

## MAT SOLVED PAPER - DEC 2007

1. A man received Rs. 12000 as Puja Bonus. He invested a part of it at 5% per annum and the remaining at 6% per annum, simple interest being allowed in each case. The total interest earned by him in 4 years is Rs. 2580. The sum invested at 5% per annum is  
 (a) Rs. 4500 (b) Rs. 4000  
 (c) Rs. 7500 (d) Rs. 8000
2. A finance company declares that, at a certain compound interest rate, a sum of money deposited by anyone will become 8 times in three years. If the same amount is deposited at the same compound rate of interest, then in how many year will it become 16 times ?  
 (a) 5 years (b) 4 years  
 (c) 6 years (d) 7 years
3. In an objective examination of 90 questions, 5 marks are allotted for every correct answer and 2 marks are deducted for every wrong answer. After attempting all the 90 questions a student got a total of 387 marks. Find the number of questions that he attempted wrong.  
 (a) 36 (b) 18  
 (c) 9 (d) 27
4. A boatman rows to a place 45 km distant and back in 20 hours. He finds that he can row 12 km with the stream in same time as 4 km against the stream . Find the speed of the stream.  
 (a) 3 km/hr (b) 2.5 km/hr  
 (c) 4 km/hr (d) Cannot be determined
5. Two cyclists start on a circular track from a given point but in opposite directions with speeds of 7 m/sec and 8 m/sec respectively. If the circumference of the circle is 300 metres, after what time will they meet at the starting point ?  
 (a) 100 sec (b) 20 sec  
 (c) 300 sec (d) 200 sec
6. In an objective examination of 90 questions, 5 marks are allotted for every correct answer and 2 marks are deducted for every wrong answer. After attempting all the 90 questions a student got a total of 387 marks. Find the number of questions that he attempted wrong  
 (a) 36 (b) 18  
 (c) 9 (d) 27
7. Ram went to a shop to buy 50 kg of rice. He buys two kinds of rice which cost him Rs. 4.50 per kg and Rs. 5.00 per kg. He spends a total of Rs. 240. What was the quantity of rice bought which cost him Rs. 4.50 per kg.  
 (a) 25 kg (b) 30 kg  
 (c) 20 kg (d) None of these
8. Seema invested an amount of Rs. 16,000 for two years on compound interest and received an amount of Rs. 17,640 on maturity. What is the rate of interest ?  
 (a) 5 pcpa (b) 8 pcpa  
 (c) 4 pcpa (d) Data inadequate
9. My Scooty gives an average of 40 kmpl of petrol. But after recent filling at the new petrol pump, its average dropped to 38 kmpl. I investigated and found out that it was due to adulterated petrol. Petrol pumps add kerosene, which is  $\frac{2}{3}$  cheaper than petrol, to increase their profits. Kerosene generates excessive smoke and knocking and gives an average of 18 km per 900 ml. If I paid Rs. 30 for a litre of petrol, what was the additional amount the pump-owner was making ?  
 (a) Rs. 1.75 (b) Rs. 1.80  
 (c) Rs. 2.30 (d) Rs. 2
10. A train after travelling 150 km meets with an accident and then proceeds at  $\frac{3}{5}$  of its former speed and arrives at its destination 8 hours late. Had the accident occurred 360 km further, it would have reached the destination 4 hours late. What is the total distance travelled by the train ?  
 (a) 960 km (b) 870 km  
 (c) 840 km (d) 1100 km
11. In an engineering college the average salary of all engineering graduates from Mechanical trade is Rs. 2.45 lacs per annum and that of the engineering graduates from Electronics trade is Rs. 3.56 lacs per annum. The average salary of all Mechanical and Electronics graduates is Rs. 3.12 lacs per annum. Find the least number of Electronics graduates passing out from this institute.  
 (a) 43 (b) 59  
 (c) 67 (d) Cannot be determined
12. There are two identical vessels X and Y. Y is filled with water to the brim and X is empty. There are two pails A and B, such that B can hold half as much water as A. One operation is said to be executed when water is transferred from Y to X using B once. If A can hold  $\frac{1}{2}$  a litre of water and it takes 40 operations to equate the water level in X and Y, what is the total volume of water in the system ?  
 (a) 20 litres (b) 10 litres  
 (c) 40 litres (d)  $20\frac{3}{4}$  litres
13. In a class with a certain number of students, if one student weighing 50 kg is added then the average weight of the class increases by 1 kg. If one more student weighing 50 kg is added then the average weight of the class increases by 1.5 kg over the original average. What is the original average weight (in kg) of the class. ?  
 (a) 4 (b) 46  
 (c) 2 (d) 47
14. Rahul can row a certain distance downstream in 6 hours and return the same distance in 9 hours. If the speed of Rahul in still water is 12 km/hr, find the speed of the stream.  
 (a) 2 km/hr (b) 2.4 km/hr  
 (c) 3 km/hr (d) Data inadequate

15. Large, medium and small ships are used to bring water. 4 large ships carry as much water as 7 small ships. 3 medium ships carry the same amount of water as 2 large ships, and 1 small ship. 15 large, 7 medium and 14 small ships each made 36 journeys and brought a certain quantity of water. In how many journeys would 12 large, 14 medium and 21 small ships bring the same quantity ?  
 (a) 32 (b) 25  
 (c) 29 (d) 49
16. A man can row 4.5 km/hr in still water and he finds that it takes him twice as long to row up as to row down the river. Find the rate of the stream.  
 (a) 1.5 km/hr (b) 2 km/hr  
 (c) 2.5 km/hr (d) 1.75 km/hr
17. The work done by a woman in 8 hours is equal to the work done by a man in 6 hours and by a boy in 12 hours. If working 6 hours per day 9 men can complete a work in 6 days, then in how many days can 12 men, 12 women and 12 boys together finish the same work, working 8 hours per day ?  
 (a)  $3\frac{2}{3}$  days (b)  $4\frac{1}{2}$  days  
 (c) 3 days (d)  $1\frac{1}{2}$  days
18. A team of workers was employed by a contractor who undertook to finish 360 pieces of an article in a certain number of days. Making four more pieces per day than was planned, they could complete the job a day ahead of schedule. How many days did they take to complete the job ?  
 (a) 10 days (b) 8 days  
 (c) 9 days (d) 12 days
19. The average monthly salary of employees, consisting of officers and workers, of an organisation is Rs. 3000. The average salary of an officer is Rs. 10,000 while that of a worker is Rs. 2000 per month. If there are total 400 employees in the organisation, find the number of officers.  
 (a) 60 (b) 50  
 (c) 80 (d) 40
20. Two vessels contain mixtures of milk and water in the ratio of 8 : 1 and 1 : 5 respectively. The contents of both of these are mixed in a specific ratio into a third vessel. How much mixture must be drawn from the second vessel to fill the third vessel (capacity 26 gallons) completely in order that the resulting mixture may be half milk and half water ?  
 (a) 12 gallons (b) 14 gallons  
 (c) 10 gallons (d) 13 gallons
21. Amit Kumar got a 4-digit pass code (which is formed out of the digits 0, 1, 2, 3, 4, 5, 6, 7, 8, 9) of his ATM card from ICICI Bank. But after the 50th day he lost the pass code and also forgot the number. How many maximum number of trials may he have to take to get the right number? 0 can be the beginning of the code number.  
 (a) 10! (b)  $10^4$   
 (c)  $9^4$  (d) 9!
22. The length of a ladder is exactly equal to the height of the wall it is leaning against. If the lower end of the ladder is kept on a stool of height 3 m and the stool is kept 9 m away from the wall, the upper end of the ladder coincides with the top of the wall. Then the height of the wall is  
 (a) 15 m (b) 12 m  
 (c) 18 m (d) 11 m
23. If three equal cubes are placed adjacently in a row, then the ratio of the total surface area of the new cuboid to that of the sum of the surface areas of the three cubes will be  
 (a) 5 : 9 (b) 1 : 3  
 (c) 2 : 3 (d) 7 : 9
24. An iron cube of size 10 cm is hammered into a rectangular sheet of thickness 0.5 cm. If the sides of the sheet be in the ratio 1 : 5, then the sides are  
 (a) 20 cm, 100 cm (b) 10 cm, 50 cm  
 (c) 40 cm, 200 cm (d) None of these
25. A portion of a 30 m long tree is broken by a tornado and the top strikes the ground making an angle of  $30^\circ$  with the ground level. The height of the point where the tree is broken is equal to  
 (a) 10 m (b)  $\frac{30}{\sqrt{3}}$  m  
 (c)  $30\sqrt{3}$  m (d) 60 m
26. Fresh grapes contain 80 per cent water while dry grapes contain 10 per cent water. If the weight of dry grapes is 250 kg what was its total weight when it was fresh ?  
 (a) 1000 kg (b) 1125 kg  
 (c) 1225 kg (d) 1100 kg
27. A dealer buys dry fruit at the rate of Rs. 100, Rs 80 and Rs. 60 per kg. He bought them in the ratio 12 : 15 : 20 by weight. He in total gets 20% profit by selling the first two and at last he finds he has no gain no loss in selling the whole quantity which he had. What was the percentage loss he suffered for the third quantity ?  
 (a) 40% (b) 20%  
 (c) 30% (d) 50%
28. A man sitting in a train travelling at the rate of 50 km/hr observes that it takes 9 sec for a goods train travelling in the opposite direction to pass him. If the goods train is 187.5 m long, find its speed.  
 (a) 40 km/hr (b) 25 km/hr  
 (c) 35 km/hr (d) 36 km/hr
29. A train 300 m long is running at a speed of 90 km/hr. How many seconds will it take to cross a 200 m long train running in the opposite direction at a speed of 60 km/hr ?  
 (a)  $7\frac{1}{5}$  (b) 60  
 (c) 12 (d) 20
30. Out of eight crew members three particular members can sit only on the left side. Another two particular members can sit only on the right side. Find the number of ways in which the crew can be arranged so that four men can sit on each side.  
 (a) 864 (b) 865  
 (c) 863 (d) 1728

31. Three pipes are made of different shapes. The cross-sections of the pipes are an equilateral triangle, a hexagon and a circle. The perimeter of each of these cross-sections is equal. The flow through the pipes is proportional to the area of cross-section. If it takes 8 minutes for the triangular pipe to fill up the tank, what will be the difference in the times taken by the hexagonal and circular pipes?  
 (a) 45 seconds (b) 1 minute  
 (c) 0.5 minutes (d) 7.9 minutes
32. The Qutab Minar casts a shadow 150 m long at the same time when the Vikas Minar casts a shadow 120 m long on the ground. If the height of the Vikas Minar is 80 m, find the height of the Qutab Minar.  
 (a) 100 m (b) 180 m  
 (c) 150 m (d) 120 m
33. Due to global recession starting in January, Ram's monthly salary of Rs. 8000 was cut by 10%. The monthly expenses, which were Rs. 6000, increased at the rate of 5% per month. Since which month will he have no savings if the recession lasted for a year?  
 (a) April (b) March  
 (c) May (d) June
34. An oil refinery takes 100 litres of crude oil as input and after refining for 1 hour gives certain amount of output oil X litres. This can be sold in the market at a profit of Rs 30 per litre. If this oil is further refined for  $\frac{1}{2}$  hour it gives oil Y litres. This can be sold at a profit of Rs. 50 per litre. Output and input ratio at both the stages is 90%. The maximum amount that can be earned from 1000 litres of crude input is  
 (a) Rs. 30,000 (b) Rs. 27,000  
 (c) Rs. 40,000 (d) Rs. 40,500
35. A mixture (40 litres) contains tonic and water in the ratio 3 : 1 to make the ratio 5 : 1, how much additional amount of water is required?  
 (a) 5 litres (b) 4 litres  
 (c) 3 litres (d) 2 litres
36. If 11,109,999 is divided by 1111, then what is the remainder?  
 (a) 1098 (b) 11888  
 (c) 1010 (d) 1110
37. If an angle of a triangle remains unchanged but each of its two including side is doubled, then by what factor does the area get multiplied?  
 (a) 2 (b) 3  
 (c) 4 (d) 6
38. A number when divided by 765 leaves a remainder 42. What will be the remainder if the number is divided by 17?  
 (a) 8 (b) 7  
 (c) 6 (d) 5
39. If m and n are natural numbers such that  $2^m - 2^n = 960$ , what is the value of m?  
 (a) 10 (b) 12  
 (c) 16 (d) Cannot be determined
40. The radius of a cylindrical cistern is 10 metres and its height is 15 metres. Initially the cistern is empty, we start filling the cistern with water through a pipe whose diameter is 50 cm, water is coming out of the pipe with a velocity of 5 m/s. How many minutes will it take in filling the cistern with water?  
 (a) 20 (b) 40  
 (c) 60 (d) 80

## LOGICAL REASONING

**Directions (41-43) :** These questions are based on the statements given below.

Madhu and Shivani are good in Dramatics and Computer Science. Asha and Madhu are good in Computer Science and physics. Asha, Pratibha and Namita are good in physics and History. Namita and Asha are good in Physics and Mathematics. Pratibha and Shivani are good in History and Dramatics.

41. Who is good in Physics, History and Mathematics, but not in Computer Science?  
 (a) Pratibha (b) Asha  
 (c) Madhu (d) Namita
42. Who is good in History, Physics, Computer Science and Mathematics?  
 (a) Namita (b) Asha  
 (c) Madhu (d) Pratibha
43. Who is good in Physics, History and Dramatics?  
 (a) Pratibha (b) Madhu  
 (c) Shivani (d) Asha

**Directions (44-46) :** Read the following information to answer these questions.

Four friends A, B, C and D are Studying together in class 10+2. A and B are good in Hindi but poor in English. A and C are good in Sanskrit but poor in Geography. D and B are good in Maths as well as Sanskrit.

44. Who amongst the following friends is not good in Maths but good in Hindi?  
 (a) C (b) A  
 (c) D (d) B
45. Which of the following pairs of friends is good both in English and Sanskrit?  
 (a) A and D (b) A and C  
 (c) C and D (d) D and B
46. Which one of the following friends is good in Sanskrit but poor in Geography?  
 (a) A (b) D  
 (c) C (d) B

**Directions (47-49) :** Read the given information to answer the following questions.

Mohan Dey is undecided which four movies to see this week. He is considering a spy thriller, a number mystery, a comedy and a science fiction. The movies will be shown by TV channels STAR, SONY, B4U and HBO, not necessarily in that order, and telecast on Tuesday, Wednesday, Saturday and Sunday, not necessarily in that order.

The movies by STAR will be shown on Sunday. The spy thriller will be shown on Tuesday. The science fiction movies are shown by B4U and not telecast on Saturday. The comedy is shown by HBO channel.

