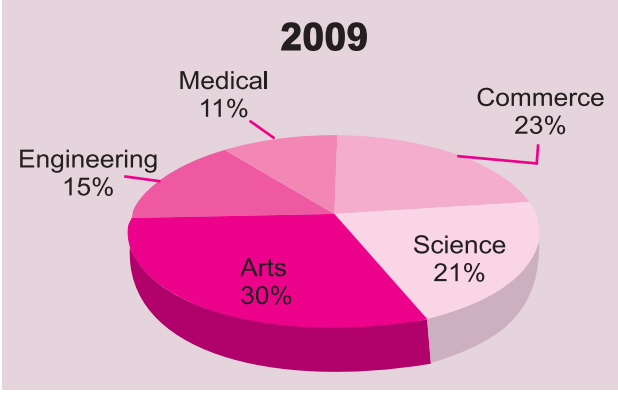
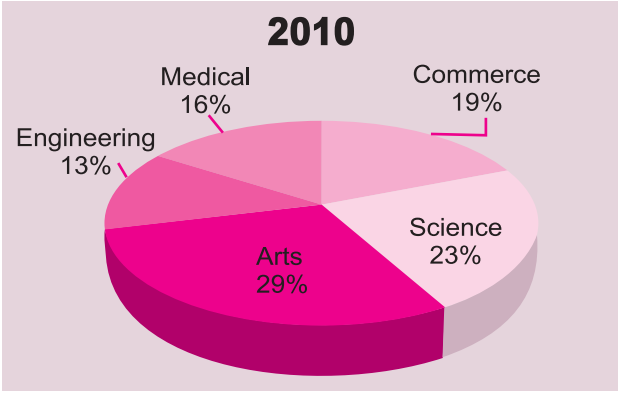
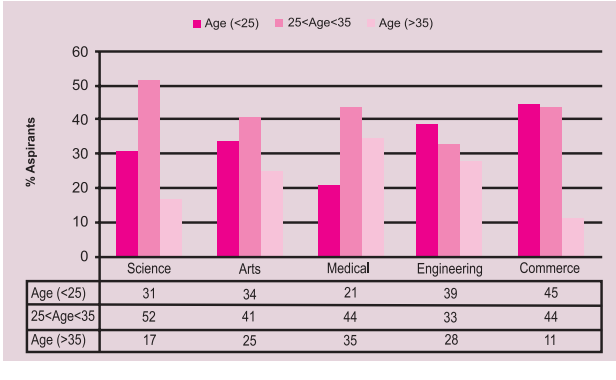
CSAT PAPER-2 APTITUDE TEST

SECTION-A: Data Interpretation+ Logical Reasoning





Field wise breakup of IAS aspirants



	Science	Arts	Medical	Engineering	Commerce
Age (<25)	31	34	21	39	45
25<Age<35	52	41	44	33	44
Age (>35)	17	25	35	28	11

1. If the total no. of aspirants in a 2009 is 2, 56,300; considering the stream and age breakup remains same in that year. Which stream has highest no. of young aspirants (<25 years)?

A) Arts **B)** Science
C) Commerce **D)** None of the above

2. If the total no. of aspirants in year 2010 is 2, 95,000; then which stream has the highest growth % from 2009 to 2010? (Use data from Q1)

A) Engineering
B) Medical
C) Can't be predicted
D) Could be predicted, but none of the above

3. Which age group constitutes the major portion of total aspirants in the year 2010? (Use data from Q1 and Q2)

A) Age <25 **B)** Age>35
C) 25<Age<35 **D)** Can't be predicted

4. For the year 2010 (Use data from Q3), which of the below mentioned group will have the largest no. of aspirants?

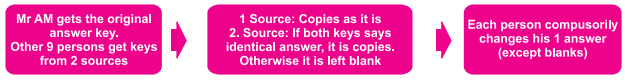
A) Engineering, Age<25 **B)** Medical, Age<25
C) Arts, Age>35 **D)** Science, 25<Age<35

5. Out of 2009 and 2010, which year has maximum % of Aspirants with age between 25 and 35?

A) 2009
B) 2010
C) 2010, only if aspirants @ 2010 > 256300
D) 2009, only if aspirants @ 2010 < 256300

Directions for Q6 to Q9:

One competitive examination paper was leaked in the year 2001. CBI after thorough investigation came out with the main leader **Mr. AM** along with other nine people- P, Q, R, S, T, U, V, W and X in this matter. The figure below shows the flow of information from Mr AM to other people:



Paper consisted of 150 questions. CBI neglected the chances of two or more of them introducing the wrong answer to same question. After getting the final correct answer key, CBI displayed the following sheet.

Name	Wrong answer No.	Blank answers No.
P	46	-
Q	96	46, 90, 25
R	27, 56	17, 46, 90
S	17	-
T	46, 90	-
U	14, 46	92,90
V	25	-
W	46, 92	-
X	27	17, 46, 90

6. Who among the following must have two sources?

A) P **B)** Q
C) R **D)** S

7. How many people (excluding Mr AM, needed to make answer key before R could make his answer key?

A) 3 **B)** 4
C) 5 **D)** None of these

8. Both T and W are sources to?

A) U **B)** X
C) Q **D)** None of these

9. Which of the group has the same sources?

A) P, S and V **B)** T and W
C) None **D)** Both A and B

Directions for Q10 to Q12:

There is group of 200 students, out which everyone takes one or more subjects out of A, B and C. The function **F()** indicated no. of students studying particular subject/ subjects.

F(C) > F (A) > F(B) > F(exactly two subjects) > F(All three subjects) $\geq$ 1

10. Find the minimum value of F (B)?

A) 1 **B)** 3
C) 5 **D)** 0

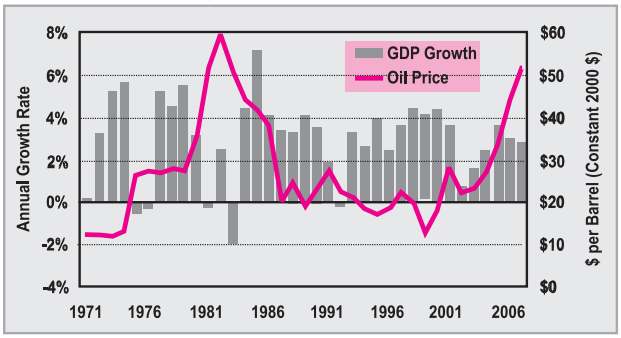
11. If F(C) = 100, then find the maximum value of F (All three subjects)?

A) 25 **B)** 24
C) 23 **D)** 22

12. Maximum value of F (Only A)?

A) 187 **B)** 190
C) 193 **D)** 196

Directions for Q13 to Q14: (Oil Price and Economic Growth, 1971-2006)



Year	Gross Domestic Product Growth Rate	Oil Price (2000 constant dollars per barrel	Year	Gross Domestic Product Growth Rate	Oil Price (2000 constant dollars per barrel)
1971	3.36%	$12.45	1989	3.54%	$22.88
1972	5.29%	$11.87	1990	1.88%	$27.23
1973	5.76%	$13.03	1991	-0.17%	$22.57
1974	-0.50%	$26.12	1992	3.33%	$21.33
1975	-0.19%	$27.31	1993	2.67%	$18.57
1976	5.33%	$27.09	1994	4.02%	$17.27
1977	4.62%	$27.98	1995	2.50%	$18.71
1978	5.57%	$27.23	1996	3.70%	$22.07
1979	3.16%	$35.76	1997	4.50%	$19.96
1980	-0.23%	$51.94	1998	4.17%	$12.98
1981	2.52%	$59.61	1999	4.45%	$17.89
1982	-1.94%	$50.81	2000	3.66%	$28.26
1983	4.52%	$44.46	2001	0.75%	$22.41
1984	7.19%	$42.32	2002	1.60%	$23.13
1985	4.13%	$38.37	2003	2.51%	$26.81
1986	3.47%	$20.42	2004	3.64%	$33.78
1987	3.38%	$24.45	2005	3.07%	$44.46
1988	4.13%	$19.38	2006	2.87%	$51.68

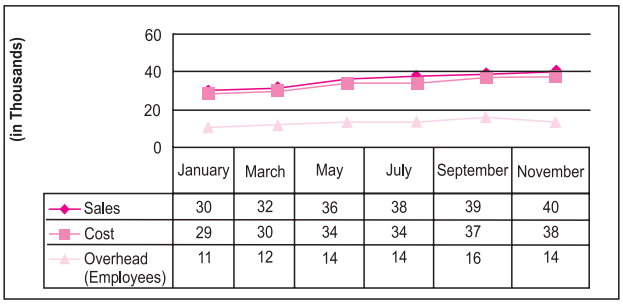
13. Out of the total four times downfall of GDP growth rate, in the past 30 years – 1973-74, 1979-80, 1990-1991 and 1999-2000;which one has the largest downfall?

