatlal at the end of sixteen weeks.
(1) 7320 (2) 7800 (3) 8400 (4) 7680

Directions: Q 5 to 9 are based on the table given below:

Machine M1 as well as Machine M2 can independently produce either Product P or Product Q. The times taken by machines M1 and M2 (in minutes) to produce one unit of product P and Q are given in the table below: (Each machine works 8 hours per day).

Product	M1	M2
P	10	8
Q	6	6

Q.5 What is the maximum number of units that can be manufactured in one day?
(1) 140 (2) 160 (3) 120 (4) 180

Q.6 If the number of units of P is to be 3 times that of Q, what is the minimum idle time for maximum total units manufactured?
(1) 0 minutes (2) 24 minutes
(3) 1 hour (4) 2 hours

Q.7 If equal quantities of both are to be produced, then out of the four choices given below, the least efficient way would be:
(1) 48 of each with 3 minutes idle (2) 64 of each with 12 minutes idle
(3) 53 of each with 10 minutes idle (4) 71 of each with 9 minutes idle.

Q.8 If M1 works at half its normal efficiency, what is the maximum number of units produced, if at least one unit of each must be produced?
(1) 96 (2) 89 (3) 100 (4) 119

Q.9 What is the least number of machine hours required to produce 30 pieces of P and 25 pieces of Q?
(1) 6 hours 30 minutes (2) 7 hours 24 minutes
(3) 5 hours 48 minutes (4) 4 hours 6 minutes

Directions: Q. 10 to 14 are based on the information given below:

A company produces five types of shirts - A, B, C, D, E - using cloth of three qualities - High, Medium and Low - using dyes of three qualities - High, Medium, and Low. The following tables give, respectively:
1. The number of shirts (of each category) produced, in thousands.
2. The percentage distribution of cloth quality in each type of shirt, and
3. The percentage distribution of dye quality in each type of shirt.

Note: Each shirt requires 1.5 meters of cloth.

			Distribution of cloth (%)				Distribution of dye (%)		
Shirt Type	Number (000)	Shirt Type	High	Medium	Low	Shirt Type	High	Medium	Low
A	20	A	80	20	-	A	70	15	15
B	30	B	30	40	30	B	20	50	30
C	30	C	-	70	30	C	-	60	40
D	10	D	-	60	40	D	-	40	60
E	10	E	-	10	90	E	-	20	80

Q.10 What is the total requirement of cloth?
(1) 150,000 m (2) 200,000 m
(3) 225,000 m (4) 250,000 m

Q.11 How many metres of high quality cloth is consumed by A-shirts?
(1) 8,000 m (2) 112,000 m
(3) 24,000 m .(4) 30,000 m

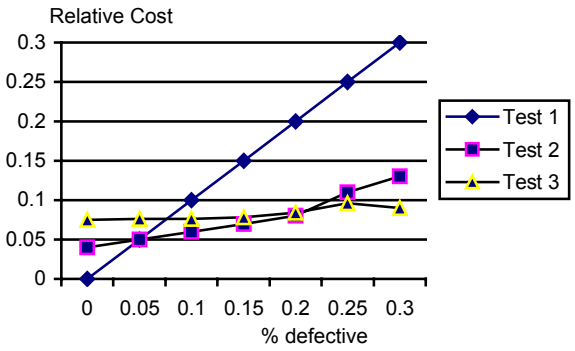
Q.12 What is the ratio of low-quality dye used for C-shirts to that used for D-shirts?
(1) 3 : 2 (2) 2 : 1 (3) 1 : 2 (4) 2 : 3

Q.13 How many metres of low-quality cloth is consumed?
(1) 22,500 (2) 46,500 (3) 60,000 (4) 40,000

Q.14 What is the ratio of the three qualities of dyes in high-quality cloth?
(1) 2 : 3 : 5 (2) 1 : 2 : 5 (3) 7 : 9 : 10 (4) None of the above.

For 15 to 19 use the following data:

A manufacturer can choose from any of the three types of tests available for checking the quality of his product. The graph gives the relatives costs for each of these tests for a given percentage of defective pieces.



Q.15 dopting Test-2 will be feasible if the percentage of defective pieces (p) lies between:
(1) 0.10 to 0.020 (2) 0.20 to 0.30
(3) 0.05 to 0.20 (4) 0.00 to 0.05

Q.16 If p is equal to 0.2, then which test will be feasible?
(1)either 1 or 2 (2) 2 only (3) 3 only (4) either 2 or 3

Q.17 When will Test-3 be feasible?
(1) $p > 0.2$ (2) $0.1 < p < 0.2$
(3) $0.05 < p < 0.1$ (4) $p < 0.05$

Q.18 When is Test-1 feasible?
(1) $p < 0.05$ (2) $0.0 < p < 0.2$
(3) $0.1 < p < 0.2$ (4) 0.05 to 0.2

Q.19 If $p < 0.2$, then the best alternative will be:
(1) Test-2 (2) Test-3 (3) Test-1 (4) Not Test-3

DIRECTIONS for Q. 20 to 26: The table below provides the data for production of ferrous and non-ferrous metals in million dollars for the year 1990 and % change for the three periods for the entire world and regionwise.