47. On Wednesday Mohan Dey can watch
  - (a) the science fiction movie
  - (b) the murder mystery
  - (c) the spy thriller
  - (d) the comedy
48. The TV channel SONY will telecast
  - (a) a comedy on Saturday
  - (b) a science fiction movie on Saturday
  - (c) a murder mystery on Tuesday
  - (d) a spy thriller on Tuesday
49. Mohan Dey watched movies on two channels whose names come first and third in the alphabetical order he did not watch.
  - (a) the movie shown on Wednesday
  - (b) the murder mystery
  - (c) the science fiction movie
  - (d) the movie shown on Saturday

**Directions (50-52) :** Read the following information to answer these questions.

Six books are kept one on top of the other. The History books is just above Accounting. The Maths books is between Punjabi and Urdu. English is between History and Punjabi.

50. Which book is between the Math and English books ?
  - (a) Accountancy
  - (b) History
  - (c) Urdu
  - (d) None of these
51. Which book is at the bottom ?
  - (a) Accountancy
  - (b) Punjabi
  - (c) Urdu
  - (d) Cannot be determined
52. Which book is at the top ?
  - (a) Punjabi
  - (b) Urdu
  - (c) Accountancy
  - (d) Cannot be determined

**Directions (53-55) :** In each of these questions, two statements A and B are given followed by two conclusions I and II. Consider both the statements to be true even if they seem to be at variance from commonly known facts. Decide which of the given conclusions is/ are definitely drawn from the given statements. Mark answer as

- (a) if only II follows.
- (b) if only I follows.
- (c) if neither I nor II follows.
- (d) if both I and II follow.

53. **Statements :**

- A. If there is shortage in the production of onions, the price of onions will go up.
- B. Price of onions has gone up.

**Conclusions :**

- I. There is shortage in the production of onions.
- II. Onions were exported.

54. **Statements :**

- A. If all players play to their full potential, we will win the match.
- B. We have won the match.

**Conclusions :**

- I. All players played to their full potential.
- II. Some players did not play to their full potential.

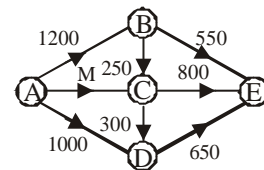
55. **Statements :**

- A. Some businessmen are rich.
- B. Soman is rich.

**Conclusions :**

- I. Soman is a businessman.
- II. Soman has big farm.

**Directions (56-58):** Answer these questions based on the figure which represents the flow of natural gas through pipelines across major cities A, B, C, D and E (in suitable units). Assume that supply equals demand.



56. What is the number of units demanded in B ?
  - (a) 400
  - (b) 350
  - (c) 450
  - (d) 500
57. If the number of units demanded in C is 225, what is the value of M ?
  - (a) 875
  - (b) 1075
  - (c) 775
  - (d) 850
58. If the total demand in E is 80% of the demand in A, what is the demand in A ?
  - (a) 2400
  - (b) 2500
  - (c) 4500
  - (d) None of these

**Directions (59-61) :** Read the information given below to answer these question.

Six persons A, B, C, D, E and F are going by a car to see Agra. In this group, there are three journalists, a professor and a doctor. In the group, there are two married couples. No man in the group is professor and a doctor. 'F' is a sick man and he lives with his married son 'C'. Among the three journalists, husband of 'D' who looks after his sick father earns more than 'E', who in turn gets more pay than 'B'. Sister of 'E' gets less pay than her husband 'B' but not more than 'A'.

59. Who is the professor in the group?  
 (a) B (b) A  
 (c) C (d) Cannot be determined
60. Which of the following is a pair of ladies?  
 (a) A, C (b) A, D  
 (c) A, B (d) Cannot be determined
61. Who among the following earns the least ?  
 (a) B (b) A  
 (c) C (d) D

**Directions (62-66):** Each of these consists of question and two statements numbered A and B. Decide whether the data provided in the statement(s) are sufficient/necessary to answer the question. Mark answer as

- (a) If the data in statement B alone are sufficient to answer the question while the data in statement A alone are not sufficient to answer the question.  
 (b) If the data in statement A alone are sufficient to answer the question, while the data in statement B alone are not sufficient to answer the question.  
 (c) If the data either in statements A alone or in statement B alone are sufficient to answer the question.  
 (d) If the data in both the statements A and B together are not sufficient to answer the question.
62. What is the rate of the compound interest?  
 A. A certain amount invested at the compound interest rate amounts to Rs. 1331.  
 B. The amount was invested for a period of three years.
63. What is the present age of the mother ?  
 A. Father's age is eight years more than the mother's age. Father got married at the age of 28 years.  
 B. Present age of the father is 30 years. Four years back the ratio of mother's age to father's age was 12 : 13.
64. How many boys are there in the class ?  
 A. The class has total 45 children and ratio of boys to girls is 4 : 5.  
 B. The ratio of girls to boys is 4 : 5 and boys are nine more than the girls.
65. What is the difference between the two digits in a two digit number ?  
 A. The sum of the two digits is 8.  
 B.  $\frac{1}{5}$  of that number is 15 less than  $\frac{1}{2}$  of 44.
66. How much minimum marks will be required to pass an examination?  
 A. Student A secured 32% marks in that examination and he failed by 1 mark. Student B secured 36% marks in the same examination and his marks were 1 more than the minimum pass marks.  
 B. Student A secured 30% of full marks in the examination and he failed by 2 marks. If he had secured 5 more marks his percentage of marks would have been 40%.

**Directions (67-69):** In each of these questions a few statements are followed by four conclusions numbered I, II, III and IV. Consider the given statements to be true even if they seem to be at variance with commonly known facts. Read all the conclusion(s) and then decide which of the given conclusion(s) logically follow(s) from the given statements.

67. **Statements:**  
 A. All mirrors are phones.  
 B. Some phones are gadgets.  
 C. All gadgets are mirrors.  
**Conclusions :**  
 I. Some gadgets are phones.  
 II. Some gadgets are mirrors.  
 III. Some gadgets are not mirrors.  
 IV. Some mirrors are phones.  
 (a) Only I and II follow  
 (b) None follows  
 (c) Only II and II follow  
 (d) Either II or IV follow

68. **Statements :**  
 A. All rackets are jackets.  
 B. No cow is cat.  
 C. Only cats are dogs.  
**Conclusions :**  
 I. Some rackets are not cats  
 II. Some cats are jackets.  
 III. Some rackets are cats.  
 IV. No dog is a cow.  
 (a) Only II and IV follow  
 (b) Only either I or III and IV follow  
 (c) Only III and IV follow  
 (d) Only I and IV follow

69. **Statements :**  
 A. All stairs are lifts.  
 B. No lift is an escalator.  
 C. Some escalators are helicopters.  
 D. Some lifts are planes.  
**Conclusions :**  
 I. No stairs is an escalator.  
 II. Some helicopters are not escalators.  
 III. Some stairs are planes.  
 IV. Some helicopters are escalators.  
 (a) Only I and IV follow  
 (b) Only I and either II or IV follow  
 (c) Either II or IV follows  
 (d) Only I, III or IV follow

**Directions (70-72):** Each of the following incomplete arguments is followed by four sentences. One of the four alternatives (a), (b), (c) and (d) completes the argument in order to justify the conclusion, Pick that out.

70. Man learns through experience as he has initiative by nature  
 (a) All who have initiative by nature learn through experience.  
 (b) Some who have initiative by nature learn through experience  
 (c) None who has initiative by nature learns through experience.  
 (d) Only few with initiative learn through experience.

71. We now have to fight for peace with some courage and determination as we fought against aggression.  
 (a) All those who have fought against aggression should fight for peace.  
 (b) Many are fighting for peace who have fought against aggression.  
 (c) Some who are fighting for peace have fought against aggression.  
 (d) None is fighting for peace who have fought for aggression.
72. Education has produced a vast population able to read but unable to distinguish what is worth reading  
 (a) All educated people can distinguish worth reading materials.  
 (b) Many educated people cannot distinguish worth reading materials.  
 (c) As much as educated people are there, it is easy to distinguish worth reading materials.  
 (d) All those who are educated cannot distinguish the materials worth reading.

**Directions (73-75):** Each question has a main statement, followed by four statements labelled A, B, C and D. Choose the ordered pair of statements where the first statement implies the second, and the two statements are logically consistent with the main statement

73. Every player will become a champ.  
 A. Rajesh is a player.  
 B. Rajesh will become a champ.  
 C. Rajesh is not a player.  
 D. Rajesh will not become a champ.  
 (a) DA (b) AD  
 (c) CD (d) DC
74. You can find Chinese toys only in china.  
 A. I didn't find Chinese toys.  
 B. I found Chinese toys.  
 C. I went to the fair.  
 D. I didn't go to China.  
 (a) CB (b) CD  
 (c) CA (d) AD
75. Only in Africa, can you see the African elephant  
 A. You went to Africa.  
 B. You didn't go to Africa.  
 C. You saw the African elephant.  
 D. You didn't see the African elephant.  
 (a) DB (b) AC  
 (c) AD (d) BD
77. Rama remembers that she met her brother on Saturday, which was after the 20th day of a particular month. If the 1st day of that month was Tuesday, then on which date did Rama meet her brother ?  
 (a) 24th (b) 23rd  
 (c) 25th (d) None of these
78. Introducing Rajesh, Neha said, his brother's father is the only son of my grandfather, How is Neha related to Rajesh ?  
 (a) Daughter (b) Sister  
 (c) Mother (d) Niece
79. A directional post is erected on a crossing. In an accident, it was turned in such a way that the arrow which was first showing east is now showing south. A passerby went in a wrong direction thinking it is west. In which direction is he actually travelling now ?  
 (a) North (b) South  
 (c) East (d) West
80. There are eight poets A, B, C, D, E, F, G and H. A, B, C and D are medieval poets whereas E, F, G and H are modern poets. Questions on modern poets and medieval poets are set in the question paper every alternate year. Among the modern poets, question-setters who like E also like F and those who like G also like H. The question-setter has written a book on F and so he does not like to ask any question on F. Last year there was a question on A. On which poet will be the probable question this year ?  
 (a) F (b) E  
 (c) D (d) C
81. There are five books A, B, C, D and E. Book C lies above D. Book E is below A; D is above A; B is below E. Which is at the bottom ?  
 (a) B (b) E  
 (c) A (d) C
82. A one -rupee coin is placed on a plain paper. How many coins of the same size can be placed round it so that each one touches the central and adjacent coins ?  
 (a) 3 (b) 4  
 (c) 7 (d) 6
83. After a get-together every person present shakes the hand of every other person. If there were 105 hands shakes in all, how many persons were present in the party?  
 (a) 14 (b) 13  
 (c) 15 (d) 16
84. In a queue I am the last person while my friend is seventh from the front. If the person exactly between me and my friend is on the 23rd position from the front, what is my position in the queue ?  
 (a) 37 (b) 36  
 (c) 38 (d) 39
85. A cube is to be coloured in such a way as to avoid the same colour on adjacent surfaces. What is the minimum number of colours you will require ?  
 (a) Four (b) Three  
 (c) Six (d) Nine

**Directions (76-78):** Answer these questions independent of each other .

76. From a point, Rajneesh started walking towards east and walked 35 m. He then turned towards his right and walked 20 m and he again turned right and walked 35 m. Finally he turned to his left and walked 20 m and he reached his destination. Now, how far is he from his starting point ?  
 (a) 55 m (b) 50 m  
 (c) 20 m (d) 40 m

86. Ram's age was square of a number last year and it will be cube of a number next year. How long must he wait before his age is again the cube of a number ?  
 (a) 10 years (b) 39 years  
 (c) 38 years (d) 64 years
87. An office has as many four-legged chairs and as many four-legged tables as workers, and as many three-legged stools as four-legged almirahs. If the number of stools be one more than the number of workers and the total number of legs be 585, the number of workers in the office are ?  
 (a) 17 (b) 34  
 (c) 16 (d) Cannot be determined
88. A, B, C and D play a game of cards. A says to B. 'If I give you 8 cards, you will have as many as C has and I shall have 3 less than what C has. Also if I take 8 cards from C, I shall have twice as many as D has. If B and D together have 50 cards, how many cards has A got ?  
 (a) 27 (b) 23  
 (c) 37 (d) 40

## ENGLISH

**Directions (89-92):** Each of these questions has an underlined part. Choose the option that best replaces the underlined part. Answer option (2) repeats the original.

89. The political masters of the health care system have not listened to professional health planners because it has not been profitable for them to do that thing.  
 (a) has not been profitable for them to do so.  
 (b) has not been profitable for them to do that thing.  
 (c) has been unprofitable for them to do that thing.  
 (d) has been unprofitable for them to do so.
90. Most bacterial population grown in controlled conditions will quickly expand to limit the food supply, produce toxic waste products that inhibit further growth, and reached the equilibrium state within a relatively short time.  
 (a) Will have produced toxic waste products that inhibit further growth and also will reach an equilibrium state within a relatively short time.  
 (b) Produce toxic waste products that inhibit further growth, and reached the equilibrium state within a relatively short time.  
 (c) Will then produce a toxic waste product that inhibits further growth and thus reached an equilibrium state in a very short time.  
 (d) Produce toxic waste products that inhibit further growth and reach equilibrium .
91. It could be argued that the most significant virtue of a popular democracy is not the right to participate in the selection of leaders, but rather that it affirms our importance in the scheme of things.  
 (a) but rather is affirmation of  
 (b) but rather that it affirms  
 (c) but rather it's affirmation in terms of  
 (d) but instead of that, its affirming that

92. Long popular among the connoisseurs of Indian music, Ravi Shankar first impressed western listeners with his phenomenal technical virtuosity, but they soon came to appreciate his music as an artful expression of an older culture's musical insight.  
 (a) but it soon occurred that they appreciated his artful music as an  
 (b) but they soon came to appreciate his music as an artful  
 (c) but soon this was surpassed by an appreciation of it as an artful  
 (d) which was soon surpassed by an even deeper appreciation of it as an artful

**Directions (93-96) : Fill in the blanks.**

93. Professionals focus their ..... on fulfilling their responsibilities and achieving results, not on ..... a particular image.  
 (a) leadership - attributing  
 (b) planning - devising  
 (c) abilities - contributing  
 (d) energies - portraying
94. When you are living with your ..... values and principles, you can be straightforward, honest and .....  
 (a) inherited - distinct (b) core -up-front  
 (c) innate - durable (d) cultural - perceptive
95. In the role of a counsellor, you are an authority figure whose objective is to ..... attentively and sensitively to employees who ..... you with their feelings.  
 (a) manage - direct (b) projects - focus  
 (c) listen - trust (d) concentrate - believe
96. If a junior executive neglects his professional development and ..... education, he can easily and quickly become obsolete in a world changing at ..... rates.  
 (a) higher - vulnerable (b) management - voluminous  
 (c) better - supreme (d) continuing - dizzying

**Directions (97-100): Each question has a group of sentences marked A, B, C, and D. Arrange these to form a logical sequence.**

97. A. We tend to see the similarity within a category as being more important, and the similarity between different categories as being less important, that either actually is.  
 B. Given a small amount of information about a person, we are ready to classify them as a member of a particular group, and then to infer all kinds of additional facts about them, as if all members of the group were the same in most respects.  
 C. Our tendency to classify and label everything can lead us into the error of seeing the world as made up of only those categories for which we have names.  
 D. Expecting too much of the descriptive power of languages is itself a serious cause of distorted thinking.  
 (a) DCBA (b) DBAC  
 (c) BDAC (d) BCDA