A) 1973-1974 **B)** 1979-1980
C) 1990-1991 **D)** 1999-2000

14. Out of the total no. of oil prices fall down, what fraction of them followed with economic breakdown?

A) 6 **B)** 7
C) 9 **D)** 13

Directions for Q15 to Q18:



15. Month of least profit is?

A) September **B)** January
C) July **D)** None of these

16. Approx average salary of employee in this firm is such that profit earned is only distributed in form of salary. Find the month with minimum average salary?

A) September **B)** July
C) January **D)** March

17. In which month the total increase in the cost least as compared to two months ago?

A) March **B)** September
C) July **D)** May

18. In which month is the percentage increase in sales over the sales two months before, the second highest?

A) March **B)** September
C) July **D)** None of these

Directions for Q19 to Q23:

Party	Assembly election	
	Seat Contested	Seats won
BJP	414	174
SP	284	110
BSP	298	67
INC	128	33
BKKP	37	8
AICT	37	4
JD	53	7
CPM	23	3
CPI	8	2
SMP	7	2
Independent / Others	1876	14
Total		**424**

In order to form Government; a single part OR an alliance of at least two parties must have no. of seats more than 212 (i.e. half of total seats won 424)

19. What is the average no. of candidate contesting in Assembly election per seat contested?

A) 7.44 **B)** 6.25
C) 7.25 **D)** None of these

20. Considering SP, BSP, INC and JD forming the alliance in order to show the majority; what is the overall percentage winning % of that alliance?

A) 51.1 **B)** 63.2
C) 59.1 **D)** None of these

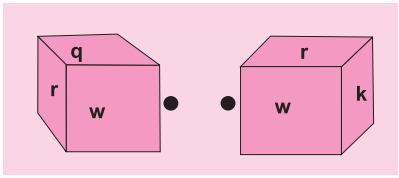
21. What is the least success percentage for any party barring independents & others?

A) 12.04 **B)** 10.81
C) 19.24 **D)** 17.4

22. What percentage of total candidates were selected?
A) 10.2 **B)** 13.2
C) 11.1 **D)** 15.6

23. Which is the highest wining % party (on the basis of seat won vs. seat contested)?
A) 33 per cent **B)** 22 per cent
C) 42 per cent **D)** None of these

24. Here is a picture of two alike cubes. The hidden faces indicated by the dots have the same alphabet on them. Which alphabet-q, r, w, or k is on the faces indicated by the dots?



A) q **B)** w
C) r **D)** None of these

25. Three piles of chips—pile I consists one chip, pile II consists of chips, and pile III consists of three chips- are to be used in game played by Anita and Brinda. The game requires:
a) That each player in turn take only one chip or all chips from just one pile.
b) That the player who has to take the last chip loses.
c) That Anita now have her turn.
From which pile should Anita draw in order to win?
A) I **B)** II
C) III **D)** Data insufficient

Directions for Q26 to Q29:
Ten students – A, B, C, D, E, F, G, H, I and J are chosen to represent in three sports – tennis, badminton and table tennis. The badminton team has one student less than the tennis team. A,B and C are not tennis player, individually or as a group. D, E and F are not in badminton team individually or as a group. G,H and I are not in the Table tennis team, individually or as a group. J is not a badminton player.

26. Which of the following could be table tennis player?
A) J/B/G **B)** J/C/F
C) J/D/E/F **D)** J/B/C/D

27. Of those listed, what is the maximum number of table tennis players?
A) 6 **B)** 7
C) 9 **D)** None of these

28. If tennis team has one member, who of the following must be a table tennis player?
A) A **B)** B
C) J **D)** None of the above

29. If A and G are the only badminton players, how many students must be in the table tennis team?
A) A **B)** B
C) D **D)** Data insufficient

Directions for Q30 to Q32:
In a famous short-time game named CROSS, each player puts a mark (O OR x) one by one inside a 3x3 grid (9 slots). Two players face the following situation in between the game.

X	O	
X	O	
O	O	X

A player will put his mark in a line such that:
(a) it already contains two of his own marks (for winning)
(b) it already contains two of the opponents marks (for saving the game)
It is known that player always gives priority to Winning over saving.

30. What could be the mark of the person who started the game?
A) X **B)** O
C) X or O **D)** Data insufficient

31. The player who wins the match uses which mark?
A) X **B)** O
C) X or O **D)** Data insufficient

32. Probability of A (with symbol O), winning the game if both players freely mark anywhere?
A) 0.76 **B)** 1
C) 0.5 **D)** 0.33

Directions for Q33 to Q34:
In a banquet hall, there are total 100 bulbs with 100 respective switches for the same (Both Numbered 1 to 100 respectively). Manager of that hall ask his 100 workers to perform a task. Initially all bulbs are switched OFF. He asks 1st worker to go inside the hall and switch ON all the OFF lights. Then he asks the second worker to perform the opposite task of switching OFF, but only for the every second bulb. Third one is asked to change the state for every third bulb (switch OFF the ON lights and vice versa) and so on till the 100th worker.

33. What is possible no. of ON lights at the end of this activity?
A) 16 **B)** 8
C) 11 **D)** Data insufficient

34. What could be the maximum no. of ON lights at the end?
A) 100 **B)** 99
C) 9 **D)** 10

Directions for Q35 to Q36:
A FMCG Biscuit company EATWELL faced a peculiar problem. Out of 10 lots of production with 1000 packets each, one lot failed due to some problem. As a result of which Quality department needs to find out the failed lot. Each biscuit packet weighs 100 gms. normally for the passed lots, but failed lot has all the packets having weight less by one gram i.e. 99 gms each.

35. If they are given a weigh balance with weight display, then atleast how many weighing steps are required to surely find the faulty lot?
A) 10 **B)** 9
C) 2 **D)** None of the above

36. In case instead of display weighing balance, normal balance is given; then find the minimum no. of steps required to surely find the faulty lot?

A) 10 **B)** 5
C) 4 **D)** 3

Directions for Q37 to Q38:
Each digit, 1, 2, 3, 4, 5, 6, 7, 8 and 9 is represented by a different letter A, B, C, D, E, F, G, H and I but not necessarily in this order. Further, each of A + B + C, C + D + E, E + F + G and G + H + I is equal to 13.

37. Find the value of E?
A) 5 **B)** 7
C) 4 **D)** can't be determined

38. What is the sum of C, E and G?
A) 7 **B)** 9
C) 11 **D)** Cannot be determined

Directions for Q39 to Q40:
Mystery grid consists of 9 distinct number (1 to 9), arranged in such a way that:

L		P
M	O	Q
N		R

(L x M x N) = (M x O x Q) = (P x Q x R)

39. Find the value of number 'O'?
A) 3 **B)** 2
C) 6 **D)** Data insufficient

40. Find the value of LxMxN?
A) 64 **B)** 72
C) 8 **D)** Data insufficient

Directions for Q41 to Q42:
In a lot of 8 balls, one ball is defective in terms of weight. You are given a classical weighing balance used to compare weights using a balance.

41. If it is known that the defective ball is heavier than the normal ones, then find the minimum no. of weighing steps required to find defective ball from the lot?
A) 2 **B)** 3
C) 4 **D)** None of these

42. Without having any idea of weight abnormality, find the minimum weighing steps required to find the odd ball?
E) 3 **F)** 4
G) 5 **H)** None of these

Directions for Q43 to Q46:
Four persons in a society were compared in terms of their first, middle and last names. The surnames are Arora, Bhaskar, Chopra, Das and Eashwar. Each of them has different first and middle names.

- Mr Das and Mr Eashwar both not named Ram
- Either both Mr. Bhaskar and Mr. Chopra named Shyam, or both are not
- Either Mr. Bhaskar and Mr. Arora are both named Tram, or Mr. Chopra and Mr. Das are both named Tram
- Four of them have a first or middle name of Ram, three of them have first or middle name of Shyam, two of them have a first or middle name of Tarun and one of them has a first or middle name of Alam

43. Which of the following pair have the same name?
I) Mr. Arora and Mr. Eashwar
J) Mr. Bhaskar and Mr. Chopra
K) Mr. Chopra and Mr. Arora
L) No such pair exist

44. Which of these is a possible combination?
A) Tram Ram Arora **B)** Alam Ram Chopra
C) Ram shyam Chopra **D)** None of these

45. Who is named Alam?
A) Mr. Arora **B)** Mr. Bhaskar
C) Mr. Chopra **D)** Data insufficient

46. Mr. Eashwar is known as?
A) Ram Shyam **B)** Tram Ram
C) Shyam alam **D)** Tram Shyam

Directions for Q47 to Q50:
Two of Sachin, Laxman and Rahul made century at Mohali Test cricket match. The shorter of Sachin and Laxman is the older of the two century hitters. The younger of Laxman and Rahul is the shorter of the two century hitters. The The taller of Sachin and Rahul is the younger of two century hitters.

