3) When something starts getting bigger in size, it is said to be waxing.
4) Hatred or fear of foreigners is xenophobia.

29. 1) Somnabulism is an act of sleep walking.
2) When someone finds his metier, he gets his true vocation.
3) A maverick is an unorthodox or an independent minded person.
4) Matins are evening prayers.

Directions (Q. 30-32): In each of these questions, the sentences (A), (B), (C) and (D), when properly sequenced, form a coherent paragraph. Choose the most logical order of the sentences from among the four given choices so as to form a coherent paragraph.

30. A) In the past, the customised tailoring units were localised to the township or city and catered exclusively to domestic demand.
B) Traditionally, Indians 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 make small inroads into the domestic market in the 1980s.
D) The customised tailoring outfits have always been a major source of clothing for domestic market.
1) BCDA 2) BDAC 3) CDBA 4) DBAC

31. A) Such a system will help identify and groom executives for positions of strategists.
B) Evaluation of performance is more often than not done for the purpose of reward or punishment for past performance.
C) They must become an integral part of the executive system.
D) Even where the evaluation system is for one's promotion to assume higher responsibilities, it rarely includes terms that are a key for playing the role of strategists effectively, eg the skills of playing the role of change agent and creative problem solving.
1) DBAC 2) DCBA 3) CDBA 4) BDCA

32. A) Participation involves more than the formal sharing of decisions.
B) Through anticipation, individuals or organisations 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 characterised by the co-operation, dialogue and empathy.
1) BCDA 2) ABCD 3) CBAD 4) DABC

Directions (Q. 33-40): A set of sentences is given below in which the single underlined word is used as different parts of speech in English Grammar. To answer each of the questions 33 to 40, mark your answer as

1) if the underlined word is used as an Adjective.
2) if the underlined word is used as a Noun.
3) if the underlined word is used as an Adverb.
4) if the underlined word is used as a Preposition.

33. The evening was a round of pleasures.
34. A square peg in a round hole.
35. He came round to their belief.
36. The earth revolves round the sun.
37. I shall see you next Monday.
38. What next ?
39. I shall tell you more about it in my next.
40. He was sitting next to her.

Section II
Mathematical Skills

41. Running at the same constant rate, 6 identical machines can produce a total of 270 bottles per minute. At this rate, how many bottles could 10 such machines produce in 4 minutes?
1) 648 2) 1,800 3) 2,700 4) 10,800

42. If the length and width of a rectangular garden plot were each increased by 20 per cent, then what would be the per cent increase in the area of the plot?
1) 20% 2) 24% 3) 36% 4) 44%

43. The population of a bacteria culture doubles every 2 minutes. Approximately, how many minutes will it take for the population to grow from 1,000 to 500,000 bacteria?
1) 10 2) 12 3) 14 4) 18

44. Machine A produces bolts at a uniform rate of 120 every 40 seconds, and machine B produces bolts at a uniform rate of 100 every 20 seconds. If the two machines run simultaneously, then how many seconds will take them to produce a total of 200 bolts?
1) 22 2) 25 3) 28 4) 32

45. In a shipment of 120 machine parts, 5 per cent were defective. In a shipment of 80 machine parts, 10 per cent were defective. For the two shipments combined, what per cent of the machine parts were defective?
1) 6.5% 2) 7.0% 3) 7.5% 4) 8.0%

46. A student was asked to divide a number by 6 and add 12 to the quotient. He, however, first added 12 to the number and then divided it by 6, getting 112 as the answer. The correct answer should have been
1) 122 2) 118 3) 114 4) 124

47. The cost price of 20 articles is the same as the selling price of x articles. If the profit is 25%, then the value of x is
1) 25 2) 18 3) 16 4) 15

48. The population of a city increases at the rate of 4% per annum. There is an additional annual increase of 1% in the population due to the in-

flux of job seekers. Therefore, the % increase in the population after 2 years will be

1) 10 2) 10.25 3) 10.50 4) 10.75

49. A large cube is formed from the material obtained by melting three smaller cubes of 3, 4 and 5 cm side. What is the ratio of the total surface areas of the smaller cubes and the large cube?
1) 2:1 2) 3 :2 3) 25: 18 4) 27:20