98. A. Some of us, as a result, gain an overall impression of people as either all good or all bad, making further assumptions on this basis.  
 B. An example of the assumption some patients make that doctors with a good “bedside manner” are also more technically competent as others who do not relate as well to their patients.  
 C. This is what the psychologists refer to as halo effect.  
 D. We have a strong tendency of associate positive attributes with other positive attributes and negative ones with each other.  
 (a) DCBA (b) DABC  
 (c) DBCA (d) DACB
99. A. In the past, the customized tailoring units were localized to the township or city and catered exclusively to domestic demand.  
 B. Traditionally, Indian preferred custom made clothing and the concept of ready to wear is a relatively recent one.  
 C. Consumer awareness of styling issues and the convenience afforded by ready to wear helped the RMG industry makes small inroads into the domestic market in the 1980s.  
 D. The customized tailoring outfits have always been a major source of clothing for domestic market.  
 (a) BDAC (b) BCDA  
 (c) CDBA (d) DBAC
100. A. Participation involves more than the formal sharing of decisions.  
 B. Through anticipation, individuals or organizations consider trends and make plans, shielding institutions from trauma of learning by shock.  
 C. Innovative learning involves both anticipation and participation.  
 D. It is an attitude characterized by the co-operation, dialogue and empathy.  
 (a) ABCD (b) BCDA  
 (c) CBAD (d) DABC
102. Throughout the first decade of the 21st century, net increases in Indian direct investments in the Far East (funds outflows) exceeded net new Far East direct investment in India. Each of the following, if true, could help to account for this trend except  
 (a) Labour mobility was higher in India than in the Far East.  
 (b) Land values in the Far East were increasing at a faster rate than in India.  
 (c) The cost of labour (wages) was consistently lower in the Far East than in India.  
 (d) Corporate liquidity was lower in India than in the Far East.
103. Of the world’s largest AIDS cases countries in 2010, three had the same share of world AIDS patients as they had in 2000. These three countries may serve as examples of countries that succeeded in holding steady their share of the AIDS disease. Which of the following, if true, would most seriously undermine the idea that these countries serve as examples as described above ?  
 (a) Countries should strive to reduce their share of the total AIDS patient in the world, rather than try to hold it constant.  
 (b) Of the three countries two had a much larger share of world AIDS incidence in 2000 than in 2010.  
 (c) The three countries have different rates of population growth.  
 (d) None of these
104. The cost of housing in many urban parts of India has becomes so excessive that many young couples, with above-average salaries, can only afford small apartments. EMI and rent commitments are so huge that they cannot consider the possibility of starting a family since a new baby would probably mean either the mother or father giving up a well-paid position - something they can ill afford. The lack of or great cost of child-care facilities further precludes the return of both parents to work. Which of the following adjustments could practically be made to the situation described above which would allow young couples to improve their housing prospects ?  
 (a) Encourage couples to have one child only.  
 (b) Encourage couples to remain childless.  
 (c) Encourage young couples to move to cheaper areas for living.  
 (d) None of these is likely to have an impact on the current situation.

**Directions (101-104): Attempt these questions independent of each other.**

101. Many of the junk foods on the market today, doughnuts, burgers and pizza, have less nutrients than natural foods, which were dominant a decade or two ago. Many nutritionists claim that pizza and doughnuts give less nourishment than natural foods. A spokesman of a leading junk food company - Pizza House - stated recently that an examination of grade school students shows less nutritional deficiency than in their parents’ time. Hence, junk foods are not as bad as made out to be. Which of the following, if true would tend to strengthen the view of the spokesman?  
 (a) Fewer junk foods were available to the parents.  
 (b) Grade school children reported eating no breakfast at all.  
 (c) Adults claim to eat junk foods as well as natural foods.  
 (d) Both (1) and (3)



**Directions (105-108): Each of these questions has sentence with four alternatives. Choose the alternative which best conveys the content of the given sentence correctly.**

105. No officer had ought to be put into situation where he has to choose between his love for his family and the responsibilities accompanying his duty.
- (a) No officer had ought to be put into a situation in which he has to choose between his love for his family and the responsibilities accompanying his duty.
- (b) No officer had ought to be put into a situation where he has to choose between his love for his family and the responsibilities accompanying his duty.
- (c) No officer should be put into a situation where he has to choose between his love for his family and the responsibilities accompanying his duty.
- (d) No officer ought to be put into a situation in which he has to choose between his love for his family and the responsibilities accompanying his duty.
106. Being a realist, the detective could not accept the statement of the accused that UFOs had caused the disturbance.
- (a) Since he was a realist, the detective could not accept the statement of the accused that UFOs had caused the disturbance.
- (b) Being a realist the detective could not accept the statement of the accused that UFOs had caused the disturbance.
- (c) Being that he was a realist, the detective could not accept the statement of the accused that UFOs had caused the disturbance.
- (d) Realist that he was, the detective could not accept the statement of the accused that UFOs had caused the disturbance.
107. Ever since the sting operation, there has been much opposition from they who maintain that it was an unauthorised act.
- (a) Ever since the sting operation, there has been much opposition from they who maintain that it had been an unauthorised act.
- (b) ever since the sting operation, there has been much opposition from they who maintain that it was an unauthorised act.
- (c) Ever since the sting operation, there has been much opposition from they who maintain that it was an unauthorised act.
- (d) Ever since the sting operation , there has been much opposition from those maintaining that it was an unauthorised act.
108. The trend toward a decrease in the working hours is already evident in the longer weekend given to employees in many multinational organisations.
- (a) The trend toward a decrease in the working hours is all ready evident in the longer weekend given to employees in many multinational organisations.
- (b) The trend toward a decrease in the working hours is already evident in the longer weekend given to employees in many multinational organisations.

(c) The trend toward decrease in the working hours is already evident in the longer weekend given to employees in many multinational organisation.

(d) The trend toward a decrease in the working hours is all in already evident in the longer weekend given to employees in many multinational organisations.

**Directions (109-124): Read the passages to answer the questions that follow each passage.**

### PASSAGE - I

“Since wars begin in the minds of men,” So runs the historic UNESCO Preamble, “It is in the minds of men that the defences of peace must be constructed.” Wars erupt out when the minds of men are inflamed, when the human mind is blinded and wounded, succumbs to frustration and self-negation. War is the transference of this self-negation into the other-negation. The three Indo-Pak wars and the persisting will to terrorise have emanated from this savage instinct of other-negation that is the legacy of the partition carnage and its still-bleeding and unhealed wound. Truncated from its eastern wing in 1971, Pakistan ever since has suffered from a sense of total existential self-negation. Plus the scars left the two previously lost wars to India and Kargil fill the Army and the Pakistan psyche with a seething urge to revenge : that India has to be negated, destroyed - in a deep psychological sense, another Hiroshima in the subcontinent is imaginable and possible. Terrorism in Kashmir springs from such deep negating existential grounds. Like the former Soviet Union, Pakistan came into being as a result of a grand delusion and massive perversion of reality - the so called two-nation theory. Like the former Soviet Union, it stands in danger of crumbling unless it modifies its reality perception and comes to terms with its post-Bangladesh identity within the prevailing subcontinental equation. Failing this, Pakistan is bound to break up, nudging the region to a nuclear nightmare, including possible South Asian Hiroshimas. With ‘hot pursuits’ and ‘surgical operations’ freely making rounds among the policy elite and the public at large, the national atmosphere looks ominously charged. “On the brink,” headlines The week adding, “As men and machines are quickly positioned by India and Pakistan, the threat of war looms real”. To which Gen. Musharraf counters, “If any war is thrust on Pakistan, Pakistan’s armed forces and the 140 million people of Pakistan are fully prepared to face all consequences with all their might.” According to Indian Express, “Pakistan has deployed medium range ballistic missile batteries (MRBBs) along the line of Control (LOC) near Jammu and Poonch sectors in an action that will further escalate the tension between the two countries.” And India’s Defence Minister ups the ante, “We could take a (nuclear) strike, survive and then hit back, Pakistan would be finished.” (Hindustan Times, December 30, 2001) Mr. Fernandes’s formulation is certainly a tactical super shot, even a strategical super hit in as much as this is the very logic of India’s ‘No-

first-strike' doctrine. The Defence Minister obviously has no idea of the ethical, phenomenological implications of abandoning chunks of the Indian population to ransom for potential Hiroshimas and then 'finishing' the neighbouring country of 140 million in what could be nothing short of an Armageddon. Forget these horrendous scenarios. But does this not repudiate the grain of truth for which India's civilisation stood for and vindicated across the untold millennia of its history? Yet, Mr. Fernandes, the pacifist and Gandhian, is no warmonger. As Defence Minister he had to react at a level with the Pakistanis, with their proclivity to drop the nuclear speak when ever that suited them, could have registered the message.

109. According to the passage, Pakistan is bound to disintegrate
- I. and it will throw the subcontinent into a nuclear backlash.
  - II. if it refuses to accept its present identity.
  - III. if it does not stop fuelling terrorism in Kashmir.
- (a) II and III are correct
  - (b) I, II and III are correct
  - (c) I and II are correct
  - (d) I and III are correct
110. It can be inferred from the passage that
- (a) Soviet Union crumbled as a result of the grand delusion of the two nation theory.
  - (b) Soviet Union also came into being as a result of the two nation theory.
  - (c) Soviet Union's disintegration was due to her failure to accept the reality.
  - (d) The ideological basis of creation of Soviet Union and Pakistan was the same.
111. According to the passage, the reason for terrorism in Kashmir is
- (a) Pakistan's perception of two-nation theory.
  - (b) Pakistan's blind faith in terrorism.
  - (c) Pakistan's sense of self-negation.
  - (d) Both (2) and (3)
112. According to the passage, all of the following about the defence minister are not true, except
- (a) He is not a Gandhian.
  - (b) He is not logical.
  - (c) He is a pacifist
  - (d) He is not a warmonger.

### PASSAGE - II

Not even a three-day brainstorming session among top psychologists at the Chinese University could unravel one of the world's greatest puzzles - how the Chinese mind ticks. Michael Bond had reason to pace the pavement of the Chinese University campus last week. The psychologist who coordinated and moderated a three-day seminar in Chinese psychology and most of the participants came a long way to knock heads. "If a bomb hits this building" muttered Bond, half-seriously, "It would wipe out the whole discipline." But the only thing that went off in the Cho Yiu Conference Hall

of Chinese University was the picking of brains, the pouring out of brains and a refrain from an on-going mantra: "more work needs to be done" or "we don't know". Each of the 36 participants was allowed 30 minutes plus use of an overhead projector to condense years of research into data and theories. Their content spilled over from 20 areas of Chinese behaviour, including reading, learning styles, psychopathology, social interaction, personality and modernisation. An over-riding question for observers, however, was why, in this group of 21 Chinese and 15 non-Chinese, weren't there more professionals from mainland China presenting research on the indigenous people? Michael Philips, a psychiatrist who works in Hubei province, explained: "The Cultural Revolution silenced and froze the research," said the Canadian-born doctor who has lived and worked in China for more than 10 years. "And 12 years later, research is under way but it is too early to have anything yet. Besides, most of the models being used are from the West anyway." In such a specialised field, how can non-Chinese academics do research without possessing fluency in Chinese? Those who cannot read, write or speak the language usually team up with Chinese colleagues "In 10 years, we won't be able to do this. It's a money thing," said William Gabrenya of Florida Institute of Technology, who described himself as an illiterate Gweilo who lacks fluency in Chinese. He said that 93 per cent of the non-Chinese authors in his field cannot read Chinese. Dr. Gabrenya raised questions such as why is research dependent on university students, why is research done on Chinese people in coastal cities (Singapore, Taiwan, Shanghai and Hong Kong) but not inland? "Chinese psychology is too Confucian, too neat. He's been dead a long time. How about the guy on motorcycle in Taipei?" Dr. Gabrenya said, urging that research have a more contemporary outlook.

The academics came from Israel, Sweden, Taiwan, Singapore, United states, British Columbia and, of course, Hong kong. Many of the visual aids they used by way of illustration contained eye-squinting type and cobweb-like graphs. One speaker, a sociologist from Illinois, even warned her colleagues that she would not give anyone enough time to digest the long, skinny columns of numbers. Is Chinese intelligence different from Western? For half of the audience who are illiterate in Chinese, Professor Jimmy Chan of HKU examined each of the Chinese characters for "intelligence". Phrases such as "a mind as fast as an arrow" and connections between strokes for sun and the moon were made. After his 25-minute speech, Chan and the group lamented that using Western tests are the only measure available to psychologists, who are starving for indigenous studies of Chinese by Chinese. How do Chinese children learn? David Kember of Hong Kong Polytechnic University zeroed in on deep learning versus surface. Deep is when the student is sincerely interested for his own reasons. Surface is memorising and spitting out facts. It doesn't nurture any deep understanding. If the language of instruction happens to be the children's second language, students in Hong Kong

have all sorts of challenges with English-speaking teachers from Australia, Britain and America with accents and colloquialisms. Do Westerners have more self-esteem than Chinese? Dr. Leung Kwok, chairman of the psychology department of Chinese University, points his finger at belief systems: the collectivist mind-set often stereotypes Chinese unfairly. The philosophy of "yuen" (a concept used to explain good and bad events which are predetermined and out of the individual's control) does not foster a positive self-concept. Neither do collectivist beliefs, such as sacrifice for the group, compromise and importance of using connections. "If a Chinese loses or fails, he has a stronger sense of responsibility. He tends to blame it on himself. A non-Chinese from the West may blame it on forces outside himself," Dr. Leung said. By the end of the three-day session, there were as many questions raised as answered. It was agreed there was room for further research. To the layman, so much of the discussion was foreign and riddled with jargon and on-going references to studies and researchers. The work of the participants will resurface in a forthcoming Handbook of Chinese Psychology, which will be edited by Dr. Bond and published by Oxford University Press.