47. Who is older between two century hitters?
A) Sachin **B)** Laxman
C) Rahul **D)** Cannot be determined

48. Who is younger between two century hitters?
A) Sachin **B)** Laxman
C) Rahul **D)**Cannot be determined

49. Who is taller between two century hitters?
A) Sachin **B)** Laxman
C) Rahul **D)** Cannot be determined

50. Who is shorter between two century makers?
A) Sachin **B)** Rahul
C) Laxman **D)** Cannot be determined

SECTION-B: Quantitative Aptitude

51. From a square sheet ABCD a incircle C (Center O and radius=R) is cut-off from that area. Infinite circles are drawn in 4 sectors obtained by removing circle from square sheet; such that they always touch two edges of square along with the main circle C. Find the remaining area of the square sheet?
A) $(4-69*pi+8*pi)R^2$
B) $(4-69*pi+4*pi)R^2$
C) $(4-69*pi+8*sqrt(2)*pi)R^2$
D) None of the above

52. On a table 10 coins are placed but all covered. It is preknown that there are 4 coins showing tails and remaining as heads. One starts uncovering any one, and then flip it and place again on the table. This is repeated 7 times with all random selection of coin each time. After uncovering 9 coins, there are 5 Heads and 4 tails. What could said about the last coin?
A) Tail
B) Head
C) Data insufficient
D) Tail if last flipped coin was Tails

53. In the expansion of $(a+b+c)^{99}$, what is the probability of getting a term like $a^x b^y c^z$ with x+y=50; given that $0 \le x,y,z \le 99$?
E) 50 / 1000000 **F)** 51 / 1000000
G) 101 / 1000000 **H)** 100 / 1000000

54. $X=\sqrt{63} - \sqrt{13}$ and $Y = \sqrt{57} - \sqrt{7}$; then which of the following is correct?

A) X = Y **B)** X < Y
C) X > Y **D)** X > 2Y

55. In triangle ABC, AB=40 cm, BC=30 cm and BA=50 cm. Three arcs with same radius r=7 cm are cut from it with three vertices as center. Find the remaining area of the triangle?
A) 500 cm2 **B)** 423 cm^2
C) 523 cm2 **D)** Data insufficient

56. A tunnel has two ends A and B; a fly is at point A of the tunnel and on train is entering the tunnel from point B (other end). At moment when train starts from B towards A, fly starts moving towards the engine (front), and then comes back to the end A. It repeats until train engine reaches point A of tunnel. Find the total distance covered by the fly. (Speed of fly=30 km/hr and that of train = 60 km/hr, Tunnel length=10 km)
A) 2 km **B)** 5 km
C) 1 km **D)** Data insufficient

57. If $\log_{10}(2x-3) + \log_{10}(x-3) = \log_{10}(x^2-3x+1)$, then x =?
A) 4 and 2 **B)** 4
C) 2 **D)** No values possible

58. The number $N = 55^3 + 17^3 - 72^3$ is not divisible by which of the following prime no.?
A) 11 **B)** 5
C) 17 **D)** 7

59. 'A' deposited amount of Rs 10,000 in Fixed-interest fund with net interest rate (per annum) = 10% for 3 years (Interest compounded annually). 'B' invested same amount in same fund for 3 years, but took dividend option in order to get interest in hand at the end of year, instead of re-investing that interest amount. Find the ratio of interest earned by 'A' and 'B'?
A) 1.1 **B)** 0.9
C) 2.2 **D)** Data insufficient

60. A can do a piece of work in 20 days and B can do it in 30 days. They work together for 10 days and then A goes away. In how many days will B finish the remaining work?
A) 1 **B)** 9
C) 5 **D)** None of the above

61. If a, b, c and d are four positive real numbers such that abcd=1, what is the minimum value of (1+a) (1+b) (1+c) (1+d)?
A) 4 **B)** 1
C) 16 **D)** 18

62. If x.y.z=1 (x,y,z '"0); find the value of the expression:

$$\frac{1}{1+x+\frac{1}{y}}+\frac{1}{1+x+\frac{1}{z}}+\frac{1}{1+z+\frac{1}{x}}=?$$

A) x+y+z **B)** 1/(x+y+z)
C) 1 **D)** 1/x + 1/y + 1/z

63. A watch which gains uniformly is 2 mins slow at noon on Monday and it is 4 mins 48 sec fast at 2 p.m. on the following Monday. When did it show the correct time?
A) Wed, 4 PM **B)** Wed, 2 PM
C) Tue, 2 PM **D)** Tue, 3 PM

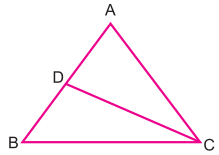
64. Find the value of x=4 + 66 + 444 + 6666 + 44444 + …….. upto 2n terms?
A) 4/9{[10(102n-1)/99]-n} + 6/9{[100(102n-1)/99]-n}
B) 4/9{[10(102n-1)/99]-n} + 6/9{[10(102n-1)/99]-n}
C) 4/9{[10(10n-1)/99]-n} + 6/9{[100(10n-1)/99]-n}
D) None of the above

65. Find area enclosed by: $|x|+|y-2| = 1$?
A) 12 **B)** 2
C) 1 **D)** 0.5

66. Function F(n) is given by F(n+1) + F(n-1) = F(n); find the smallest positive integral value of p such that F(n+p) = F(n)?
A) 2
B) 5
C) 6
D) Data insufficient

67. A five digit number is formed out of digits 1, 3, 5, 7, 9. What is the sum of all such nos. (Without repeating)?
A) 6666000 **B)** 6666600
C) 666660 **D)** None of the above

68. In the triangle ABC (D lies on AB), BC=12 cm, DB=9 cm, CD=6 cm and angle(BCD)=angle(BAC). What is the ratio of perimeter of triangle ADC to that of triangle BDC?



A) 7/9 **B)** 6/9
C) 8/9 **D)** 5/9

Instruction for Q 69 and Q 70. Each question is followed by two statements, I and II. Answer each question according to following information.
A) Answered by one of the statement alone but not by the other
B) Answered by using either statement alone
C) Answered by both the statements together, but cannot be answered with any statement alone
D) Cannot be answered even by both statements together

69. Is $a^{44} < b^{11}$, given that a=2 and b is integer?
I. b is even
II. b is greater than 16

70. What are the unique values of b and c in the equation 4x2+bx+c if one of roots of the equation is (-1/2)?
I. Second root is ½
II. The ratio of c and b is 1

71. Jay tiled a 15 feet by 21 feet rectangular ballroom with one-foot- square tiles. When he finished, he drew both diagonals connecting opposite corners of the room. What is the total number of tiles that the diagonals passed through?
A) 63 **B)** 64
C) 66 **D)** 68

72. A man is walking across a railroad bridge that goes from point A to point B. He starts at point A, and when he is 3/8 of the way across the bridge, he hears a train approaching. The train's speed is 60 mph (miles per hour). The man can run fast enough so that if he turns and runs back toward point A, he will meet the train at A, and if he runs forward toward point B, the train will overtake him at B. How fast can the man run?
A) 12 **B)** 15
C) 18 **D)** None of these

73. If a+b+c=3 and a(^2)+b(^2)+c(^2)=5 and a(^3)+b(^3)+c(^3)=7; what is a(^4)+b(^4)+c(^4)?
A) 9 **B)** 8
C) 15 **D)** Data insufficient

74. A pharmacist has 8 liters of a 15 percent solution of acid. How much distilled water must she add to reduce the concentration of acid to 10 percent?
A) 12 **B)** 4
C) 8 **D)** None of these

75. By installing a $120 thermostat that reduces the temperature setting at night, a family hopes to cut its annual bill for heating oil by 8 percent, and thereby recover the cost of the thermostat in fuel savings after 2 years. What was the family's annual fuel bill before installing the thermostat?
A) $700 **B)** $750
C) $780 **D)** $800