50. The sides of a triangle are in the ratio of $\frac{1}{2}:\frac{1}{3}:\frac{1}{4}$.
If the perimeter is 52 cm, then the length of the smallest side is
1) 9 cm 2) 10 cm 3) 11 cm 4) 12 cm

51. The ratio of the rate of flow of water in pipes varies inversely as the square of the radius of the pipes. What is the ratio of the rates of flow in two pipes of diameters 2 cm and 4 cm?
1) 1 : 2 2) 2 : 1 3) 1 : 8 4) 4 : 1

52. A cylinder 6 cm in diameter is partially filled with water. A sphere 3 cm in diameter is gently dropped into the cylinder. To what further height will the water in the cylinder rise?
1) 6cm 2) 2cm
3) $\frac{1}{2}$ cm 4) Data is insufficient

53. A, B and C start running at the same time and from the same point around a circular track of 70 metres radius. A and B run clockwise and C counter clockwise. If A meets C every 88 seconds and B meets C every 110 seconds, then A meets B every ——— seconds.
1) 22 2) 198
3) 440 4) Data is insufficient

54. Half the girls and one-third of the boys of a college reside in the hostel. What fractional part of the student body is hostel dwellers if the total number of girls in the college is 100 and is 1/4 of the total strength?
1) 2/5 2) 5/12 3)1/5 4) 3/8

55. A tap can fill a tank in 16 minutes and another can empty it in 8 minutes. If the tank is already 1 /2 full and both the taps are opened together, will the tank be filled or emptied ? How long will it take before the tank is either filled or emptied completely as the case may be?
1) Emptied; 16 minutes
2) Filled; 8 minutes
3) Emptied; 8 minutes
4) Filled; 12 minutes

56. Excluding stoppages, the speed of a train is 45 kmph and including stoppages, it is 36 kmph. For how many minutes does the train stop per hour?
1) 10 2) 12 3) 15 4) 18

57. If x + y > 5 and x - y > 3, then which of the following gives all possible values of x ?
1) x > 3 2) x > 4 3) x > 5 4) x < 5

58. Which of the following integers is the square of an integer of every integer n?
1) $n^2 + 1$ 2) $n^2 + n$
3) $n^2 + 2n$ 4) $n^2 + 2n + 1$

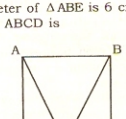
59. If x and y are negative, then which of the following statements is/are always true?
I. x + y is positive
II. xy is positive
III. x - y is positive
1] I only 2) II only
3) III only 4) I and III only

60. Three-fourth of a tank is full of water. If 5 litres are added to it, then four-fifth of the tank becomes full. What is the capacity of the tank?
1) 75 litres 2) 80 litres
3) 100 litres 4) 120 litres

61. A painting show drew crowds which doubled in number each day. If the show opened on Monday and the number of spectators on Saturday was 6400, then what was the number on the opening day?
1) 100 2) 200 3) 800 4) 80

62. A screw driver and a hammer currently have the same price. If the price of a screw driver rises by 5% and the price of hammer goes up by 3%, then how much more will it cost to buy 3 screw drivers and 3 hammers?
1) 3% 2)4% 3) 5% 4) 8%

63. ABCD is a four-sided figure with AB parallel to CD and AD parallel to BC. ∠ADC is a right angle.
If the perimeter of ΔABE is 6 cm, then the area of the figure ABCD is



1) $2\sqrt{3}$ sq cm 2) $4\sqrt{3}$ sq cm
3) 3 sq cm 4) Cannot be determined

64. A man who owned 25% of the equity capital of a certain company sold 1/3 of his holding last year and 5/12 of the remaining this year. What part of the business does he now own?
1) 1/5 2) 5/144
3) 7/72 4) 65/72

65. There are 10 pairs of socks in a drawer. What is the minimum number of socks that a person should pull out from the drawer to ensure that he gets at least two matching pairs of socks?
1) 12 2) 11 3) 5 4) 10