- (c) It is difficult to measure Chinese intelligence with western tests.  
 (d) More tests are required that are conducted by the Chinese for the Chinese

### PASSAGE -III

After President George W. Bush signed the United States - India Nuclear Cooperation Bill, he called up Prime Minister Manmohan Singh to tell him how pleased he was at this development. While welcoming this event, the Prime Minister took the opportunity to tell the President that there remained areas of concern that needed to be addressed during the negotiation of the bilateral agreement (called the 123 agreement, after the relevant clause number in the U.S. Atomic Energy Act, 1954). The U.S. has entered into some twenty five I 23 agreements with various countries, including the one concerning Tarapur. The Tarapur agreement concluded in 1963 was unique in that it guaranteed supplies of enriched uranium fuel from the U.S. for running the Tarapur reactors for their entire life. However, after 1978 the U.S. did not supply fuel saying its domestic legislation (under the Nuclear Non-Proliferation Act) prevented it from doing so. India argued that Tarapur was an inter-governmental agreement and hence it had to be honoured by the U.S. But to no avail. However, later, the U.S. allowed France to supply fuel to India. Subsequently, the USSR (now Russia) and even China supplied fuel for Tarapur. The lesson from the Tarapur episode is that U.S. breached with impunity even a cast-iron guarantee it had furnished. Considerable bitterness between the U.S. and India are extended to many other areas beyond the nuclear one. When India agreed, reluctantly, in March 2006 to put imported reactors under "safeguards in perpetuity", the U.S. consented to the Indian insistence on assurances of fuel supply. This meant India could build up a stockpile of fuel to tide over disruption in supply and the U.S. would agree to work with other countries namely Russia, France, and Britain to arrange alternate supplies. The U.S. legislation, based on the Hyde Bill, forbids India building up a stockpile of nuclear fuel. It also obligates the U.S. administration to work with other Nuclear Supplier Group countries to get them to suspend supplies to India, if the U.S. has done so under some provision of the Hyde Bill. It is not evident how the U.S. can address the legitimate concerns of India on continued fuel supply, given the boundaries set by the Hyde Bill. With regard to future nuclear tests, the Prime Minister has said, India is only committed to a voluntary moratorium. The moratorium is only a temporary holding off of an activity, conditioned by specific circumstances that obtained at the time when such a declaration was made. It cannot be construed as a permanent ban. The Hyde Bill has sought to make the moratorium into a permanent ban. However, there is no such restraint imposed on the U.S., China, Pakistan or any other country. In bringing up this issue, I do not wish to suggest that I favour a resumption of tests by India. But India cannot prevent other countries from carrying out tests. It is, therefore, unacceptable that India forfeits its right to test for all time to come under the agreement with the U.S. Even if the 123

113. According to the passage the author suggests that
- not many people study Chinese psychology.
  - the building is in danger of attack.
  - Chinese psychology is a difficult subject to study.
  - Chinese psychology is a difficult subject to organize.
114. It can be inferred from the passage that
- the Cultural Revolution was a productive period for Chinese psychology.
  - the Cultural Revolution was a dangerous period for Chinese psychology.
  - the Cultural Revolution was an unproductive period for Chinese psychology.
  - the Cultural Revolution was a new beginning for Chinese psychology.
115. According to the passage, William Gabrenya refers to himself as an 'illiterate gweilo'. This suggests that
- he feels defensive about not speaking and reading Chinese.
  - he feels secure in his illiteracy.
  - he is representative of other westerners active in this field.
  - he can operate perfectly well without learning Chinese.
116. According to the passage, all of the following are true except
- the visual aids were not very easy to understand.
  - the conference attracted a very professional standard of presentation.
  - the visual aids were not very tidy.
  - the presenters were under time pressure.
117. According to the passage which of the following is not true?
- Chinese characters are very difficult for westerners to master.
  - It is difficult to come to a conclusion about western and Chinese intelligence.

agreement is silent on the issue, Indian negotiators must put this issue on the table. The Hyde Bill calls for suspension of all cooperation and fuel supplies and even calls for return of all equipment and materials supplied earlier in the event of a test. It baffles one how India can return reactor installations that might have been operated a few years, were such a contingency to arise in future. The differences over the definition of “full civilian nuclear cooperation” have been discussed in the media. The Indian understanding was that reprocessing of spent fuel, enrichment of uranium, and production of heavy water also formed part of the term “full civilian nuclear cooperation.” In the congressional debate, it has been noted that these were construed by the U.S. to be in the nature of military activities and not civilian. India’s future plans for thorium utilisation for civil nuclear power depend crucially on reprocessing. Similarly, civil nuclear power units using natural uranium require heavy water as reactor coolant and moderator. Equally if India were to embark on a sizeable light water reactor programme, it may like to have control on supply of enriched uranium for economic and supply security reasons. India has technologies of its own in these areas and will develop them further in the years ahead. If the Indo-U.S. agreement moves ahead in the manner its sponsors have speculated, in a few decades from now some 90 per cent of the nuclear installations in India would be open to International Atomic Energy Agency inspections. In that scenario, how can India reconcile to the embargo from nuclear advanced countries on the export of enrichment, reprocessing, and heavy water technologies? Even if the issue were to be papered over new, it will then look from India’s point of view to have been a very bad bargain.

118. What is the Indian understanding of the definition of “full civilian nuclear cooperation”?
- Enrichment of uranium
  - Reprocessing of spent fuel
  - Production of heavy water
  - All the above
119. With reference to the passage, select which of the following statement(s) is/are incorrect?
- U.S. did not supply fuel to India after 1987.
  - The Hyde Bill calls for suspension of all cooperation and fuel supplies.
  - India can prevent other countries from carrying out the test.
- A and B
  - B only
  - A and C
  - A, B and C
120. What was the uniqueness of the Tarapur agreement that was concluded in 1963?
- It guaranteed supplies of enriched uranium fuel from the U.S. for running the Tarapur reactors for entire life.
  - It prevented other countries from carrying out nuclear tests.
  - It addresses the legitimate concerns of India on fuel supply.
  - All the above
121. Which of the following countries supplied fuel for Tarapur?
- France
  - U.S.A.
  - USSR and France
  - France, USSR and China

#### PASSAGE IV

Mobility of capital has given an unprecedented leverage to companies not only to seek low paid, informal wage employees across national boundaries, but the threat of capital flight can also serve to drive down wages and place large numbers of workers in insecure, irregular employment. Informalisation strategies enable employers to draw on the existing pool of labour as and when they require, without having to make a commitment to provide permanent employment or any of the employee-supporting benefits associated with permanent jobs. As far as the working class is concerned, informalisation is in fact, a double-edged sword. For not only is the employee denied the rights associated with permanent employment, but the nature of casual work essentially destroys the foundations of working class organisations. As workmen move from one employer to another, numbers are scattered, everyday interests become divergent, and individualised survival takes precedence over group or collective struggles.

Even workers who have been in sectors with a long tradition of unionisation are difficult to organise once they are removed from the arena of permanent employment. About 50,000 textile mill workers in Ahmedabad City were laid off during the late 1980s and early 1990s. The move to obtain compensation and rehabilitation for these workers floundered on the weakness of the struggle, as numbers of workers who were available for pressing their claims and taking to some kind of activism dwindled, the motivation of leaders declined and the struggle slowly frittered away. If this is the situation with workers familiar with the concept of unionisation, the task of organising vast masses of casual workers who have never been organised, is obviously much more difficult. The problem, essentially, is not only that of organising workers for struggle, but given the transitory nature of casual employment, employers are not bound to provide insurance of any kind, and frequently, there is no fixed employer against whom workers’ claims can be pressed. In this context, the formation of the National Centre for Labour (NCL) can be seen as a landmark in the history of the working class movement in India. The NCL is an apex body of independent trade unions working in the unorganised sector of labour, registered under the Indian Trade Union Act, 1926. Through its constituent members, the NCL represents the interests of workers in construction, agriculture, fisheries, forests, marble and granite manufacturing, self-employed women, contract workers, anganwadi and domestic workers, as also workers in the tiny and small-scale industries. The NCL, launched in 1995, has about 6,25,000 members spread over 10 states in India. The NCL reflects two tendencies. First, the formation of such a federation highlights that despite the problems in organising workers in the informal sector, there have in fact, been a range of organisations which have sought to address these issues. On a collective plane, their activities represent a marked departure from the traditional way of conceptualising union activities exclusively around organised or formal sector workers. Thus, the unionisation of the hitherto unorganised sector has become inserted into the political universe as a possible and

legitimate activity. Second, the formation of the NCL, to an extent, overturns the pessimistic logic that the interests of the unorganised sector - given their diverse and inchoate form - cannot be articulated from a single platform. For the NCL aims precisely, do not only provide an anchoring for these diverse organisations, but more importantly, to articulate the need for institutionalised norms of welfare which can apply to the unorganised sector as a whole. It is in the context of this generalised movement that one needs to view recent efforts to bring in legislative acts which seek to create a new framework of laws and institutions addressing the needs of the unorganised sector. One of the major problems that has dogged this sector has of course been that of implementation. Thus, for example, while there is a stipulated minimum wage for most industries, this is frequently flouted by employers. A central objective of the NCL has been to advocate legislation to create agencies, which would mediate between the employer and the employee, to institutionalise certain guarantees of welfare and security to the employee. Thus, for example, the State Assisted Scheme of Provident Fund for Unorganised Workers, 2000, proposed by the Labour Department of the Government of West Bengal, introduces the mechanism of a Fund which will be contributed to by the worker (wage-earner or self-employed person), the employer, and the Government and to which the worker would be entitled at the age of 55 or above. By registering a worker to this programme and issuing an identity card, the initial hurdle to identifying a large mass of scattered workers is overcome, and a step is taken towards institutionalising their legitimate claims against the employers and from the State. The Karnataka Unorganised Workers (Regulation of Employment and Conditions of Work) Bill, 2001", offers a more comprehensive framework for addressing the unorganised sector's needs. It envisages the formation of a Fund and a Board, in each sector. The Board, consisting of members from the Government, employers and employees, would be responsible for administering the Fund. Employers must compulsorily pay towards the Fund, a certain fixed percentage of the wages or taxes payable by them, or a certain percentage of the cost of their project, (for example, in construction projects). The concept of the Fund is designed to create the financial viability of social security for workers, and to provide a structure for employers' contribution. Thus, workers would be insured for accident and illness, old age, and unemployment. The Board is designed to provide a mechanism to ensure the working of the Fund, and essentially, to institutionalise workers' claims against employers through an empowered agency. In the broader context of economic liberalisation, recently proposed labour reforms seek to extend the scope of contract employment and to facilitate worker lay-off. As casualisation of labour now seems an irreversible trend, the Bills outlined above would appear to be the only way to ensure workers' interest. To this extent, organisations such as the NCL, which have systematically struggled to push for such legislation, are serving an invaluable historical purpose. As the Karnataka

Unorganised Workers Bill awaits endorsement during the Assembly sessions being held currently, for the protagonists of the movement, this would be a watershed, but, nevertheless only a moment in a struggle that needs to be waged at multiple points and to evolve to newer heights.

122. According to the passage the proposed labour reforms
- will provide a much needed thrust to liberalization
  - will encourage the practice of hiring labourers on a contract basis.
  - have resulted in casualisation of labour.
  - seek to extend the scope of employment and to facilitate worker retrenchment.
123. According to the passage, textile mill workers could not obtain compensation because
- the number of workers available for pressing their claims was not adequate.
  - they were not united.
  - of the weakness of the struggle.
  - the motivation of the leaders was very low.
124. According to the passage, the most important aspect of the NCL is that
- it has given a voice to the interests of workers in the unorganized sector.
  - it is an apex body of independent trade unions.
  - it has 6,25,000 members spread over 10 states in India.
  - it is the only body of its kind in India.

**Directions (125-128): Each of these questions has four underlined parts. Identify the part which is not correct.**

125. (a) No sooner he left the office  
 (b) then it started  
 (c) raining heavily  
 (d) enough to make him completely wet.
126. (a) Even after hearing the leader  
 (b) for a long time  
 (c) the followers could not make out  
 (d) which he was talking about.
127. (a) The principal along with the teachers  
 (b) were seen boarding a bus  
 (c) to go to a picnic  
 (d) on a national holiday.
128. (a) With the introduction of the new syllabus  
 (b) the number of colleges reporting  
 (c) high results are decreasing  
 (d) year after year.

## DATA INTERPRETATION

Directions (129-132) : Answer these questions based on the information provided in the tables.

**SECTORWISE COMPOSITION OF INDIA'S EXPORTS (IN PERCENTAGE)**

Sector	1998-1999	1999-2000	2000-2001	2001-2002	2002-2003
Agriculture and Allied	17.9	18.2	18.2	13.4	12.1
Ores and Minerals	5.2	1.8	2.7	2.8	3.6
Petroleum and Crude	2.3	1.4	3.2	4.9	4.5
Manufactured Goods	73.6	77.6	74.7	76.1	77.4
Other Products	1.0	1.0	1.2	2.8	2.4
<b>Productwise Composition of Exports of the Manufactured Goods Sector (in percentage)</b>					
Product	1998-1999	1999-2000	2000-2001	2001-2002	2002-2003
Leather Products	7.1	5.5	5.0	4.4	3.8
Chemicals	8.8	7.8	9.2	9.8	10.1
Engineering Goods	12.5	13.6	13.2	15.7	16.6
Textiles	14.0	13.7	13.6	11.8	11.8
Readymade Garments	12.3	11.6	13.1	11.4	10.4
Gems and Jewellery	15.3	16.6	17.8	16.8	18.3
Others	30.0	31.2	28.1	30.1	29
Total	100	100	100	100	100

129. By what percentage has the exports of petroleum and crude in India increased from 1998-1999 to 2002-2003 ?  
 (a) 95.65%                      (b) 75.85%  
 (c) 81.45%                      (d) Data inadequate
130. In 2000-2001 if \$ 224.10 million worth of leather goods were exported from India then the total exports of India were (in \$ million)  
 (a) \$4482                      (b) \$5000  
 (c) \$6000                      (d) \$8000
131. If the exports of gems and jewellery in 1999-2000 were approximately \$ 300 million then what is the value (in millions) of the exports of ores and minerals in 2002-2003 given that the value of India's exports has increased by 150% from 1999-2000 to 2002-2003 ?  
 (a) \$184                      (b) \$162  
 (c) \$179                      (d) None of these
132. In India's exports increased by 20% from 1998-1999 to 2002-2003, then find the approximate percentage increase in the exports of the engineering goods from 1998-1999 to 2002-2003  
 (a) 68%                      (b) 57%  
 (c) 78%                      (d) Cannot be determined

Directions (133-137) : Study the table below to answer these questions.