76. A woman is walking down a downward-moving escalator and steps down 10 steps to reach the bottom. Just as she reaches the bottom of the escalator, a sale commences on the floor above. She runs back up the downward moving escalator at a speed five times that which she walked down. She covers 25 steps in reaching the top. How many steps are visible on the escalator when it is switched off?
A) 15 **B)** 25
C) 18 **D)** 20

77. There are 21 slips labeled from 1 to 21.what is the probability that 6 slips drawn in random are in AP?
A) $34/{}^{21}C_6$ **B)** $35/{}^{21}C_6$
C) $34/{}^{21}C_5$ **D)** $35/{}^{21}C_5$

78. When doing product of two different: 2 digit numbers,ab reversed the digits of one of the numbers and found the product increased by 1224.if the other number is less than 20 ,what is new product?
A) 1477 **B)** 1400
C) 1575 **D)** None of these

79. A Candle Burns in 6 Hrs.Another Candle of the same height and width burns in 8 Hrs. After How Many Hours the height of the first candle will be half of the second Candle?
A) 4.4 **B)** 4.8
C) 4 **D)** 3.6

80. What is the number of scores possible in a 150 question IAS paper, where 1/3 mark is deducted for every wrong answer and 1 mark is awarded for every correct answer?
A) 597 **B)** 601
C) 598 **D)** 600

81. A person travels the first 1/3 of distance to be covered at a speed of x km/hr, the 2nd 1/3rd at 2x km/hr and the final 1/3rd at 3x km/hr. What is the average speed for the entire journey?
A) 2x/3 **B)** x/3
C) 18x/11 **D)** 11x/18

82. Triangle XYZ is an isosceles triangle in which the sides in which the sides xy and xz are 15 each and the base yz is 18. ABCD is a square, the side AB being on yz and cd in xz and xy resp. find the area of ABCD?
A) 51.84 **B)** 52.6
C) 50.8 **D)** 64

83. A rhombus has sides 10cm each and the circle that is inscribed in it has radius 1.5cm. What is the area of the rhombus in cm^2
A) 36 **B)** 40
C) 25 **D)** 30

84. O is the centre of a circle. XP is a tangent at X.Angel YXP = 50°. Find the measure of the arc XOY?
A) 120 deg. **B)** 100 deg.
C) 90 deg. **D)** 75 deg.

85. Company A pays 5.5% on shares of Rs.100, and another pays at the rate of 3.5% On shares of Rs.10 each. If the price of the former be Rs.150.00 and of the later Rs.15.00, compare the rates of interest which the shares return to a purchaser?
A) 86.37 per cent **B)** 88.34 per cent
C) 91.23 per cent **D)** 76.89 per cent

86. There are 2 similar triangles. The lengths of the sides of one of them are 4 cm, 6cm and 8 cm. If perimeter of the 2nd triangle is 162 cm. Find the length of the corresponding sides of the other triangle?
A) 30/40/50 **B)** 38/44/70
C) 36/54/72 **D)** 33/44/55

87. 3 plots having an area of 132,204 & 228 sq.m respectively are to be subdivided into equalized flower beds. If the breadth of a bed is 36 meters find the maximum length that a bed can have.
A) 4 **B)** 2
C) 8 **D)** None of these

88. Four bells begin to ring together and ring respectively at interval of 4 ,5,6 and 10 seconds. How many times will they ring together in one hour, including the one at the start ?
A) 60 **B)** 61
C) 59 **D)** 58

89. An alloy contains Zinc and nickel in the ratio 2 : 3 and another alloy contains Zinc and nickel in the ratio 3 : 4. If equal amounts of both the alloy are melted together , then the ratio of zinc and nickel in the resulting alloy is?
A) 41:29 **B)** 29:41
C) 30:70 **D)** 29:71

90. One year ago jai and Ajay's ages was 3 : 4 one year hence the ratio of their ages will be 4 : 5 the present age of jai is?
A) 5 **B)** 7
C) 6 **D)** 11

91. Three friends divided some bullets equally. After all of them shot 4 bullets the total number of bullets remaining is equal to the bullets each had after division. Find the original number divided.
A) 9 **B)** 15
C) 18 **D)** 16

92. There is a 50m long army platoon marching ahead. The last person in the platoon wants to give a letter to the first person leading the platoon. So while the platoon is marching he runs ahead, reaches the first person and hands over the letter to him and without stopping he runs and comes back to his original position. In the mean time the whole platoon has moved ahead by 50m. The question is how much distance did the last person cover in that time.

Assuming that he ran the whole distance with uniform speed.

A) 120.7 **B)** 133.1
C) 108.5 **D)** None of these

93. If you take a marker & start from a corner on a cube, what is the maximum number of edges you can trace across if you never trace across the same edge twice, never remove the marker from the cube, & never trace anywhere on the cube, except for the corners & edges?

A) 13 **B)** 9
C) 11 **D)** 7

94. There are 3 persons X, Y and Z. On some day, X lent tractors to Y and Z as many as they had. After a month Y gave as many tractors to X and Z as many as they have. After a month Z did the same thing. At the end of this transaction each one of them had 24. Find the tractors each originally had?

A) 39,20,18 **B)** 6,42,24
C) 39,21,12 **D)** None of these

95. A certain street has 1000 buildings. A sign-maker is contracted to number the houses from 1 to 1000. How many zeroes will he need?

A) 192 **B)** 181
C) 171 **D)** None of these

96. In a sports contest there were m medals awarded on n successive days (n > 1). On the first day 1 medal and 1/7 of the remaining m - 1 medals were awarded. On the second day 2 medals and 1/7 of the now remaining medals was awarded; and so on. On the nth and last day, the remaining n medals were awarded. How many days did the contest last, and how many medals were awarded altogether?

A) 6/36 **B)** 5/35
C) 4/20 **D)** None of these

97. Vipul was studying for his examinations and the lights went off. It was around 1:00 AM. He lighted two uniform candles of equal length but one thicker than the other. The thick candle is supposed to last six hours and the thin one two hours less. When he finally went to sleep, the thick candle was twice as long as the thin one. For how long did Vipul study in candle light?

A) 3.5 hrs. **B)** 2 hrs.
C) 3 hrs. **D)** None of these

98. A worker earns a 5% raise. A year later, the worker receives a 2.5% cut in pay, & now his salary is Rs. 22702.68. What was his salary to begin with?

A) 22300 **B)** 20000
C) 21231 **D)** None of these

99. At 6'o a clock ticks 6 times. The time between first and last ticks is 30 seconds. How long does it tick at 12'o.

A) 60 **B)** 63
C) 66 **D)** None of these

Direction for questions 100 to 102: Answer the questions based on the following information.

Function A(x, y) is defined only for non-negative integers.
A(x, y) = y + 1 if x = 0
= A(x – 1, y) if x not equal to 0 but y = 0
= A(x–1, A(x, y –1)) if x not equal to 0 and y not equal to 0

100. A(1, 3) = ?

A) 5 **B)** 4
C) 3 **D)** None of the above

101. A(2, 0) = ?

A) 5 **B)** 4
C) 3 **D)** None of the above

102. A(0, A(1, 1)) is the same as:

A) A(1, 1) **B)** A(0, A(1, 0))
C) A(1, 2) **D)** None of the above

103. Which of the following divides $144^2+169^2+144\times169$?

A) 157 **B)** 467
C) 149 **D)** None of these

104. Let A and B be two solid spheres such that the surface area of B is 300% higher than the surface area of A. The volume of A is found to be k% lower than the volume of B. The value of k must be?

A) 52.5 per cent **B)** 87 per cent
C) 92.5 per cent **D)** None of these

105. When the curves $y = \log_{10}x$ and $y = x^{-1}$ are drawn in the x–y plane, how many times do they intersect for values $x \geq 1$?

A) 0 **B)** 1
C) 2 **D)** None of these

106. At the end of year 1998, Shepard bought nine dozen goats. Henceforth, every year he added p% of the goats at the beginning of the year and sold q% of the goats at the end of the year where p>0 and q>0. If Shepard had nine dozen goats at the end of year 2002, after making the sales for that year, which of the following is true?

A) p<q **B)** p>q
C) p>2q **D)** Data insufficient

107. The function $f(x)=|x-2|+|2.5-x|+|3.6-x|$, where x is a real number, attains a minimum at

A) x=1 **B)** x=2.5
C) x=3 **D)** None of these

108. How many even integers n, where, $100 \leq n \leq 200$ are divisible neither by seven nor by nine?

A) 38 **B)** 39
C) 40 **D)** 41

109. Twenty-seven persons attend a party. Which one of the following statements can never be true?

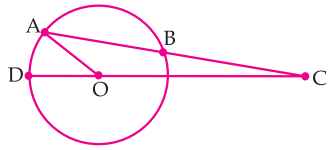
A) There is a person in the party who is acquainted with all the twenty-six others.
B) Each person in the party has a different number of acquaintances.
C) There is a person in the party who has an odd number of acquaintances.
D) In the party, there is no set of three mutual acquaintances.