66. How many kg of pure salt must be added to a 30 kg of 2% solution of salt and water to increase it to a 10% solution?

1) 3 kg 2) 15 kg 3) $2\frac{2}{3}$ kg 4) $14\frac{1}{3}$ kg

67. A 25 m ladder is placed against a vertical wall of a building. The foot of the ladder is 7 m from the base of the building. If the top of the ladder slips 4 m, then the foot of the ladder will slide
1) 5 m 2) 8 m 3) 9 m 4) 15 m

68. The LCM of two numbers is 4800 and their HCF is 160. If one of the numbers is 480, then the second number is
1) 16 2) 16000 3) 160 4) 1600

69. A scooter costs Rs 25,000 when it is brand new. At the end of each year, its value is only 80% of what it was at the beginning of the year. What is the value of the scooter at the end of 3 years?
1) Rs 10,000 2) Rs 12,500
3) Rs 12,800 4) Rs 12,000

70. The sum of the digits of a 3-digit number is subtracted from the number. The resulting number is always
1) Divisible by 6 2) Not divisible by 6
3) Divisible by 9 4) Not divisible by 9

71. The probability of raining on day 1 is 0.2 and on day 2 is 0.3. What is the probability of raining on both the days?
1) 0.2 2) 0.1 3) 0.06 4) 0.25

72. A tree 6 m tall casts a 4 m long shadow. At the same time, a flag pole casts a shadow 50 m long. How long is the flag pole?
1) 75 m 2) 100 m 3) 50 m 4) 50 m

73. Given that 24 carat gold is pure gold; 18 carat gold is 3/4 gold and 20 carat gold is 5/6 gold, the ratio of the pure gold in 18 carat gold to the pure gold in 20 carat gold is
1) 5:8 2) 9: 10 3) 15:24 4) 8:5

74. A pond 100 m in diameter is surrounded by a circular grass walk 2 m wide. How many square metres of grass is there on the walk?
1) 98 π 2) 100 π 3) 204 π 4) 202 π

75. Village A has a population of 6800, which is decreasing at the rate of 120 per year. Village B has a population of 4200, which is increasing at the rate of 80 per year. In how many years will the population of the two villages be equal?
1) 9 2)11 3) 13 4) 16

76. Ravi's salary is 150% of Amit's salary. Amit's salary is 80% of Ram's salary. What is the ratio of Ram's salary to Ravi's salary?
1) 1 to 2 2) 2 to 3 3) 5 to 6 4) 6 to 5

77. x% of y is y% of
1) x 2)y/100 3) x/100 4) 100x

78. A copper sphere is drawn into a cylindrical wire of 4 metres length. If the diameter of the sphere is ten times the diameter of the wire, then what is the radius of the sphere?
1) 3 cm 2) 3 mm 3) 6 cm 4) 6 π mm

79. Two series of a question booklet for an aptitude test are to be given to twelve students. In how many ways can the students be placed in two rows of six each so that there should be no identical series side by side and that the students sitting one behind the other should have the same series?
1) $2\times{}^{12}C_6\times(6!)^2$ 2) 6! × 6!
3) 7! × 7! 4) None of these

80. Ajitha has forgotten the telephone number of her best friend Ruchita. All she remembers is that the number had 8 digits, ended with an odd number and had exactly one 9. How many possible numbers does Ajitha have to try to be sure that she gets the correct number?
1) 104×9^5 2) 113×9^5
3) 300×9^5 4) $4764\times9^5\times6!$

Section III
Data Analysis and Sufficiency

Directions (Q. 81-86): In each of these questions, there is given a statement followed by two assumptions marked A and B. You have to consider the statement and the following assumptions to decide which of the assumptions is implicit in the statement.

Mark your answer as
1) If only Assumption A is implicit
2) If only Assumption B is implicit
3) If either A or B is implicit
4) If neither A nor B is implicit

81. **Statement:** Detergents should be used to clean clothes.
Assumptions:
A. Detergents form more lather.
B. Detergents help to dislodge grease and dirt.

82. **Statement :** The private bus service in the city has virtually collapsed because of the ongoing strike of its employees.
Assumptions:
A. Going on strike has become the right of every employee.
B. People no more require the services of private bus operators.