**PRODUCTION OF PLASTIC MATERIAL**

Month	Polypropylene (000 tonnes)		Polyethylene (000 tonnes)		Nylon (000 tonnes)	
	2003-2004	2004-2005	2003-2004	2004-2005	2003-2004	2004-2005
March	17.6	20.8	104	40	3150	2900
April	16.4	20.6	100	88	3050	2850
May	16.0	21.4	80	96	3000	2900
June	15.4	19.2	88	80	2520	2800
July	16.0	19.2	90	84	2600	2700
August	16.6	21.4	94	80	2650	2750
September	16.4	20.8	98	84	2500	2650
October	17.8	23.0	100	80	2200	3000
November	16.4	22.6	104	92	2000	2950
December	17.6	21.8	108	88	2250	3000
January	20.0	20.0	96	100	2750	2350
February	19.8	17.8	20	96	2600	2250
March	21.0	–	40	96	2900	–

133. In 2003-2004, the ratio of the difference between the maximum and the minimum production of polyethylene, to the difference between the maximum and minimum production of polypropylene, is nearly  
 (a) 15 (b) 14  
 (c) 16 (d) 18
134. The ratio of the maximum production of polyethylene in 2004-2005 to the minimum production of polyethylene in 2003-2004 is  
 (a) 5 (b) 4.8  
 (c) 5.4 (d) 4.2
135. The maximum number of times the production in 2003-2004 equals the production in 2004-2005 is for which product?  
 (a) Polyethylene (b) Polypropylene  
 (c) Nylon (d) None of these
136. For polyethylene, the production in 2003-2004 is greater than the production in 2004-2005 for how many months ?  
 (a) 5 (b) 8  
 (c) 10 (d) 9
137. The difference between the minimum production of polypropylene in 2004-2005 and the minimum production of polypropylene in 2003-2004 is how many times the difference in July's production of polyethylene (of the two Years)?  
 (a) 2 times (b) 3 times  
 (c) equal (d) 0.4 times
141. If the total power generated in thermal units be 40% of the installed capacity, in hydel units be 50% of the installed capacity and in nuclear be 90% of the installed capacity, the total power generation in 1998 would be  
 (a) 19835 MW (b) 11900 MW  
 (c) 5015 MW (d) 22100 MV
142. In 1990, the percentage share of thermal in total installed capacity was approximately  
 (a) 45 (b) 50  
 (c) 26 (d) 54
143. The growth in the installed thermal capacity between 1991 and 1999 was approximately  
 (a) 51% (b) 130%  
 (c) 92% (d) 103%

**Directions (144-148) :** The following table refers to hotel construction projects. The cost of the project increased at the rate of 10% per annum; if completed beyond 1997.

Hotels in Mumbai				
Project	No. of Rooms	Estimated Cost (Rs. in crores)	Year of Completion	Company
Windsor Manor	600	275	1999	IHCL
Leela Hotels	310	235	1999	Leela Hotels
Mumbai Heights	250	250	1998	Bombay Hotels
Royal Holidays	536	225	1998	Lokhandwala Group
Majestic Holidays	500	250	1999	Raheja Group
Supremo Hotel	300	300	1999	ITC
Hyatt Regency	500	250	2000	Asian Hotels

**Directions (138-143):** Refer the following table to answer these questions.

**Sectorwise Installed Capacity in MW**

Year	Thermal	Hydel	Nuclear	Total
1990	7900	6390	420	14710
1991	8200	6610	420	15230
1992	8900	6780	420	16100
1993	9100	6965	640	16705
1994	10150	7530	640	18320
1995	11000	8500	640	20140
1996	12000	9200	640	21840
1997	13000	9880	640	23520
1998	15200	10200	800	26200
1999	16700	10450	800	27950
2000	19000	11000	800	30800

138. The two years when the capacities were augmented in all the sectors are  
 (a) 1993 and 1998 (b) 1990 and 1991  
 (c) 1993 and 1996 (d) 1990 and 200
139. The percentage increase in hydel capacity over that of the previous year was maximum in  
 (a) 1997 (b) 1991  
 (c) 1999 (d) 1995
140. In 2000, the percentage share of nuclear power in the total power capacity installed was approximately  
 (a) 10.0 (b) 2.59  
 (c) 5.42 (d) 1.11
144. What is the approximate cost incurred (in Rs. crore) for projects completed by 2000?  
 (a) Rs 1785 crore (b) Rs 2140 crore  
 (c) Rs 2320 crore (d) None of these
145. Which of the following has the maximum number of rooms per crore of rupees?  
 (a) IHCL  
 (b) Raheja Group  
 (c) Lokhandwala Group  
 (d) ITC
146. What is the cost incurred (in Rs. crore) for projects completed in 1998?  
 (a) Rs 475 crore (b) Rs 500 crore  
 (c) Rs 522.5 crore (d) Rs 502.5 crore
147. What is the cost incurred (in Rs. crore) for projects completed in 1999?  
 (a) Rs 1282.6 crore (b) Rs 1270.0 crore  
 (c) Rs 1805.1 crore (d) Rs 1535.0 crore

148. Which of the following had the least cost per room?

- (a) Lokhandwala Group
- (b) Raheja Group
- (c) IHCL
- (d) ITC

149. By what amount is the life insurance sold in Italy through agents more/less than the life insurance sold in Spain through brokers and agents ?

- (a) More by \$ 30 million
- (b) Less by \$ 10 million
- (c) Less by \$ 30 million
- (d) More by \$ 20 million

150. If it is known that 12.5% of the total life insurance sold in the countries is listed for term insurance, then what is the approximate value of non-term insurance sold in these countries for the year 2002 ?

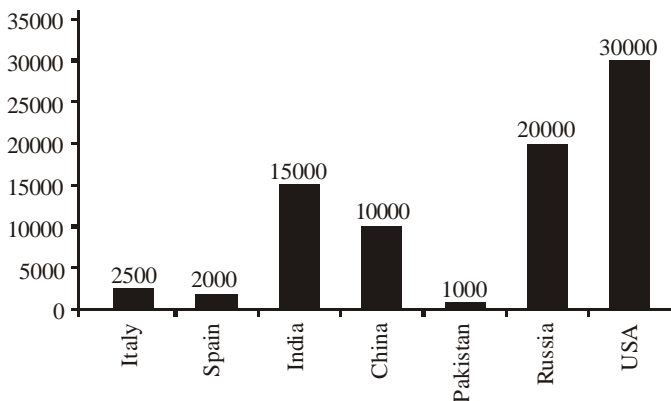
- (a) \$ 6480 million
- (b) \$ 10060 million
- (c) \$ 70400 million
- (d) Data insufficient

151. The split-up of sales of life insurance by distribution channels for India in 2002 is the same as that of Spain. If the insurance agents in India are paid a commission of 0.5% of their sales, then what is the amount of commission earned by them ?

- (a) \$ 9.75 million
- (b) \$ 9.5 million
- (c) \$ 10.5 million
- (d) \$ 13.25 million

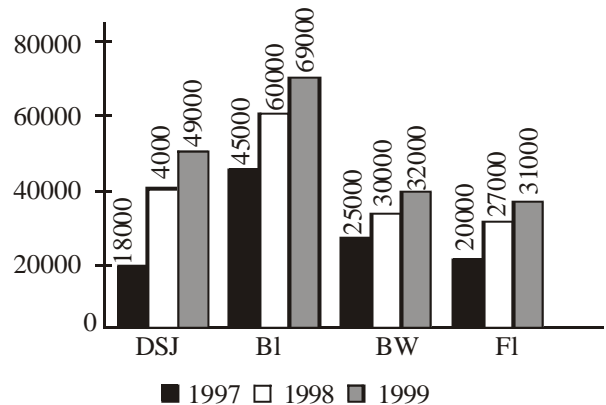
**Directions (149-151) :** These questions are based on the pie charts and the bar graph given below :

Sale of Life Insurance Policies in 2002 (in million dollars)

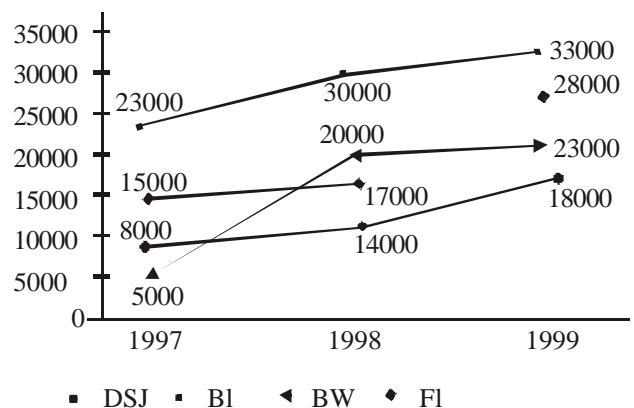


**Directions (152-156) :** Study the following graphs to answer these questions.

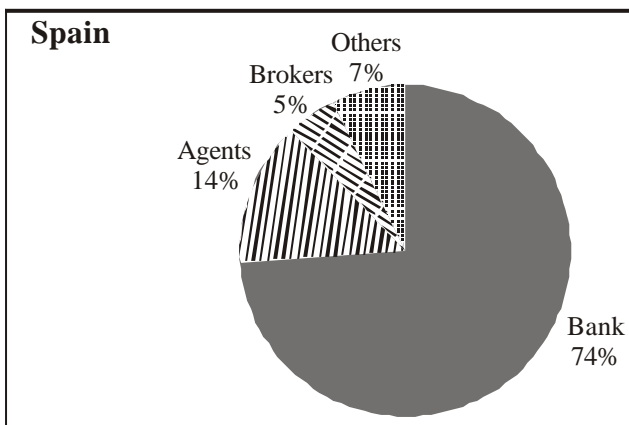
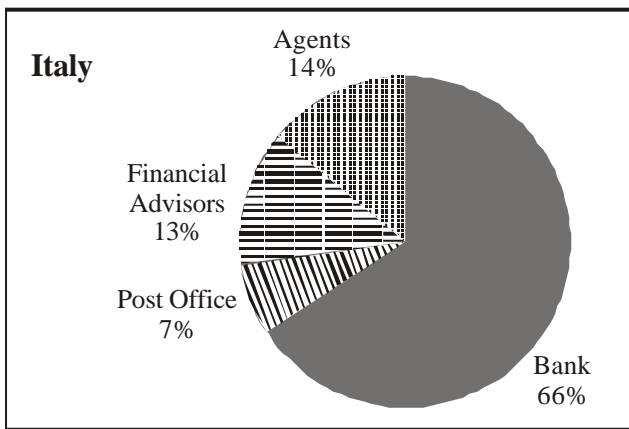
Circulation of Magazines



Advertisement Tariff Per Colour Page (in Rs)



DSJ: Dalal Street Journal, BI: Business India, BW: Business World, FI: Fortune India





152. The advertisement cost of colour page per thousand copies for Business world has, from 1997 to 1998
- decreased by Rs. 200
  - remained the same
  - increased by Rs. 466
  - increased by Rs. 200
153. During the years 1997-99, the magazine that has shown maximum percentage growth in circulation has been
- Dalal Street journal
  - Business India
  - Business World
  - Fortune India
154. In 1999, if Fortune India were to change the same rate to its advertisers as Dalal street Journal was charging a year ago, their cost of advertisement per thousand copies in Fortune India would
- increase by Rs. 140
  - decrease by 50%
  - decrease by Rs. 400
  - increase by 25%
155. In 1998, the advertisement cost for colour page per thousand copies was the lowest for
- Dalal Street Journal
  - Business India
  - Business world
  - Fortune India
156. The total circulation figure for the four magazines together in 1998 was approximately.
- 181,000
  - 108,000
  - 157,000
  - 140,000

**Directions (157-160): Each question consists of two quantities, one in column A and other in column B. Compare the both quantities and choose answer option as**

- if the quantity in Column B is greater
- if the quantity in Column A is greater
- if the two quantities are equal
- if the relationship cannot be determined from the information given

**Column A**

**Column B**

157. The number of posts needed for a fence 144 feet long and posts are placed 12 feet apart 12 Posts
158. Time elapsed from 2:55 PM to 3:15 PM on the same afternoon  $\frac{1}{3}$  hour
159.  $\frac{1}{3}$  of 8  $66\frac{2}{3}\%$  of 4
160. The average of  $\sqrt{0.49}$ ,  $\frac{3}{4}$ , and 0.8 75%

### G.K Section

161. How many companies from India found a place in the 'Global-500' list?
- 5
  - 4
  - 8
  - 10
162. For the year 2007-08, World Bank has predicted India's GDP growth at
- Below 8%
  - Below 7%
  - 8.5%
  - 9.6%
163. National electricity Policy envisages elimination of power shortage by 2012 through addition of \_\_\_\_\_ during 10th and 11th Plan periods.
- 75,000 MW
  - 50,000 MW
  - 100,000 MW
  - 125,000 MW
164. Recently Tata Consultancy Services (TCS) has succeeded in acquiring a big deal from Bank of China worth
- \$ 75 million
  - \$ 50 million
  - \$ 100 million
  - \$ 125 million
165. As per the latest estimates of Petroleum Ministry, India's refining capacity will be increased to \_\_\_\_\_ million tonnes per annum by the end of the coming 11th Plan.
- 220
  - 210
  - 230
  - 240
166. "Beyond Scarcity : Power, Poverty and Global Water Crisis" is the theme of
- Human Development Report 2006
  - Human Development Report 2005
  - World Development Report 2005
  - World Development Report 2006
167. Report of the Sachar Committee is related to
- Status of the Scheduled Castes in India.
  - Social, economic and educational status of the Muslim community.
  - Economic status of Backward Classes in India.
  - None of these
168. According to the Global Gender Gap Report, 2006 by the World Economic Forum, the country which has provided more political empowerment to women among the following is
- USA
  - India
  - Sri Lanka
  - Bangladesh
169. According to the Human Development Report 2006 of UNDP, the position of India in Human Development Index is
- 135th
  - 126th
  - 137th
  - 81st
170. Noted author and activist Arundhati Roy has been supporting the farmers of Singur in West Bengal who are resisting the State Government's move to acquire land and give it to
- Tata Motors
  - Maruti Udyog Ltd.
  - Infosys
  - Hindustan Motors
171. Year 2007 is being celebrated by India & China as the
- Tourism year
  - Friendship year
  - Co-operation year
  - None of these