110. A vertical tower OP stands at the center O of a square ABCD. Let h and b denote the length OP and AB respectively. Suppose $\angle APB = 60^\circ$ then the relationship between h and b can be expressed as

A) $2b^2 = h^2$ **B)** $2h^2 = b^2$
C) $3b^2 = 2h^2$ **D)** $3h^2 = 2b^2$

111. In the figure below, AB is the chord of a circle with center O. AB is extended to C such that BC = OB. The straight line CO is produced to meet the circle at D. If $\angle ACD$ = y degrees and $\angle AOD$ = x degrees such that x = ky, then the value of k is

A) 2 **B)** 12
C) 3 **D)** 3/2



112. In the triangle ABC, AB = 6, BC = 8 and AC = 10. A perpendicular dropped from B, meets the side AC at D. A circle of radius BD (with center B) is drawn. If the circle cuts AB and BC at P and Q respectively, the AP:QC is equal to

A) 2/8 **B)** 2/9
C) 3/5 **D)** 3/8

113. Three circles A, B and C have a common centre O. A is the inner circle, B middle circle and C is outer circle. The radius of the outer circle C, OP cuts the inner circle at X and middle circle at Y such that OX = XY = YP. The ratio of the area of the region between the inner and middle circles to the area of the region between the middle and outer circle is:

A) 2/5 **B)** 2/10
C) 3/5 **D)** 3/10

114. How many numbers between 1 to 1000 (both excluded) are both squares and cubes?

A) 20 **B)** 0
C) 1 **D)** 5

115. If P(E)=0.7 and P(F)=0.3; E and F are independents events. Find the value of P(E or F)?

A) 0 **B)** 1
C) 0.3 **D)** None of the above

116. What is the probability that when a pair of six-sided dice are thrown, the sum of the numbers equals 5?

A) 2/9 **B)** 1/2
C) 1/9 **D)** 1/3

117. If there are 30 red and blue marbles in a jar, and the ratio of red to blue marbles is 2:3, what is the probability that, drawing twice, you will select two red marbles if you return the marbles after each draw?

A) 2/25 **B)** 2/50
C) 4/25 **D)** 5/25

118. What is the probability that a card from a deck will be either an ace or a king?

A) 12/13 **B)** 2/13
C) 1/13 **D)** None of the above

119. What is the probability that the total of two dice will be greater than 8 given that the first die is a 6?

E) 2/3 **F)** 1/2
G) 1/3 **H)** None of the above

120. A college has 10 basketball players. A 5-member team and a captain will be selected out of these 10 players. How many different selections can be made?

A) 2260 **B)** 1260
C) 1450 **D)** 1660

121. A man bets on number 16 on a roulette wheel 14 times and losses each time. On the 15th span he does a quick calculation and finds out that the number 12 had appeared twice in the 14 spans and is therefore, unable to decide whether to bet on 16 or 12 in the 15th span. Which will give him the best chance of winning on the bet that he takes? (Roulette has numbers 1 to 36)

A) 12
B) 16
C) Data insufficient
D) Data sufficient but none of the above

122. There is a safe with a 5 digit number as the key. The 4th digit is 4 greater than the second digit, while the 3rd digit is 3 less than the 2nd digit. The 1st digit is thrice the last digit. There are 3 pairs whose sum is 11. Find the number.

A) 65292 **B)** 65293
C) 65294 **D)** 65291

123. Consider a number 235, where last digit is the sum of first two digits i.e. 2 + 3 = 5.
How many such 3-digit numbers are there?

A) 42 **B)** 45
C) 40 **D)** 55

124. Two identical pack of cards A and B are shuffled throughly. One card is picked from A and shuffled with B. The top card from pack A is turned up. If this is the Queen of Hearts, what are the chances that the top card in B will be the King of Hearts?

A) 0.0192378 **B)** 0.0382378
C) 0.0232338 **D)** None of the above

125. There are 3 ants at 3 corners of a triangle; they randomly start moving towards another corner. What is the probability that they don't collide?

A) 2/4 **B)** 2/8
C) 1/8 **D)** 2/16

126. What is the four-digit number in which the first digit is 1/3 of the second, the third is the sum of the first and second, and the last is three times the second?

A) 1350 **B)** 1349
C) 1351 **D)** 1355

127. If you were to dial any 7 digits on a telephone in random order, what is the probability that you will dial your own phone number? (Assume that your telephone number is 7-digits)

A) 1 in 10,000,000 **B)** 10 in 10,000,000
C) 7 in 10,000,000 **D)** None of the above

128. 3 blocks are chosen randomly on a chessboard. What is the probability that they are in the same diagonal?

A) 0.002688 **B)** 0.00002688
C) 0.2688 **D)** None of the above

129. What are the chances that at least two out of a group of fifty people share the same birthday?

A) 50% **B)** 99%
C) 200/655 % **D)** 97%

130. A tank can be filled by pipe A in 30 minutes and by pipe B in 24 minutes. Outlet pipe C can empty the full tank in X minutes. If the tank is empty initially and if all the three pipes A, B and C are opened simultaneously, the tank will NEVER be full. Give the maximal possible value of X.

A) 11 hr 20 min **B)** 13 hr 20 min
C) 13 hr **D)** None of the above

131. What is the remainder left after dividing 1! + 2! + 3! + … + 100! By 7?

A) 1 **B)** 2
C) 3 **D)** 5

132. 12 members were present at a board meeting. Each

member shook hands with all of the other members before & after the meeting. How many hand shakes were there?
A) 132 **B)** 61
C) 134 **D)** 62

133. If you look at a clock and the time is 3:15.What is the angle between the hour and the minute hands?
A) 0 deg **B)** 7.5 deg
C) 8.1 deg **D)** 12.5 deg

134. A cube is made of a white material, but the exterior is painted black. If the cube is cut into 125 smaller cubes of exactly the same size, how many of the cubes will have atleast 2 of their sides painted black?
A) 40 **B)** 22
C) 44 **D)** 11

135. There is a grid of 20 squares by 10 squares. How many different rectangles are possible?
A) 11500 **B)** 11550
C) 15550 **D)** 55550

SECTION-C: Critical Reasoning

Directions for Q136 to Q138:
FACTS: deal with pieces of information that one has heard, seen or read, and which are open to discovery or verification.
INFERENCES: are conclusions drawn about the unknown, on the basis of the known.
JUDGEMENTS: are opinions that imply approval or disapproval of persons, objects, situations, and occurrences in the past, the present or the future.

136.
I. According to all statistical indications, the Sarva Shiksha Abhiyan has managed to keep pace with its ambitious goals.
II. The legislature is advocating vigorously against intrusion of judiciary in parliamentary affairs.
III. It is estimated that that 30% of Indians live below poverty line.
IV. The economies of the industrialized western world derive 20% of their income from the sale of all kinds of arms.
A) IIFJ **B)** IFJF
C) FFJF **D)** FIFF

137.
I. Economies of underdeveloped countries depend heavily on loads doled out by IMF.
II. IMF attaches innumerable conditions to the loans it lends.
III. Thus, IMF has replaced small money lenders by becoming a giant money lender.
IV. Domestic compulsions must be forcing the underdeveloped countries to approach IMF for loans.
A) JJFJ **B)** JFII
C) FIJJ **D)** FFJI

138.
I. Every mother has only the best interests of her children at her heart.
II. Because we had three wars with our neighboring country, we should keep our armed forced ready for the fourth one.
III. The footprint warned Robinson Crusoe that there was someone else on the island.
A) JJI **B)** IJI
C) FJF **D)** JII

Answer Q139 to Q143 independently;

139. The increased concentration of salt in the bay, which is the result of recent drought and high temperatures, will cause many fish to die. Shrimp, however, can tolerate high salt levels; the shrimp industry will not, therefore, be hurt by the increased concentration of salt.
Which of the following statements, if true, would weaken the argument above?
A) Some fish will migrate to areas that have lower concentrations of salt.
B) Lack of rainfall for extended periods of time lowers the water level of bays.
C) The organisms on which young shrimp feed cannot survive in such salty waters.
D) Increased water temperature often causes shrimp to multiply more quickly.