83. **Statement:** In Mumbai, railway trains are indispensable for people in the suburbs to reach their places of work on time.
Assumptions:
A. Railway trains are the only mode of transport available in the suburbs of Mumbai.
B. Only railway trains run punctually.

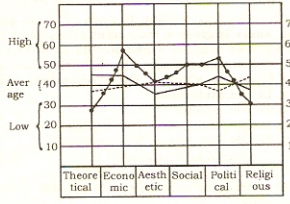
84. **Statement:** The government has decided to reduce the custom duty on computer peripherals.
Assumptions:
A. The domestic market price of computer peripherals may go up in near future.
B. The domestic manufacturers may oppose the decision.

85. **Statement:** I cannot contact you on phone from Karshik.
Assumptions:
A. Telephone facility is not available at Karshik.
B. Nowadays it is difficult to contact on phone.

86. **Statement:** Even with the increase in the number of sugar factories in India, we still continue to import sugar.
Assumptions:
A. The consumption of sugar per capita has increased in India.
B. Many of the factories are not in a position to produce sugar to their fullest capacity.

Directions (Q. 87-91): Use the graph given below to answer these questions.

Given in graph is the profile of values of a college student marked as personal profile. The normative profiles are given as average male profile and average female profile.



—— Average male profile
------ Average female profile
—•— Personal profile

87. Compare the three and state which of the given values is the highest in the personal profile of the student ?
1) Theoretical 2) Religious
3) Social 4) Economic

88. In the given personal profile, which is the value with the lowest score ?
1) Theoretical 2) Religious
3) Social 4) Aesthetic

89. In which value score, there exists maximum difference between average female profiles and personal profile?
1) Theoretical 2) Religious
3) Economic 4) Political

90. In which value score, there exists convergence between personal profile and average female profile?
1) Theoretical 2) Social
3) Aesthetic 4) None

91. In which value score, there exists a no difference state between the personal profile and average male profile?
1) Economic 2) Social
3) Aesthetic 4) None of these

Directions (Q. 92-95): Answer these questions based on the following table which gives the circulation in thousands of five English dailies in the four States during 2002-2003.

Newspapers	Kerala	Punjab	UP	HP
A	123	227	96	78
B	105	220	117.2	97
C	12.2	14.6	9.7	17.2
D	82.4	44	145	9.3
E	24.4	23	10	100

92. Of the five dailies, which has the highest number of circulation?
1) A 2) B 3) D 4) E

93. What is the difference in the circulation among the top two newspapers?
1) 14200 2) 15200 3) 13200 4) 12200

94. The newspaper A's circulation in Punjab is x times that of the newspaper B's circulation in HP. What is x?
1) 2.35 2) 2 3) 2.75 4) 2.25

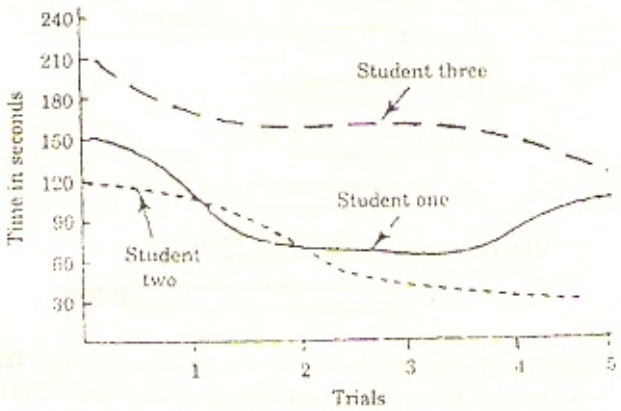
95. The ratio of the circulation of newspaper D in Punjab and HP is
1) 5.5 : 2 2) 5 : 2 3) 6 : 3.41 4) 5.5 : 1.16

Directions (Q. 96-98): Undergraduate students in a college yielded three sets of scores in "reaction time experiments" at different times.