172. The 14th Asia Pacific Economic Co-operation (APEC) 2006 Summit was held in  
 (a) Thailand (b) Vietnam  
 (c) Brazil (d) China
173. In the Union Budgets in India, which one of the following is the largest in amount?  
 (a) Non-Plan Expenditure  
 (b) Plan Expenditure  
 (c) Revenue Expenditure  
 (d) Capital Expenditure
174. Centre for DNA Fingerprinting is located at  
 (a) Bangalore (b) New Delhi  
 (c) Pune (d) Hyderabad
175. Cryogenic engines are used in  
 (a) Atomic reactors  
 (b) Rockets  
 (c) Defrost Refrigerators  
 (d) Doing research connected with superconductivity
176. "Threat of global warming" is increasing due to increasing concentration of  
 (a) Nitrous oxide (b) Ozone  
 (c) Sulphur dioxide (d) Carbon dioxide
177. The 2008 Olympic Games will be held at  
 (a) Montreal (b) Beijing  
 (c) Atlanta (c) London
178. Narain Karthikeyan is a sportsman in the field of  
 (a) Shooting (b) Car racing  
 (c) Chess (d) Golf
179. El Nino is  
 (a) A sea storm (b) A warm ocean current  
 (c) A tropical disturbance  
 (d) Another name of typhoon
180. Which of the following industries are the major beneficiaries of the Mumbai port?  
 (a) Sugar and Cotton textile industry  
 (b) Iron and steel industry  
 (c) Cotton textile and Petrochemical industry  
 (d) Engineering and Fertilizer industry
181. The World Trade Organization (WTO) was earlier known as  
 (a) UNICEF (b) GATT  
 (c) UNCTAD (d) FAO
182. What is value Added Tax (VAT)?  
 (a) A new initiative taken by the Government to increase the tax-burden of high income groups  
 (b) A simple, transparent, easy to pay tax imposed on consumers  
 (c) A single tax that replaces State tax like surcharge, turnover tax, etc.  
 (d) A new tax to be imposed on the producers of capital goods.
183. The outcome of devaluation of currency is  
 (a) Increased export and foreign reserve deficiency  
 (b) Increased export and improvement in balance of payments  
 (c) Increased import and improvement in balance of payments  
 (d) Increased export and import
184. The common currency which has been introduced among 11 European nations is known as  
 (a) Euro (b) Euro Pound  
 (c) Euro Dollar (d) None of these
185. Nuclear reactors used to produce electricity are based on  
 (a) Nuclear fusion (b) Nuclear fission  
 (c) Cold fusion (d) Superconductivity
186. Who amongst the following was the head of the Investment Commission which submitted its report to the Government of India recently?  
 (a) Dr. Rakesh Mohan  
 (b) Mr. Ratan Tata  
 (c) Mr. Kumar Mangalam Birla  
 (d) Mr. Rahul Bajaj
187. Mr. Arvind Kejriwal who got the Ramon Magsaysay Award 2006 is the founder of which of the following NGOs?  
 (a) Aawahan (b) Sankalp  
 (c) Parivartan (d) Sammelan
188. Which bank has launched a new health cover scheme under the name of "Arogya Shree"?  
 (a) PNB (b) SBI  
 (c) Andhra Bank (d) OBC
189. The Eleventh Five-Year Plan has been named as  
 (a) 'Towards Fast and More Inclusive Growth'  
 (b) 'Towards Infrastructural and Agricultural Growth'  
 (c) 'Towards Rapid Educational and Economical Growth'  
 (d) None of these
190. Which of the following State Governments has decided to provide health insurance to people living below the poverty line with effect from January 2007?  
 (a) Andhra Pradesh (b) Orissa  
 (c) Karnataka (d) West Bengal
191. In November 2006, Prime Minister Dr. Manmohan Singh and Chinese President Hu Jintao signed how many agreements including the Bilateral Investment Protection Agreement, in New Delhi?  
 (a) 11 (b) 15  
 (c) 13 (d) 9
192. What is the position of Tatas, the largest Indian group in terms of revenues and market capitalisation, in the Forbes' list of world's most reputed companies?  
 (a) 20th (b) 18th  
 (c) 22nd (d) 24th
193. The Indian Railways has decided to start how many new luxury trains on the line of "Palace of Wheels" to ensure foreign customer?  
 (a) 6 (b) 4  
 (c) 10 (d) 15
194. ASEAN, the major trade block of the world, consists of the following nations.  
 (a) Indonesia, Malaysia, Thailand, Philippines and Singapore  
 (b) India, Bangladesh, Myanmar, Sri Lanka and Pakistan  
 (c) Indonesia, India, Thailand, Malaysia and Singapore  
 (d) Vietnam, Thailand, Mauritius, Singapore and Philippines

195. The states through which the Cauvery river flows is
- (a) Kerala, Karnataka and Tamil Nadu
  - (b) Andhra Pradesh, Karnataka and Tamil Nadu
  - (c) Kerala, Andhra Pradesh and Tamil Nadu
  - (d) Maharashtra, Karnataka and Tamil Nadu
196. Which one of the following is not correctly matched?
- (a) White Revolution – Dairy
  - (b) Green Revolution – Agriculture
  - (c) Blue Revolution – Fishery
  - (d) Red Revolution – Wool
197. Which one of the following is not a department in the Ministry of Human Resource Development?
- (a) Department of Secondary Education and Higher Education
  - (b) Department of Elementary Education and Literacy
  - (c) Department of Technical Education and Literacy
  - (d) Department of Woman and Child Development
198. In India, National Income is estimated by
- (a) Central Statistical Organisation
  - (b) Planning Commission
  - (c) Indian Statistical Institute
  - (d) National Sample Survey Organisation
199. Which state in the country has the largest number of districts?
- (a) Maharashtra
  - (b) Madhya Pradesh
  - (c) Tamil Nadu
  - (d) Uttar Pradesh
200. Who among the following has been given 'World Citizenship Award' 2006?
- (a) Jimmy Carter
  - (b) Kofi Annan
  - (c) Bill Clinton
  - (d) Ronald Reagan

## SOLUTIONS

1. (c) Let the sum invested at 5% be Rs. x. Total interest

$$= \frac{x \times 5 \times 4}{100} + \frac{(12000 - x) \times 4 \times 6}{100} = 2580$$

$$\Rightarrow 20x + 288000 - 24x = 258000$$

$$\Rightarrow 288000 - 258000 = 24x - 20x$$

$$\Rightarrow 4x = 30000$$

$$\Rightarrow x = \text{Rs } 7500.$$

2. (b) Given  $8P = P \left(1 + \frac{r}{100}\right)^3$

Where P = Principal amount,

r = Compound interest rate

$$\Rightarrow r = 100\%$$

∴ let the time in which the principal amount becomes 16 times be n

$$\text{Then } 16P = P \left(1 + \frac{100}{100}\right)^n$$

$$16 = 2^n \Rightarrow n = 4 \text{ yrs.}$$

3. (d) Let the total number of papers be x.

Total marks obtained = 63x

$$\Rightarrow 63x + 20 + 2 = 65x$$

$$\Rightarrow 22 = 65x - 63x = 2x$$

$$\Rightarrow x = 11$$

4. (a) Let the speed of the boatman be x km/hr and that of stream by y km/hr. Then

$$\frac{12}{x + y} = \frac{4}{x - y}$$

$$\Rightarrow 12x - 12y = 4x + 4y$$

$$\Rightarrow 8x = 16y \Rightarrow x = 2y$$

$$\text{Now } \frac{45}{x + y} + \frac{45}{x - y} = 20$$

$$\Rightarrow 45 + 135 = 60y \Rightarrow 180 = 60y \Rightarrow y = 3 \text{ km/hr.}$$

5. (c) The speeds of the two cyclists are different Hence, when one of the cyclist has covered one round more than the other cyclist, only then they will meet at the starting point.

∴ Time when the two cyclists will meet

$$= 300 \text{ m} \times (\text{difference in speeds})$$

$$= 300 \times (8 - 7) \text{ sec} = 300 \text{ seconds.}$$

6. (c) Let the questions with right answer be x.

Questions with wrong answer = 90 - x

Marks obtained

$$5x - 2(90 - x) = 387 \text{ (given)}$$

$$\Rightarrow 5x - 180 + 2x = 387$$

$$\Rightarrow 7x = 387 + 180 = 567 \Rightarrow x = 81$$

$$\Rightarrow \text{Wrong answers} = 90 - 81 = 9$$

7. (c) Let the quantity of rice for Rs. 4.50 per kg be x kg.  
Then  $4.50x + 5(50 - x) = 240$

$$\frac{9}{2}x + 250 - 5x = 240$$

$$\frac{x}{2} = 250 - 240 = 10$$

$$x = 20 \text{ kg.}$$

8. (a) Amount = Rs. 176040

Principal = Rs. 16000

Time = 2yrs

Rate = Rs = ?

$$17640 = 16000 \left(1 + \frac{R}{100}\right)^2$$

$$\Rightarrow \frac{17640}{16000} = \left(1 + \frac{R}{100}\right)^2$$

$$\Rightarrow 1.1025 = \left(1 + \frac{R}{100}\right)^2$$

$$\Rightarrow 1 + \frac{R}{100} = 1.05 \Rightarrow \frac{R}{100} = 1.05 - 1 = 0.05$$

$$\Rightarrow R = 5\%$$

9. (d) Average of Kerosene =  $\frac{18}{900} \times 1000 = 20 \text{ km/ltr.}$

Cost of petrol = Rs 30 / ltr;

$$\therefore \text{Cost of Kerosene} = \frac{2}{3} \text{ of petrol} = \text{Rs. } 10/\text{ltr.}$$

Let the quantity of Kerosene be x in 1 ltr. of mixture.

$$\therefore 20(x) + 40(1 - x) = 38$$

$$\Rightarrow x = 0.1 \text{ ltr.}$$

$$\therefore \text{Cost of mixture} = 10(0.1) + 30(0.9) = 28/-$$

Hence the additional amount that pump owner was charging = 30 - 28 = Rs. 2.

10. (b) Let the speed of the train be S km/hr and distance travelled be D km.

$$\text{Total time taken normally} = \frac{D}{S} \text{ hrs}$$

1st case

$$\frac{150}{S} + \frac{(D-150) \times 5}{3S} = \frac{D}{S} + 8$$

$$\Rightarrow 450 + 5D - 750 = 3D + 24S$$

$$\Rightarrow 2D - 24S = 750 - 450 = 300 \quad \dots(1)$$

2nd case

$$\frac{510}{S} + \frac{(D-510) \times 5}{3S} = \frac{D}{S} + 4$$

$$\Rightarrow 1530 + 5D - 2550 = 3D + 12S$$

$$\Rightarrow 2D - 12S = 2550 - 1530 = 1020 \dots(2)$$

From (1) and (2) we get

$$12S = 720 \Rightarrow S = 60 \text{ km/hr.}$$

$$\Rightarrow 2D = 300 + 24S = 300 + 24 \times 60 = 1740$$

$$\Rightarrow D = \frac{1740}{2} = 870 \text{ km}$$

11. (c) Let the number of Mechanical engineering graduates be M and Electronic engineering graduates be E. Then

$$\frac{2.45M + 3.56E}{M + E} = 3.12$$

$$\Rightarrow 2.45M + 3.56E = 3.12M + 3.12E$$

$$\Rightarrow 3.56E - 3.12E = 3.12M - 2.45M$$

$$\Rightarrow 0.44E = 0.67M$$

$$\Rightarrow E = \frac{0.67}{0.44}M = \frac{67}{44}M$$

For E to be an integer, the least value will be 67.

12. (a) In one operation effectively the quantity of water transferred from y to x is = quantity transferred by A – quantity transferred by B

$$= \frac{1}{2} - \frac{1}{2} \left( \frac{1}{2} \right) = \frac{1}{4} \text{ ltrs.}$$

In 40, operations, the quantity of water transferred

$$= 40 \times \frac{1}{4} \text{ ltr.} = 10 \text{ ltrs.}$$

Since, in 40 operations, the quantity of water in X is equal to Y, hence we have 10 ltrs of water in each of X and Y.

Hence the total volume of water in the system = 20 ltrs.

13. (d) Let the number of students be x and the average weight be y kgs. Sum of weights of all the students = xy. When one student is added.

$$\frac{xy + 50}{x + 1} = y + 1 \Rightarrow xy + 50 = xy + y + x + 1$$

$$\Rightarrow x + y = 50 - 1 = 49 \dots(1)$$

When one more student is added

$$\frac{xy + 100}{x + 2} = y + 1.5$$

$$\Rightarrow xy + 100 = xy + 2y + 1.5x + 3$$

$$\Rightarrow 1.5x + 2y = 100 - 3 = 97 \dots(2)$$

From (1) and (2), we have

$$x = 2, y = 47.$$

14. (b) Let the speed of the stream be x km/hr and distance travelled be S km. Then,

$$\frac{S}{12 + x} = 6 \text{ and } \frac{S}{12 - x} = 9$$

$$\Rightarrow \frac{12 - x}{12 + x} = \frac{6}{9} \Rightarrow 180 - 9x = 72 + 6x$$

$$\Rightarrow 15x = 36 \Rightarrow x = \frac{36}{15} = 2.4 \text{ km/hr.}$$

15. (c) Let the quantity carried by the ships be L, M and S respectively.

$$4L = 7S, 3M = 2L + S$$

$$\Rightarrow L = \frac{7}{4}S \text{ and } 3M = 2 \times \frac{7}{4}S + S = \frac{7}{2}S + S = \frac{9}{2}S$$

$$\Rightarrow M = \frac{3}{2}S$$

$$\text{Now } 15L + 7M + 14S = \frac{7}{4} \times 15S + \frac{3}{2} \times 7S + 14S$$

$$= \frac{105S}{4} + \frac{21}{2}S + 14S = \frac{105S + 42S + 56S}{4} = \frac{203}{4}S$$

$$\text{Total quantity carried} = \frac{203}{4}S \times 36 = 1827S$$

$$\text{Again, } 12L + 14M + 21S = \frac{7}{4} \times 12S + \frac{3}{2} \times 14S + 21S \\ = 21S + 21S + 21S = 63S$$

$$\therefore \text{Number of journeys} = \frac{1827S}{63S} = 29$$

16. (a) If the rate of the stream is x, then  $2(4.5 - x) = 4.5 + x$   
 $\Rightarrow 9 - 2x = 4.5 + x \Rightarrow 3x = 4.5 \Rightarrow x = 1.5 \text{ km/hr}$

17. (d) Work done by a woman in 1hr = 1/8

Work done by a man in 1hr = 1/6

Work done by a boy in 1hr = 1/12

Total work done by 9 men in 6 days, 6 hrs each

$$= 9 \times 6 \times 6 \times 1/6 = 54 \text{ units.}$$

$\therefore$  No. of days to finish the total work by 12 M, 12 W and 12 B

$$= \frac{54}{8 \left[ \left( 12 \times \frac{1}{6} \right) + \left( 12 \times \frac{1}{8} \right) + 12 \times \frac{1}{12} \right]}$$

$$= \frac{3}{2} \text{ days} = 1 \frac{1}{2} \text{ days.}$$

18. (a) Let the original schedule be x days.

$$\text{Number of pieces per day} = \frac{360}{x}.$$

Job finished in x - 1 days. Hence

$$\frac{360}{x-1} - \frac{360}{x} = 4$$

$$\Rightarrow 360x - 360(x-1) = 4(x-1)x \Rightarrow 360 = 4x^2 - 4x$$

$$\Rightarrow 4x^2 - 4x - 360 = 0 \Rightarrow (x-10)(x+9) = 0$$

$$\Rightarrow x = 10, -9; x = 10 \text{ (-9 is not possible)}$$

Hence the job completed in 10 - 1 = 9 days.

19. (b) Let the number of officers be x.

Number of workers = 400 - x

$$\Rightarrow 10000 \times x + 2000(400 - x) = 3000(400)$$

$$\Rightarrow 10000x + 800000 - 2000x = 12,00,000$$

$$\Rightarrow 5x + 400 - x = 600$$

$$\Rightarrow 4x = 600 - 400 = 200 \Rightarrow x = 50$$

∴ Number of officers = 50

20. (b) Let x litres of first mixture be mixed with y litres of second mixture.