140. According to recent dental research, bacteria around the gum line produces a substance that in sufficient amounts induces preterm labor in pregnant women and clogging of arteries, both of which add to payouts by health insurers to medical-service providers. In response, ABC health-insurance company has begun to provide additional dental benefits, including coverage for one additional cleaning by a professional hygienist or dentist each year, to pregnant women and to people proven to be at high risk of developing heart disease.
The insurance company's response described above would be most likely to minimize the company's payouts to medical-service providers if which of the following were also true?
A) Accumulation of the substance that induces preterm labor can be prevented by daily use of certain inexpensive mouthwashes.
B) It often takes at least a year for the substance that induces clogging of the arteries to accumulate to a dangerous level.
C) The daily dental-hygiene habits of pregnant women and heart-disease patients, as a group, are similar to those of the general population.
D) The risk of developing heart disease is greater for individuals with a family history of heart disease than for those with no such history.

141. People tend to estimate the likelihood of an event's occurrence according to its salience; that is, according to how strongly and how often it comes to their attention.
By placement and headlines, newspapers emphasize stories about local crime over stories about crime elsewhere and about many other major events.
It can be concluded on the basis of the statements above that, if they are true, which of the following is most probably also true?
A) The language used in newspaper headlines about local crime is inflammatory and fails to respect the rights of suspects.
B) The coverage of international events in newspapers is neglected in favor of the coverage of local events.
C) Readers of local news in newspapers tend to

overestimate the amount of crime in their own localities relative to the amount of crime in other places.
D) The press is the news medium that focuses people's attention most strongly on local crimes.

142. Banning cigarette advertisements in the mass media will not reduce the number of young people who smoke. They know that cigarettes exist and they know how to get them. They do not need the advertisements to supply that information.
The above argument would be most weakened if which of the following were true?
A) Seeing or hearing an advertisement for a product tends to increase people's desire for that product.
B) Banning cigarette advertisements in the mass media will cause an increase in advertisements in places where cigarettes are sold.
C) Advertisements in the mass media have been an exceedingly large part of the expenditures of the tobacco companies.
D) Those who oppose cigarette use have advertised against it in the mass media ever since cigarettes were found to be harmful.

143. A conservation group in the United States is trying to change the long-standing image of bats as frightening creatures. The group contends that bats are feared and persecuted solely because they are shy animals that are active only at night.
Which of the following, if true, would cast the most serious doubt on the accuracy of the group's contention?
A) Bats are steadily losing natural roosting places such as caves and hollow trees and are thus turning to more developed areas for roosting.
B) Bats are the chief consumers of nocturnal insects and thus can help make their hunting territory more pleasant for humans.
C) Bats are regarded as frightening creatures not only in the United States but also in Europe, Africa, and South America.
D) Raccoons and owls are shy and active only at night; yet they are not generally feared and persecuted.
Directions for Q145 and Q146:
In each question below is given a statement followed by two assumptions numbered I and II. You have to consider the statement and the following assumptions and decide which of the assumptions is implicit in the statement.
A) If only assumption 1 is implicit
B) If only assumption 2 is implicit
C) If both 1 and 2 are implicit
D) If neither 1 nor 2 is implicit

Directions for Q144 and Q145:

144. Statement: The integrated steel plants in India would no longer have to depend on imports for continuous casting refractory.
Assumptions:
1. Continuous casting refractory are needed by India.
2. Continuous casting refractory are in demand.

145. Statement: Without reforming the entire administrative system, we cannot eradicate corruption and prejudice from the society.
Assumptions:
1. The existence of corruption and prejudice is good.
2. There is enough flexibility to change the administrative system.

Directions for Q146 and Q147:
For every question a statement followed by two courses of action are given. Base on inference from the statement, answer in following manner:
A) Only I follow
B) Only II follows
C) Either I or II follows
D) Neither I nor II follows

146. Statement: Since its launching in 1881, Vayudoot has so far accumulated losses amounting to Rs 153 crore.
Courses of Action:
1. Vayudoot should be directed to reduce wasteful expenditure and to increase passenger fare.
2. An amount of about Rs 300 crore should be provided to Vayudoot to make the airliner economically viable.

147. Statement: The Asian Development Bank has approved a $285 million loan to finance a project to construct coal ports by Paradip and Madras Port Trusts.
Courses of Action:
1. India should use financial assistance from other international financial organisations to develop such ports in other places.
2. India should not seek such financial assistance from the international financial agencies.

Directions for Q148 to Q151: The questions in this set ask you to match definitions to particular situations. For each question, you will be given a definition and four possible answer choices. Read each definition and all four choices carefully, and find the answer that provides the best example of the given definition. Answer each question solely on the basis of the definition given.

148. A Tiebreaker is an additional contest or period of play designed to establish a winner among tied contestants. Which situation below is the best example of a Tiebreaker?
A) At halftime, the score is tied at 28.
B) Mary and Megan have each scored three goals in the game.
C) The referee tosses a coin to decide which team will have possession of the ball first.
D) The Sharks and the Bears each finished with 14 points, and they are now battling it out in a five-minute overtime.

149. An Informal Gathering occurs when a group of people get together in a casual, relaxed manner. Which situation below is the best example of an Informal Gathering?
A) The book club meets on the first Thursday evening of every month.
B) After finding out about his promotion, Jeremy and a few coworkers decide to go out for a quick drink after work.
C) Mary sends out 25 invitations for the bridal shower she is giving for her sister.
D) Whenever she eats at the Mexican restaurant, Clara seems to run into Peter.

150. Reentry occurs when a person leaves his or her social system for a period of time and then returns. Which

situation below best describes Reentry?
A) When he is offered a better paying position, Jacob leaves the restaurant he manages to manage a new restaurant on the other side of town.
B) Catherine is spending her junior year of college studying abroad in France.
C) Malcolm is readjusting to civilian life after two years of overseas military service.
D) After several miserable months, Sharon decides that she can no longer share an apartment with her roommate Hilary.

151. A Guarantee is a promise or assurance that attests to the quality of a product that is either
(1) given in writing by the manufacturer or
(2) given verbally by the person selling the product.
Which situation below is the best example of a Guarantee?
A) Melissa purchases a DVD player with the highest consumer ratings in its category.
B) The salesperson advises Curt to be sure that he buys an air conditioner with a guarantee.
C) The local auto body shop specializes in refurbishing and selling used cars.
D) Lori buys a used digital camera from her coworker who says that she will refund Lori's money if the camera's performance is not of the highest quality.

Directions for Q152 to Q154:
Some groups want to outlaw burning the flag. They say that people have fought and died for the flag and that citizens of the United States ought to respect that. But I say that respect cannot be legislated. Also, most citizens who have served in the military did not fight for the flag, they fought for what the flag represents. Among the things the flag represents is freedom of speech, which includes, I believe, the right for a citizen to express displeasure with the government by burning the flag in protest.

152. Which of the following best expresses the main point of the passage?
A) Only veterans care about the flag-burning issue.
B) Flag burning almost never happens, so outlawing it is a waste of time.
C) Flag burning will be a very important issue in the next election.
D) To outlaw flag burning is to outlaw what the flag represents.

153. Which of the following, if true, would weaken the speaker's argument?
A) An action is not considered a part of freedom of speech.
B) People who burn the flag usually commit other crimes as well.
C) The flag was not recognized by the government until 1812.
D) State flags are almost never burned.

154. Which of the following is similar to the argument made by the speaker?
A) The rich should not be allowed to "buy" politicians, so the Congress should enact campaign finance reform.
B) The idea of freedom of religion also means the right not to participate in religion, so mandated school prayer violates freedom of religion.
C) The Constitution guarantees freedom to own property, so taxes should be illegal.
D) Convicted felons should not have their convictions overturned on a technicality.

SECTION-D: Fill in the blanks & sentence correction

Directions for Question No. 155-164:
The following question tests the correctness and effectiveness of expression of the candidates. The following questions present a sentence, part of which is underlined. The candidates are given four options to correctly choose the answerers to the underlined portion. Choose the answer that produces the most effective sentence and eliminate the grammatical error.