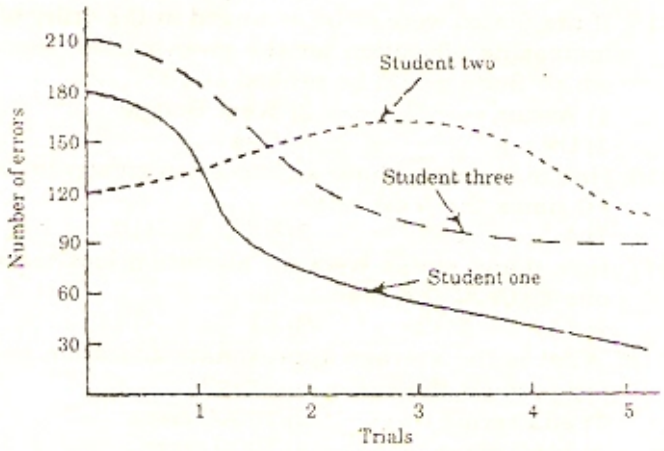
Cases	Set I	Set II	Set III
1	616	500	300
2	711	720	511
3	898	988	678
4	740	612	450
5	421	533	250
6	812	844	614
7	521	541	341
8	781	777	551
9	698	756	448
10	701	676	305

96. Which one of the following is true in respect of these scores?
    1) All sets are inter-related.
    2) Sets I and II show a positive correlation.
    3) Sets II and III are not related.
    4) None of these
97. According to the given data,
    1) Sets I and III have an inverse relationship.
    2) Sets II and III are negatively correlated.
    3) Both (1) and (2) are correct.
    4) Both (1) and (2) are wrong.
98. Which set shows the most efficient reaction time?
    1) Set I 2) Set II
    3) Set III 4) None of these

Directions (Q. 99-102): The questions are based on graphs 1 and 2. Graph 1 represents the performance of the three students for 'time taken' in a learning task across five trials while graph 2 represents 'errors made' across them.



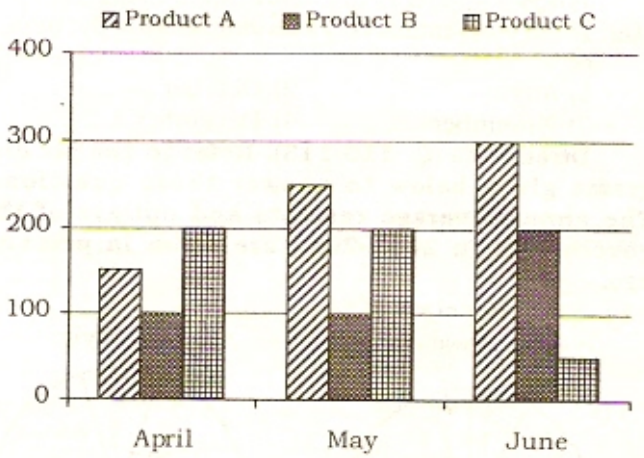
Graph 1



Graph 2

99. Which student is a better performer on the basis of time graph?
    1) Student two
    2) Student one
    3) Student three
    4) Cannot be said from the given information
100. Who is a better performer on the basis of the 'errors graph'?
    1) Student two 2) Student one
    3) Student three 4) None of them
101. Who is a better performer if improvements in both time as well as errors is taken into account?
    1) Student two 2) Student one
    3) Student three 4) None of them
102. Suppose an inverse relationship exists between 'time and errors', ie if a student tries to reduce time then the errors increase and vice versa. In which case is this relationship the most pronounced?
    1) Student two 2) Student one
    3) Student three 4) None of them

Directions (Q. 103-106): Answer these questions on the basis of the following graph which shows the production of items A, B and C during the months : April, May and June.



103. The percentage increase of production of item A from April to May is
    1) 33% 2) 66%
    3) 74% 4) 25%
104. Which item has maintained a rise over the three months?
    1) A 2) B
    3) C 4) B and C
105. The overall production of items A, B and C during April and May is in the ratio
    1) 1 : 1 2) 3 : 4
    3) 9 : 11 4) 11 : 9
106. The total production during the months of April, May and June of the three, items A, B and C are in the ratio
    1) 7 : 5 : 7 2) 7 : 4 : 4.5
    3) 7 : 4.5 : 4 4) 4.5 : 6 : 5

Directions (Q. 107-109): Refer to the graph given below which gives the circulation growth of GRAMSEWA magazine from July to December 2003.