Milk	Water
x litres (1st) $\frac{8}{9}x$	$\frac{1}{9}x$
y litres (2nd) $\frac{1}{6}y$	$\frac{5}{6}y$
Third vessel $\frac{8}{9}x + \frac{1}{6}y$	$\frac{1}{9}x + \frac{5}{6}y$

Since the third vessel contains half milk and half water,

$$\frac{8}{9}x + \frac{1}{6}y = \frac{1}{9}x + \frac{5}{6}y \Rightarrow 16x + 3y = 2x + 15y$$

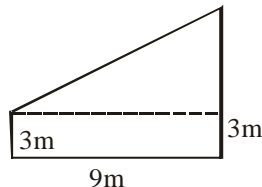
$$\Rightarrow 16x - 2x = 15y - 3y \Rightarrow \frac{x}{y} = \frac{12}{14} = \frac{6}{7}$$

Hence  $y = \frac{7}{13} \times 26 = 14$  gallons

21. (b) Maximum no. of trials Amit has to take =  $10 \times 10 \times 10 \times 10 = 10^4$   
(since pass code is of 4 digit and each digit can be filled by any one of the 10 digits.)

22. (a) Let the height of wall be x m  
⇒ Length of the ladder = x m.

$$\therefore x^2 = (x-3)^2 + 9^2 \Rightarrow x^2 = x^2 + 9 - 6x + 81$$



$$\Rightarrow 6x = 9 + 81 = 90 \Rightarrow x = 15 \text{ m}$$

23. (d) Let the side of the cube be 'a'  
Sum of the surface areas of cubes =  $3(6a^2) = 18a^2$   
Sides of the cuboid will be a, a and 3a.  
Surface area of cuboid =  $4(3a^2) + 2(a^2)$   
 $= 12a^2 + 2a^2 = 14a^2$

$$\therefore \text{Required ratio} = \frac{14a^2}{18a^2} = 7:9$$

24. (a) Volume of the cube =  $10 \times 10 \times 10 = 1000 \text{ cm}^3$

$$\text{Area of the sheet} = \frac{1000}{0.5} = 2000 \text{ cm}^2$$

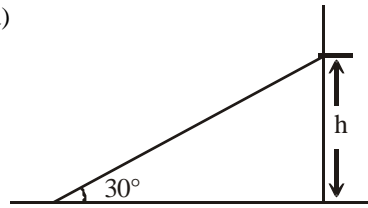
Let the sides be x and 5x.

$$\Rightarrow x \times 5x = 2000 \Rightarrow 5x^2 = 2000$$

$$\Rightarrow x^2 = 400 \Rightarrow x = 20 \text{ cm}$$

∴ Sides are 20 cm and 100 cm

25. (a)



Let the height of the point where the tree is broken be

$$h. \text{ Then } \sin 30^\circ = \frac{h}{30-h} \Rightarrow \frac{1}{2} = \frac{h}{30-h}$$

$$\Rightarrow 30 - h = 2h \Rightarrow 3h = 30 \Rightarrow h = 10 \text{ m}$$

26. (b) Weight of dry grapes without water

$$= 250 \times \frac{90}{100} = 225 \text{ kg}$$

Let fresh grapes be x kg.

According to question,

$$x \times \frac{20}{100} = 225 \Rightarrow x = \frac{225 \times 100}{20} = 1125 \text{ kg}$$

27. (a) Let the quantity bought be 12x, 15x and 20x kg respectively.

$$\text{Total cost price} = 100 \times 12x + 80 \times 15x + 60 \times 20x$$

$$= 1200x + 1200x + 1200x = 3600x$$

Selling price of first two quantities at profit of 20%

$$= \frac{120}{100} \times 2400x = 2880x$$

Total selling price = 3600x (No profit no loss)

∴ Selling price of third quantity =  $3600x - 2880x = 720x$

$$\therefore \text{Loss percentage} = \frac{1200x - 720x}{1200x} \times 100 = 40\%$$

28. (b) Distance covered = 187.5m, Time = 9 secs

$$\text{Relative speed} = \frac{187.5}{9} \times \frac{3600}{1000} = 75 \text{ km/hr}$$

As the trains are travelling in opposite directions, speed of goods train =  $75 - 50 = 25 \text{ km/hr}$ .

29. (c) Relative speed =  $90 + 60 = 150 \text{ km/hr}$ .

Total distance to be covered =  $300 + 200 = 500 \text{ m}$

$$\text{Time required} = \frac{500}{150 \times 1000} \times 3600 = 12 \text{ sec.}$$

30. (d)

31. (c) Let the side of triangle be 'a'. Perimeter = 3a

$$\text{Area} = \frac{\sqrt{3}}{4} a^2$$

Area of hexagonal of side  $\frac{a}{2}$

$$= \frac{\sqrt{3}}{4} \times \left(\frac{a}{2}\right)^2 \times 6 = \frac{3\sqrt{3}}{8} a^2$$

If R is the radius of circle  $2\pi R = 3a$  or  $R = \frac{3a}{2\pi}$

$$\text{Area} = \pi \times \left(\frac{3a}{2\pi}\right)^2 = \frac{9a^2}{4\pi}$$

If triangular takes 8 minutes i.e. 480 secs., time taken by hexagonal and circular pipe will be 320 second & 290 seconds respectively.

32. (a)  $\frac{\text{height of Vikas Minar}}{\text{length of shadow of Vikas Minar}} = \frac{\text{height of Qutab Minar}}{\text{length of shadow of Qutab Minar}}$   
 $\Rightarrow \frac{80}{120} = \frac{x}{150}$  where x be the height of Qutab Minar.  
 $\Rightarrow x = 100$  m

33. (a) Ram's new monthly salary = 90% of Rs 8000 = Rs. 7200  
 The monthly expenditure were Rs. 6000  
 In Jan expenses increased by 5% to 6300  
 In Feb expenses increased by 5% to 6615  
 In Mar expenses increased by 5% to 6945.75  
 In April expenses increased by 5% to 7293.03  
 Hence April onwards Ram will not have any savings.

34. (d) Output is 90% of input, hence  
 $X = \frac{90}{100} \times 100 = 90$  litres  
 (if 100 litres of oil is refined for 1 hr)  
 Again  $Y = \frac{90}{100} \times 90 = 81$  litres  
 (if 100 litres of oil is refined for  $1\frac{1}{2}$  hr ie 90 litres of X for  $\frac{1}{2}$  hr)  
 $\therefore$  100 litres of initial input gives 81 litres of Y  
 $\therefore$  1000 litres of initial input will gives 810 litres of Y.  
 $\therefore$  Maximum profit =  $50 \times 810 = \text{Rs. } 40500$

35. (d) Lime = 30 litres, Water = 10 litres  
 Let x litres of water be added, then  $\frac{10+x}{40+x} = \frac{2}{7}$   
 $\Rightarrow 70 + 7x = 80 + 2x \Rightarrow 5x = 10 \Rightarrow x = 2$  litres.

36. (d) On dividing we find that when  $\frac{11109999}{1111}$   
 Quotient is 9999 and remainder is 1110.  
 37. (c) We know that if two triangles are similar then the ratio of their areas is equal to the ratio of square of its corresponding sides.  
 38. (a) Let the Number be N  
 $\therefore N = 765x + 42$   
 765 is divisible by 17  
 $\therefore$  if N is divided by 17, remainder will be  $42 - 34 = 8$ .

39. (a) From option (a),  
 $2^{10} - 2^n = 960 \Rightarrow 1024 - 2^n = 960 \Rightarrow 2^n = 64$   
 $\therefore n = 5$ .  
 Similarly we can try for options (b) and (c). Hence, any other option does not satisfy the given equation.

40. (d) Volume of cistern =  $\pi \times 10^2 \times 15 = 1500\pi \text{ m}^3$   
 Area of pipe =  $\pi r^2 = \pi \times \left(\frac{25}{100}\right)^2 \text{ m}^2 = \frac{\pi \text{ m}^2}{16}$   
 $\therefore$  Time taken to fill the cistern  
 $= \frac{\text{Volume of cistern}}{\text{Area of pipe} \times \text{Velocity of water}}$   
 $= \frac{1500\pi}{\frac{\pi}{16} \times 5} = 4800 \text{ sec} \approx 80 \text{ minutes}$

- 41-43. According to the data, we infer  
 Madhu  $\rightarrow$  Dramatics, Computer Science (CS)  
 Shivani  $\rightarrow$  Dramatics, CS, History.  
 Asha  $\rightarrow$  CS, Physics, History, Dramatics  
 Namita  $\rightarrow$  Physics, Maths, History  
 Hence, from the above, it is easy to see

41. (d) 42. (b) 43. (a)  
 44-46. According to the question,  

Subject	Good	Poor
A, B Hindi	English	
A, C Sanskrit	Geography	
D, B Maths, Sanskrit		

44. (b) A person who is good in Hindi but not in Maths is A.  
 45. (c) Pair who are good in English and Sanskrit is C and D since A and B are poor in English.  
 46. (a,c) Both A and C are good in Sanskrit but poor in Geography.

- 47-49. From the data given, we infer the following:  

Channel	Weekday	Movie Category
STAR	Sunday	Murder mystery
SONY	Tuesday	Spy Thriller
B4U Wednesday	Science fiction	
HBO Saturday	Comedy	

47. (a) 48. (d) 49. (b,d)

- 50-52. The order of the books as follows :

Urdu
Mathematics
Punjabi
English
History
Accounting

- According to the question, we can infer that the sequence from top to bottom is Urdu, Mathematics, Punjabi, English, History and Accounting.  
 50. (d) Punjabi Book is between Mathematics and English.  
 51. (a) Accountancy is at the bottom.  
 52. (b) Urdu is at the top.  
 53. (b) In the statements, it is mentioned that if there is shortage in production of onions, the price of onions will go up.

54. (b) Since they have won the match it is believed that the players played to their full potential.
55. (c) Since in the statement, it is mentioned that only some businessmen are rich, therefore it is not necessary that so man be a businessman for being rich.
56. (a) No. of units demanded in B  
= No. of units being supplied to B  
– No. of units being supplied from B  
= 1200 – 250 – 550 = 400 units.
57. (b) No. of units demanded in C is 225.  
No. of units reaching C = M + 250  
No. of units going out of C = 800 + 300  
∴ 225 = M + 250 – (800 + 300)  
M = 1075 units.
58. (b) Total demand at E = 550 + 800 + 650  
(i.e. units reaching E)  
= 2000.  
It is given that E is 80% of A  
∴ A =  $\frac{100}{80} \times 2000 = 2500$  units.

59-61. From the given data, we find that A, B and C, D are the two couples and A and D are the women.  
We also find that the pay of A, B, D, E is D > E > B > A, we are not able to find out who the professor is.  
Hence

59. (d) 60. (b) 61. (b)
62. (d) For this question, if we knew the principal amount, we could have found the rate of interest.
63. (a) Statement A alone is not sufficient but statement B can alone solve the query.

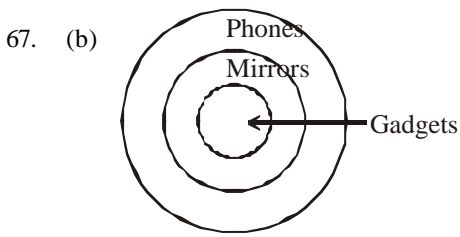
According to B,  $\frac{12}{13} = \frac{M-4}{30-4} \Rightarrow M = 28$  yrs

64. (b) Statement A is sufficient, From A we find that the number of boys are 20.
65. (a) Statement B is sufficient to solve the query. Let the number be N.

∴  $\frac{1}{5}N = \frac{1}{2}(44) - 15 \Rightarrow N = 35$

∴ The difference between two digits = 2.

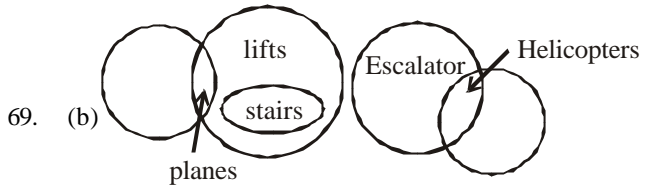
66. (c) According to statement (A) when there is a difference of 2 marks, the difference in %age is 4%  
∴ Passmarks = 32% + 1 = 16 + 1 = 17 marks.  
According to statement (B) 10% ≈ 5 marks.  
∴ Passmarks = 30% + 2 = 15 + 2 = 17 marks.  
Hence, since both the statements alone are sufficient to answer.



Hence (b) i.e. none of the conclusions follows.

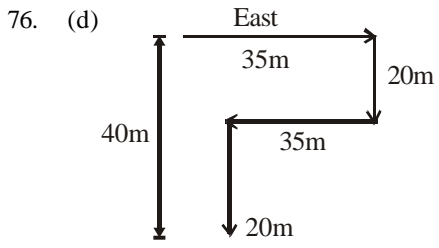


Hence some rackets are not cats, no dogs is a cow.



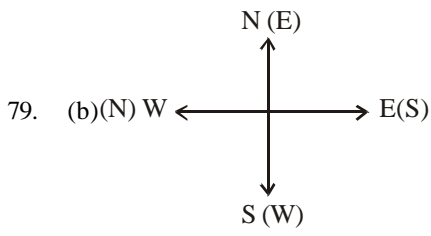
I, II or IV follow.

70. (b)  
71. (c)  
72. (b)  
73. (d) From the given options only the sequence DC follows logically.  
74. (c) Since one can find Chinese toys only in China hence we can not find them in the fair.  
75. (b) Since one can see African elephant only in Africa, hence AC logically follows.



From the above diagram  
Total distance from the starting point  
= 20 m + 20 m = 40 m.

77. (d) 1st of month was Tuesday, hence the date on first Saturday was 5th.  
Hence the other Saturdays of the month are 12, 19, 26.  
Rama met her brother on 26th.
78. (b) Neha is the sister (because Rajesh's grandfather is the same as Neha's).



When the arrow turns, East becomes South, North becomes East, West becomes North and South becomes West.  
So the traveller must be actually travelling in the South thinking it is West.



80. (b) Since question on A has been asked in the previous year, hence the question setter will choose a modern poet (i.e. from E, F, G, H) this year. From the given options, it has to be either E or F. And since it is given in the question that the question setter does not like to ask any question on F, the probable question is going to be E this year.



This is the order of the book as given by the conditions in the question. Hence B is at the bottom

82. (d) The coins can be placed in the following pattern.



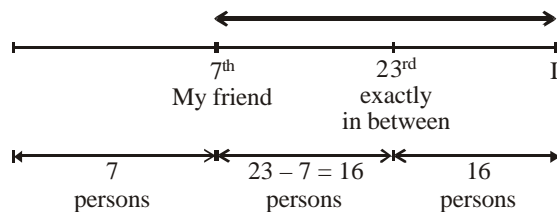
Hence 6 coins of the same size can be placed around the central coin.

83. (c) Let the total no. of people = n

$$\therefore \frac{n(n-1)}{2} = 105 \Rightarrow n^2 - n = 210$$

On solving get n = 15, -14  
-14 is not possible. Hence the no. of people present at the get together is 15.

84. (d) Positions as given in the question are



$$\therefore \text{My position is } 7 + 16 + 16 = 39.$$

85. (b) A cube has 6 sides and every side is adjacent to 4 other sides. Hence we can colour the opposite sides with the same colour.

$\therefore$  A minimum of 3 colours is required to colour the cube with the given condition.