155. The UPSC this year promised to attract ***an even greater amount of candidates*** to appear in the Civil Services Exam of 2011.
A) An even larger amount of candidates
B) An amount of candidates even greater
C) A number of candidates even larger
D) An even greater number of candidates

156. The public's widespread belief in the existence of ***the UFO's and their general curiosity about extra-terrestrial life has*** generated considerable interest in science fiction.
A) UFO's and they are generally curious about extra-terrestrial life which has.
B) UFO's as well as their general curiosity about extra-terrestrial life, have
C) UFO's as well as its general curiosity about extra-terrestrial life, has
D) UFO's as well as general curiosity about extra-terrestrial life, have

157. Many of the unemployed currently enrolled with MNREGA hope ***for the exchanging of their unemployment for new careers that are challenging.***
A) For exchanging unemployment for new careers that will challenge them
B) To exchange their unemployment with new careers that will be new and challenging
C) To exchange their unemployment for new and challenging careers
D) To exchange their unemployment and find careers that will be new and challenging

158. ***Having recently published a series of science fiction books influenced by Sufism, Doris Lessing will likely*** be remembered best for her early novels about Africa.
A) She has recently published a series of science fiction books influenced by Sufism, and Doris Lessing should likely
B) Although She has recently published a series of science fiction books influenced by Sufism, Doris Lessing is likely to
C) In spite of recently publishing a series of science fiction books influenced by Sufism, Doris Lessing should likely
D) The above Statement is errorless

159. To control student unease over the impending economic collapse, the government in the United Kingdom ordered local official ***should censor records of what were their communities' unemployment figures.***
A) Would do the censorship of records of their

communities' unemployment figures
B) Censoring records of unemployment figures in their communities
C) The censoring of a record of unemployment figures in their communities
D) To censor records of unemployment figures in their communities

160. Many IAS probationers find the first year of probation quite challenging and are unable to balance responsibilities such as attending class, ***reading assignments, and to write*** papers with the wide and sometimes bewildering array of new social opportunities.
A) Reading assignments and writing
B) To read assignments, and write
C) To read assignments, and to write
D) To read assignments, writing

161. Nigeria ***not only has one of the world's largest populations, with over 72 million people, but also has*** one of the world's fastest-growing populations, with an annual growth rate of 3.5%.
A) Not only has one of the world's largest populations, with over 72 million people, it also has
B) Not only has one of the world's largest populations, with over 72 million people, but moreover it is
C) Has one of the world's largest populations, with over 72 million people but also has
D) The sentence is errorless and is correct it itself

162. ***Of ONGC and NTPC, a higher percentage of revenues are spent on insurance by the former than the latter spends on employee salaries.***
A) ONGC spends a larger percentage of its revenues on insurance than NTPC does on employee salaries.
B) A larger percentage of ONGC's revenue is spent on insurance than NTPC spends on employee salaries.
C) In ONGC they spend a larger percentage of revenues on insurance than NTPC does on employee salaries.
D) In ONGC, a larger percentage of the revenues are spent on insurance than is spent on employee salaries in NTPC.

163. ***It was decided by the Indian Meteorological Department to purchase a forecasting system that combines 50 computers linked together with each other to form the world's 6th largest supercomputer.***
A) A forecasting system that combines 50 computers linked together with each other to form the world's 6th largest supercomputer was selected to be purchased by the Indian Meteorological Department
B) It was decided by the Indian Meteorological Department to purchase a forecasting system that links 50 computers together to form the world's 6th largest supercomputer
C) The Indian Meteorological Department decided to purchase a forecasting system that links 50 computers together to form the world's 6th largest supercomputer.
D) The Indian Meteorological Department decided to purchase a forecasting system that combines 50 computers linked together with each other to from the world's 6th largest supercomputer.

164. Scientist at Indian Institute of Science, Bangalore have found that the human body can use protein derived from whey more efficiently than it can use ***protein from other sources such as soy, egg or drinking milk.***
A) Protein from other sources like soy, eggs or drinking milk
B) Protein from other sources such as soy, eggs or milk
C) Protein which it has derived from other sources such as soy, eggs or drinking milk
D) Its protein from other sources such as soy, egg or milk

SECTION-E: Reading Comprehensions

Directions: The Questions in this section are based on the contents of the passages. After reading the passages, the candidates should choose the best answer to each question.
Questions 165-171 are based on the following passage: -

PASSAGE -1

The rich analyses of Fernand Braudel and his fellow Annales historians have made significant contributions to historical research. In a departure from traditional historical approaches, the Annales historians assume (as do Marxist) that history cannot be limited to a simple recounting of conscious human actions, but must be understood in the context of forces and material conditions that underline human behavior. Braudel was the first Annales historian to gain widespread support for the idea that history should synthesize data from various social sciences, especially economics, in order to provide a broader view of human societies over time(although Febvre and Bloch, founders of the Annales school, had originated this approach). Braude conceived of history as the dynamic interaction of 3 temporalities. The first of these, the even ementielle, involved short-lived dramatic events, such as battles, revolutions, and the actions of great men, which had preoccupied traditional historians like Carlyle. 'Conjunctures' was Braudel's term for larger, cyclical processes that might last up to half a century. The longue duree, a historical wave of great length, was for Braudel the most fascinating of the 3 temporalities. Here he focused on those aspects of everyday life that might remain relatively unchanged for centuries. What people ate, what they wore, their means and routes of travel—for Braudel these things create 'structures' that define the limits of potential social change for hundreds of years of a time.
Braudel's concept of the longue duree extended the perspective of historical space as well as time. Until the Annales school, historians has taken the juridical political unit-the nation-state, duchy or whatever-as their starting point. Yet, when such enormous time spans are considered, geographical features may well have more significance for human populations than national borders. In his doctoral thesis, a seminal work on the Mediterranean during the reign of Philip II, Braudel treated the geo-history of the entire region as a "structure" that had exerted myriad influences on human life ways since the first settlements on the shores of the Mediterranean Sea. And so the reader is given such arcane information as the list of products that came to Spanish shore from North Africa, the seasonal routes followed by Mediterranean sheep and their shepherds, and the cities where the best ship timber could be bought. Braudel has been faulted for the

imprecision of his approach. With his Rabelasian delight in concrete detail, Braudel vastly extended the realm of relevant phenomena, but this very achievement made it difficult to delimit the boundaries of observation, a task necessary to beginning any social investigation. Further, Braudel and other Annales historians minimize the differences among the social sciences. Nevertheless, the many similarly designed studies aimed at both professional and popular audiences indicate that Braudel asked significant question which traditional historians had overlooked.

165. The primary purpose of the passage is to
A) Show how Braudel's work changed the conception of Mediterranean life held by previous historians
B) Evaluate Braudel's criticism of traditional and Marxist histography
C) Illustrate the relevance of Braudel's concepts to other social sciences
D) Outline some of Braudel's influential conceptions and distinguish them from conventional approaches

166. The author refers to the work of Febvre and Bloch in order to
A) Illustrate the limitations of the Annales tradition of historical investigation
B) Suggest the relevance of economics to historical investigation
C) Debate the need for combining various sociological approaches
D) Show that previous Annales historian anticipated Braudel's focus on economics

167. According to the passage, all of the following are aspects of Braudel's approach to history except that he
A) Attempted to unify various social sciences
B) Studies social and economic activities that occurred across national boundaries
C) Pointed out the link between increased economic activity and the rise of nationalism
D) Examined seemingly unexciting aspects of everyday life

168. The passage suggests that, compared to traditional historians, Annales historians are
A) More interested in other social sciences than in history
B) More critical of the achievements of famous historical figures
C) More skeptical of the validity of most economic research
D) More interested in the underlying context of human behavior provided by social structure

169. The author is critical of Braudel's perspective for which of the following reasons?
A) It seeks structures that underlie all forms of social activity
B) It assumes a greater similarity among the social sciences than actually exists
C) It fails to consider the relationship between short-term events and long-term social activity
D) It clearly defines boundaries for social analysis

170. The passage implies that Braudel would consider which of the following as exemplifying the longue duree?
(i) The prominence of certain crops in the diet of a region
(ii) The annexation of a province by the victor in a war
(iii) A reduction in the population of an area following a disease epidemic
A) i only
B) iii only
C) i and ii only
D) ii and iii only

171. Which of the following statements is most in keeping with the principles of Braudel's work as described in the passage?
A) All written history is the history of social elites.
B) The most important task of historians is to define the limits of potential social change
C) Those who ignore history are doomed to repeat it
D) People's historical actions are influenced by many factors that they may be unaware of

Questions 172-175 are based on the following passage: -

PASSAGE-2

The years following the Civil War in Brail brought many changes to the Southern states, promoting a large emigration of US citizens-9000 to 40000 people- primarily from the South. In one particular case, this migration of Southerners, many from Alabama and Texas, resulted from direct invitation. Emperor Pedro II of Brazil, in an effort to expand his country, appealed for colonist from the US South. Dom Pedro II recognized the value these Southerners could have for Brazil in the form of agricultural and educational knowledge. He advertised for citizens from all over the South and even from some of the Northern states to immigrate to Brazil.