Value 1990	Non-Ferrous Metals Annual %change			Region	Value 1990	Ferrous Metals Annual %change		
	1980-90	1989	1990			1980-90	1989	1990
8660	6	4	11	World	11350	6	4	12
2308	8	7	15	Asia	2590	8	10	23
670	5	8	14	Japan	665	5	11	20
348	15	6	18	China + HK + Taiwan	393	15	18	28
908	9	8	19	Asian	1075	8	11	25
1408	7	5	11	North America	2632	9	11	17
502	9	7	18	Latin America	678	12	-3	15
3415	4	0	3	Western Europe	4490	4	1	5
3151	4	0	2	European Union (15)	4133	4	2	5
378	7	0	24	C./E Europe/ Baltic States/USSR	423	5	-12	13
162	8	1	14	Central Europe	255	10	-1	13
147	-	1	34	USSR	80	-	-23	12
203	3	10	27	Africa	297	4	-3	7
368	7	28	46	Middle East	300	6	1	14

Q.20 In which of the following regions production of Non-ferrous metals exceeded that of ferrous metals in 1989?

(1) Asean (2) China + HK + Taiwan
(3) Japan (4) Middle East

Q.21 What was the following regions production of Ferrous metals in million dollars by developing economies of Asia in 1990 (In Asia Japan is the only developed economy)?

(1) 1256 (2) 1568 (3) 1925 (4) 1638

Q.22 Which of the following values is closest to world production of ferrous metals in the year 1988 (million dollars)?

(1) 13200 (2) 9000 (3) 7500 (4) 9750

Q.23 What percentage of the world production of non-ferrous metals was contributed by non-EU countries of Western European in 1980?

(1) 6% (2) 36% (3) 3% (4) Indeterminate

Q.24 What was the CAGR of ferrous metals production between the year 1988-90 in USSR, Central/East Central/East Europe, European Union, Batlic States and non-EU-Western Europe economies?

(1) 2% (2) 4.1% (3) 3% (4) 0.40%

Q.25 Which of the following is not true?

(1) None ferrous metals production as a percentage of ferrous metals production in the year 1990 was highest for USSR.
(2) China accounted for less than 4 percent of all metals production in 1990.
(3) Africa contributed to less than 2 percent of all metals production in 1990.
(4) USSR witnessed the second highest annual rate of growth on non-ferrous metals production in 1990.

Q.26 What is value of total metals production of Western of Western Europe in 1988 (million dollars)?

(1) 7730 (2) 7550 (3) 7900 (4) 8300

DIRECTIONS for Q 27 - 13: Each question is followed by two statements A and B. Answer each question using the following instructions.

Choose (1) if the question can be answered by using statement A alone but not by using B alone.
Choose (2) if the question can be answered by using statement B alone but not by using A alone.
Choose (3) if the question can be answered by using both the statements together, but cannot be answered using either statement alone.
Choose (4) if the question cannot be answered even by using both the statements together.

Q.27 What is the ratio of radii of the circumcircle and the incircle of a polygon of 12 sides

(A) The polygon is a regular one of side 8 cm.
(B) One angle measures 150°

Q.28 A newspaper boy has 3 TOI, 2 ET and 3 HT in his bag (kept at random). He takes out 2 newspapers at random, without replacement. Does he retain at least one ET?

(A) He takes out 5 more newspapers at random of which there is at least one TOI, one ET and one HT
(B) He takes out 5 more newspapers at random and there are 2 TOI and 2 HT among them

Q.29 Determine the value of the function $f(x) = a^{\log_a x}$

(A) a is a positive real number such that twice of 'a' is 8 more than 'a' itself

(B) x is 12 less than half of itself

Q.30 If a sequence of numbers $a_1, a_2, a_3, \ldots$ is given by the rule $a_n^2 = a_{n+1}$, does a multiple of 3 appear in the sequence?

(A) a_1 (B) a_n

Q.31 Which of the three bowlers in the series of test matches took most wickets?

(I) The first and the third bowlers took twice as many wickets as the second bowler

(II) The second and the third bowlers took three times as many wickets as the first bowler.

Q.32 What is the price of mangoes per kg?

I. Ten kg of mangoes and two dozens of oranges cost Rs. 252.

II. Two kg of mangoes could be bought in exchange for one dozen oranges.

Q.33 Is $x + y - z + t$ even?

I. $x + y + t$ is even. II. tz is odd.

Q.34 What is the area of the triangle?

I. Two sides are 41 cm each

II. The altitude to the third side is 9 cm long.