86. (c) Cube of a number – Square of another number = 2

$$\text{By trial and error, } 3^3 - 5^2 = 2$$

$$\text{Hence } 27 - 25 = 2$$

$\therefore$  the present age is 26 yrs.

$$\therefore \text{ the age in which he is again a cube of number } = 4^3 = 64.$$

$$\therefore \text{ no. of years he should wait } = 64 - 26 = 38 \text{ yrs.}$$

87. (b) 4-legged chairs = 4 legged tables = no. of workers.

3-legged stools = 4 legged almirahs

No. of stools = 1 + no. of workers.

Total no. of legs = 585

Let the no. of workers = x

$$\therefore 2x + x \times 4 + x \times 4 + (x + 1)3 + (x + 1)4 = 585$$

$$\Rightarrow 2x + 4x + 4x + 7x + 7 = 585 \Rightarrow 17x = 578 \Rightarrow x = 34$$

$\therefore$  The no. of workers are 34.

88. (d) B + D = 50 ....(1)

$$B + 8 = C$$

$$\Rightarrow B = C - 8 \quad \dots(2)$$

$$A - 8 = C - 3$$

$$\Rightarrow A = C + 5 \quad \dots(3)$$

$$A + 6 = 2D$$

$$\Rightarrow A + 6 = 2(50 - B)$$

$$\Rightarrow A + 2B = 94 \quad \dots(4)$$

Putting the values of (2) and (3) in (4) we get

$$C + 5 + 2(C - 8) = 94$$

$$\Rightarrow 3C - 11 = 94$$

$$\Rightarrow C = 105/3 = 35$$

$$A = 40, B = 27, C = 35, D = 23.$$

89. (d) 'Professionals focus their energies' is the best choice. Further an image is portrayed.

90. (b) The only word which goes well with straightforward and honest is up-front. Durable is used for a thing not a person.

91. (c) 'to listen attentively and sensitively' and 'trust you with their feelings' is the right usage.

92. (d) In the context of the text, continuing education seems to be the best usage. As the world is changing very fast so one has to continuously upgrade himself as per the new requirements.

93. (a) The use of 'that thing' is non standard. Replace it with so.

94. (d) The underlined sentence is unnecessarily made bulky and redundant.

95. (c) affirms is the verb form, affirmation is the noun form. This sentence requires the use of the noun form,

96. (b) The original sentence is correct.

97. (a) D shall be followed by C as C continues to talk about errors in thinking. This will be followed by B, which talks about our classification skills which has been emphasized in C.

98. (b) The paragraph has to start with D. This is followed by A, as 'as a result' in A refers to the quality described in D. B follows A as it gives an example of an assumption mentioned in A.

99. (d) The paragraph starts with D. A has to follow B as 'In the past' mentioned in A shows the contrast from 'recent one' mentioned in B.

100. (c) The paragraph starts with C, which introduces anticipation and participation. This is followed by B, which talks about anticipation. B is followed by A which talks about participation. D follows A as 'it' in D refers to participation in A.

101. (d) The expressions have ought, has ought, and had ought are nonstandard. To correct it, simply remove the have, has, or had. so (d) is correct.

102. (a) Replace 'Being a realist' with 'Since he was a realist'.

103. (c) Replace 'they' with 'those'.

104. (b) The given sentence is correct. So (b) is the correct option as it repeats the original sentence.

105. (d) Both 1 and 3 are correct. 1 is correct as lesser junk foods being available to the parents means they eat more of natural foods and still show high nutritional deficiency. Hence it supports the spokesman. 2 is not correct because it might be inferred that the high nutritional deficiency of the junk foods might have got compensated by their not taking the breakfast. 3 is correct as the adults, even after taking both type of foods, show high nutritional deficiency so it can be said that junk foods are not as bad as made out to be.
106. (b) Higher increase in Land values means lesser business activity in the Far East, which is contradictory to the higher fund outflows from India to Far East.
107. (a) AIDS is a very severe disease and countries strive to reduce their share of the total AIDS patient in the world. So it is totally a wrong example.
108. (a) The only practical adjustment could be 1. By limiting themselves to just one child they would be able to enjoy the benefit of starting a family.
109. (d) All the three are correct as per the definition given in the passage. Refer "The difference over ..... cooperation".
110. (a) Clearly A and B are correct as they are mentioned in the passage A is true as the US legislation prevented it from doing so. B is true as "The Hyde Bill calls for suspension of all cooperation and fuel supplies and even calls for return of all equipment and materials supplied earlier in the event of a test". C is wrong as the passage clearly says that India cannot prevent other countries from carrying out tests.
111. (a) Refer the fourth sentence, "The Tarapur agreement ..... entire life".
112. (d) The 7th and the 8th sentence clearly tells that after 1978, when US stopped its fuel supplies, it allowed France to supply fuel to India. Later USSR and even China supplied fuel for Tarapur.
113. (a) Nowhere the passage says that Chinese Psychology is a difficult subject to study or organize. So (c) and (d) are wrong. (b) is useless. (a) is correct as is also mentioned in the first half of the passage.
114. (c) The passage clearly says that "The Cultural Revolution silenced and froze the research". So the period was unproductive.
115. (a) As per the passage, 'illiterate gweilo' is one who lacks fluency in Chinese.
116. (b) The passage nowhere talks about the professional standard of presentation at the conference.
117. (a) It is wrong as proved by Professor Jimmy Chan of HKU, who examined each of the Chinese characters for "intelligence".
118. (c) It is true because if Pakistan does not identify its post-Bangladesh identity it is bound to break up. Further it will throw the Asian subcontinent into a nuclear backlash.
119. (c) Refer the 8th sentence, "Like the former ..... two-nation theory".
120. (c) Referring the 7th sentence, "Terrorism in Kashmir ..... existential grounds."
121. (c) The last second sentence of the passage clearly states the defence minister, Mr. George Fernandes as a pacifist.
122. (b) The passage talks about the wretched conditions of the labourers and the lack of norms for the welfare of contract workers. The proposed reforms will definitely encourage the practice of hiring labourers on contract basis.
123. (a) The second sentence of the second para, "About 50,000 ..... slowly frittered away."
124. (a) Refer the second para, "A central objective ..... to the employee".
125. (b) Replace 'then' in (b) with 'than'. Sooner than is a comparative construction combining an adverb and a conjunction. It sets up parallel structures in a sentence.
126. (d) Clearly 'which' in (d) to be replaced by 'what'.
127. (b) 'Were' has to be replaced by 'was'. Here the subject being referred is the Principal.
128. (c) The subject is 'the number of colleges', which is singular. So 'are' has to be replaced by 'is'.
129. (a) Percentage increase is exports of petroleum and crude in India =  $\frac{4.5-2.3}{2.3} \times 100 = \frac{2200}{23} = 95.65$
130. (a) 5% exports  $\approx$  \$ 224.10 million  
 $\therefore$  Total exports =  $\frac{224.10 \times 100}{5} = \$ 4482$  million
131. (b) Exports of gems & jewellery in 1999 - 2000  $\approx$  16.6% = \$300  
 $\therefore$  Total exports =  $\frac{300 \times 100}{16.6}$   
 Total exports in 2002 - 2003 =  $\frac{300 \times 100}{16.6} \times \frac{250}{100}$  million  
 Exports of ore and minerals =  $\frac{3.6}{100} \times \frac{300 \times 250}{16.6} = \$ 162.65$  million
132. (b) Let India's total exports be x in 1998 - 99.  
 Exports of engineering goods =  $\frac{12.5x}{100} = x/8$   
 Exports in 2002 - 03 = 1.2x  
 Exports of engineering goods =  $\frac{16.6}{100} \times 1.2x = \frac{19.92x}{100}$   
 $\% \text{ increase} = \frac{\frac{19.92x}{100} - \frac{12.5x}{100}}{\frac{12.5x}{100}} = 59\%$  which is the closest to 57% in the options.
133. (c) Difference between maximum and minimum production of polypropylene = 21.0 - 15.4 = 5.6  
 Difference between maximum and minimum production of polyethylene = 108 - 20 = 88  
 $\therefore$  The ratio =  $\frac{88}{5.6} = 15.7 \approx 16$ .

134. (a) Maximum productions of polyethylene in 2004-05 = 100  
Minimum production of polyethylene in 2003-04 = 20  
 $\therefore$  Ratio =  $\frac{100}{20} = 5$ .
135. (b) Polypropylene is the product for which we see in the given data, that the production in 2003-04 equals production in 2004-05 for the maximum number (1) of times.
136. (b) For polyethylene the production in 2003-04 is greater than 2004-05 in 8 months.
137. (d) Minimum production of Polypropylene in 2004-05 = 17.8  
Minimum production of Polypropylene in 2003-04 = 15.4  
Difference = 2.4  
Difference in July's production of polyethylene =  $90 - 84 = 6$   
Ratio =  $\frac{2-4}{6} = 0.4$  times.
138. (a) The two years in which the capacities were augmented in all the sectors are 1993 and 1998 because in these years there is a increment in all of them.
139. (d) % increase in Hydel capacity over that of the previous years is maximum in.  
in 1991 =  $\frac{6610-6390}{6390} \times 100 = 3.44\%$   
in 1992 =  $\frac{6780-6610}{6610} \times 100 = 2.57\%$   
in 1993 =  $\frac{6965-6780}{6780} \times 100 = 2.72\%$   
in 1994 =  $\frac{7530-6965}{6965} \times 100 = 8.1\%$   
in 1995 =  $\frac{8500-7530}{7530} \times 100 = 12.88\%$   
in 1996 =  $\frac{9200-8500}{8500} \times 100 = 8.2\%$   
in 1997 =  $\frac{9880-9200}{9200} \times 100 = 7.39\%$   
in 1998 =  $\frac{10200-9880}{9880} \times 100 = 3.2\%$   
in 1999 =  $\frac{10450-10200}{10200} \times 100 = 2.4\%$   
in 2000 =  $\frac{11000-10450}{10450} \times 100 = 5.2\%$   
From above it is obvious that the % increase is maximum in 1995.
140. (b) % share of nuclear power in the total power capacity in 2000 =  $\frac{800}{30800} \times 100 = 2.597$ .
141. (b) Total power generated  
=  $\frac{40}{100} \times 15200 + \frac{50}{100} \times 10200 + \frac{90}{100} \times 800$   
=  $6080 + 5100 + 720 = 11900$  MW
142. (d) In 1990, the % share of thermal in total installed capacity  
=  $\frac{7900}{14710} \times 100 = 53.70 \approx 54$
143. (d) Growth between 1991 and 1999  
=  $\frac{16700-8200}{8200} \times 100 = 103.65\%$
144. (b) For projects completed in 2000, cost = Rs 250 crore  
Total cost (with tax) = Rs  $250 \times (1.1)^3 =$  Rs 332.75  
Total cost incurred for projects completed by 2000 = Rs 522.5 + Rs 1282.6 + Rs 332.75 = Rs 2140 crores
145. (c) This is another way of asking the previous question. Hence Lokhandwala has maximum number of rooms per crore of rupees.
146. (c) Cost incurred in projects completed in 1998 = Rs 225 + Rs 250 = Rs 475 crore  
Total cost including interest = Rs 475 + Rs 47.5 = Rs 522.5
147. (a) For projects completed in 1999 cost incurred = Rs 275 + Rs 235 + Rs. 250 + Rs 300 = Rs 1060  
Total cost including interest = Rs  $1060 \times \left(1 + \frac{10}{100}\right)^2$   
= Rs 1282.6 crores  
(Because, interest is for 1998 and 1999)
148. (a) Cost per room Lokhandwala = Rs  $\frac{225}{536} = 0.419$  ;  
Raheja = Rs  $\frac{250}{500} = 0.5$ ; IHCL = Rs  $\frac{275}{600} = 0.456$ ;  
ITC =  $\frac{300}{300} = 1$   
Hence Lokhandwala has minimum cost per room.
149. (c) Life insurance sold in Italy through agents = 14% of 2500 = \$350 million  
Life insurance sold in Spain through brokers and agents = 19% of 2000 = \$ 380 million  
Difference =  $380 - 350 =$  \$ 30 million (less)
150. (c) Total life insurance sold in these countries = 2500 + 2000 + 15000 + 10000 + 1000 + 20000 + 30000 = \$80500 million  
Non term insurance  
=  $(100 - 12.5)\%$  of total value =  $\frac{87.5}{100} \times 80500$   
= \$70437.5 million  $\approx$  \$70400 million
151. (c) Insurance sold by agents in India in 2002 = 14% of 15000 = \$2100 million  
Commission = 0.5% of 2100 = \$10.5 million

152. (c) Cost of advertisement per thousand copies for BW in 1997 =  $\frac{5000}{25} = \text{Rs. } 200$
- 1998 =  $\frac{20000}{30} = \text{Rs. } 666$
- ∴ Cost increased by Rs. 466.
153. (a) Percentage growth for :
- $$DS = \frac{49000 - 18000}{18000} \times 100 = 172\%$$
- In all others the growth is less than 100% as is clear from the graph.
154. (c) Charges by DSJ in 1998 per thousand =  $\frac{14000}{40} = \text{Rs. } 350$
- Charges by FI in 1999 per thousand =  $\frac{28000}{31} \approx \text{Rs. } 810$
- ∴ Decrease = Rs. (810 - 350) = Rs. 460
155. (a) DSJ  $\frac{14000}{40} = \text{Rs. } 350$
- B.I.  $\frac{30000}{60} = \text{Rs. } 500$
- BW  $\frac{20000}{30} = \text{Rs. } 667$
- F.I.  $\frac{17000}{31} = \text{Rs. } 548.$
156. (c) Total circulation figure in 1998 = 40,000 + 60,000 + 30,000 + 27,000 = 1,57,000
157. (b) Number of posts required =  $1 + \frac{144}{12} = 13.$
158. (c)  $\frac{1}{3}$  hour is equal to 20 minutes.
159. (c)  $\frac{1}{3}$  of 8 = 2.66
- $$66\frac{2}{3}\% \text{ of } 4 = \frac{200}{3} \times \frac{1}{100} \times 4 = \frac{8}{3} = 2.66$$
160. (c) Average of  $\sqrt{0.49}, \frac{3}{4}$  and 0.8 =  $\frac{0.7 + 0.75 + 0.8}{3} = 0.75$
161. (\*) Earlier there were five companies. SBI is the 6th.
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|----------|----------|----------|----------|
| 162. (a) | 163. (c) | 164. (c) | 165. (d) |
| 166. (a) | 167. (b) | 168. (b) | 169. (b) |
| 170. (a) | 171. (b) | 172. (b) | 173. (a) |
| 174. (d) | 175. (b) | 176. (d) | 177. (b) |
| 178. (b) | 179. (a) | 180. (c) | 181. (b) |
| 182. (c) | 183. (b) | 184. (a) | 185. (b) |
| 186. (b) | 187. (c) | 188. (a) | 189. (b) |
| 190. (c) | 191. (c) | 192. (a) | 193. (a) |
| 194. (a) | 195. (a) | 196. (d) | 197. (c) |
| 198. (a) | 199. (d) | 200. (c) |          |