Because they recognized an opportunity to rebuild their lives without yielding their Southern heritage to Northern improvements after the war, many Southerners accepted Dom Pedro's offer. After founding Vila Americana, one of the most important of the American colonies in Brazil, the Southern immigrants did not remain in isolation. They interacted with and even married local Brazilians and other new colonists. While becoming integrated into the existing society, these colonists maintained their distinctive American culture. American industrial technology allowed the colonists to improve farming implements, such as ploughs, rakes, harrows and hoes, for their fellow Brazilians. Housing also improved with the introduction of chimneys and gutters. The colonist's emphasis on education and industrial skills contributed to Brazil's success in business, many of the country's public transportation systems were built or run by American-founded companies. Today, Vila Americana, maintaining this original level of excellence, has the highest education and income levels per capita of any city in Brazil.

172. The primary purpose of the passage is to
A) Analyze the source of the change in the lives of Southerners after the civil war
B) Discuss the emigration of US Southerners to Brazil after the Civil War and their benefits to their new country
C) Describe how the aftermath of the Civil War changed the lives of all the citizens of the Southern US
D) Demonstrate how Brazil adopted the heritage of the Southern US and attracted Southerners wanting to revive

the antebellum South

173. Which of the following does the author suggest about the importance of the emigration of Southerners to Brazil?

A) Without the Southern presence, Brail would never have been settled

B) The Southerner's sole purpose in immigrating was to introduce new inventions to the Brazilians

C) If the Southerners had not emigrated, they would have gone to prison for war crimes

D) The Southerners arrival had a great impact on the development of education and agriculture in Brazil

174. According to the passage, all of the following statements are correct, EXCEPT

A) The Southerners brought their heritage and innovative ideas with them to Brazil

B) Many Southerners were looking for a new beginning after the Civil War, independent of Northern interference

C) The Influence of the Southerners had a great and lasting effect on Brazil

D) The Southerners fled to Brazil to escape US government policies on farming and education

175. The author states that Southerners moved to Brazil "because they recognized an opportunity to rebuild their lives without yielding their Southern heritage to Northern improvements after the war" in order to….

A) Explain how fears about losing their traditional culture made Southerners prefer emigration to rebuilding their lives in the US

B) Describe the process by which immigrants from Southern US states replaced native Brazilian culture with their own heritage

C) Suggest Dom Pedro II's advertising campaign to tempt Southerners to uproot their lives and move to Brazil.

D) Illustrate the preference native Brazilians had for the heritage of the Southern US over the improvement's Northerners might provide

Questions 176-179 are based on the following passage:

PASSAGE-3

One of the first attempts to peer into the living human brain was carried out by a neurosurgeon named Wilder Penfield in the 1950's. Penfield opened the skulls of conscious epileptic patients under local anesthesia, and induced a mild electric current into their brains in an attempt to pinpoint the source of seizure activity and then removed that piece of tissue. What he found was even more remarkable than what he initially set out to do. By stimulating different points on the lower parts of the brain (the temporal lobes), he elicited distinct and vivid memories in his patients. These memories were more precise than usual memories, and incorporated different modalities such as visual and auditory sense impressions. Penfield's patients reported different types of memories (a moment from childhood, a recollection of a tune). When the same location in the temporal lobe was stimulated again the same memory reappeared. Could it be that a physical map of memories exists within our brains?

One might mistakenly conclude from Penfield's experiment that particular memories are stored in specific sites in the brain such that the memory of one's grandmother is stored in one area and the memory of what one had for dinner is stored in a unitary superstructure, is also inaccurate. Although it is true that the temporal lobes play a critical role in memory process, evidence from brain imaging studies strongly indicates that memory is divided among a range of distinct but interacting neural systems, each contributing to a unique feature of memory. One system may be involved to a large extent in encoding or retrieval, while another may deal with the process of consolidating memory. One specific structure is more active in emotional memory, while others are employed in working memory,, semantic multiple memory systems are constantly sharing information and modulating one another.

176. The most suitable title of this passage would be

A) The life and work of Neurosurgeon Wilder Penfield

B) The Physical Organization of Memory in the Human Brain

C) The Cognitive Functions of the Temporal Lobes

D) Historical Progress in the Search for an Epilepsy Cure

177. Which of the following is mentioned in Passage with regard to the neural systems of memory?

A) A specific brain structure cannot be involved in more than one aspect of memory

B) The same neural system is primarily involved in both emotional memory and semantic memory

C) The lower parts of the brain play a critical role in memory processes

D) There is a specific brain region that stores the memory of last night's dinner

178. When the author talks about a unitary superstructure he is referring to…

A) The brain as a whole

B) A theory of memory organization preferred by most scientists

C) The cortex of the brain

D) A specific brain region in which all memories are stored

179. All of the following are mentioned in the passage as part of the surgical procedure Penfield performed on his patients EXCEPT

A) Penfield stimulated different points in his patients' temporal lobes

B) Penfield's epileptic patients were not totally anesthetized during the surgery

C) The patients' brains were given small electric shockduring surgery

D) Penfield removed the pieces of tissue responsible for inducing seizures in his patients

PASSAGE-4

Questions 180-185 are based on the following passage: -

The study of the outbreak of Severe Acute Respiratory Syndrome(SARS) between the late fall 2002 and the summer of 2003 is a fascinating look into how exponentially fast contagious viruses can spread throughout the world's population if unchecked. Before the virus was officially contained, there were a reported 8442 confirmed cases of SARS, of which 916 were fatal- a mortality rate of roughly 10%. Of all the SARS-related

deaths, however age seems to play the most important factor: almost 50% of the SARA fatalities were over 65 years old. SARS is a very viral infection of the respiratory system caused by a corona virus known as SARS-associated corona virus (SARS-CoV). Corona viruses are also believed to be the root of almost all the common colds found in humans. SARS is spread through close contact with an infected person; it's possible to contact SARS by simply talking in close proximity to an infected person, touching them, or touching a surface contaminated with the respiratory droplets propelled by a sneeze or a cough. Following exposure to SARS-CoV, it usually takes between 2 to 10 days for symptoms to arise. The first symptoms are comparable to coming down with the flu. One may suffer from fever, headache, muscle pains, shortness of breath, sore throat, and a dry cough. Many SARS patients eventually develop pneumonia. Off all these symptoms, though, the only one that is universal among all confirmed SARS patient s is a very high fever, usually well over 100 degrees F. The first recorded case of SARS occurred in November 2002 in Foshan City in China's southern province of Guangdong. Analysis conducted by the WHO has revealed several groups of outbreaks in different areas of Guangdong during this time period, yet curiously, no links have been uncovered among those first initial human cases, and they seem to have occurred independently of each other. However, scientists have discovered the SARS virus in three different animals that were being sold in the live markets of Guangdong at the time; each considered a delicacy in China.

SARS seems to have been spread outside the province by a Chinese doctor who treated Guangdong SARS patients and unknowingly became infected himself. The doctor went to Hong Kong to attend a wedding, where he stayed on the 9th floor of the Metrople Hotel. At the Metrople, he somehow transmitted SARS to 16 other hotel guests; all who stayed don the ninth floor. Those infected guests were the original seed that spread the virus to almost 30 countries, with the largest number of cases found in China, Hong Kong, Taiwan, Singapore and Canada. Of those original 16 guests was a Chinese-American businessman who transmitted the virus to 20 hospital workers in Singapore. He was then transferred to a Honk Kong hospital where he died, but his suspicious illness and death sparked an investigation by the WHI into SARS that brought the virus to the World's attention. After the virus was recognized as a threat to led by the WHO to contain the disease quickly stopped SARS in its tracks. The WHO declared that the virus was officially contained on July 5, 2003. Though the spread of the virus has been thwarted, it still remains one of the most potentially dangerous viruses in the world. Accordingly, global health authorities are constantly on alert for another possible outbreak.

180. Based on information from the above passage, approximately how many people over the age of 65 fatally contracted the SARS virus?

A) 8400 **B)** 4500
C) 900 **D)** 450

181. The discussion in the passage about how SARS is spread through close contact serves which of the following functions within the passage?

A) It illustrates the need for hospital staff to be well protected against possible infection when dealing with SARS cases
B) It lists the different possible close contact scenarios
C) It demonstrates how easily the virus is spread from person to person
D) It offers a comparison of SARS to the common cold

182. It can be inferred from the passage

A) The first SARS case may have occurred by eating infected meat
B) Doctors are very close to discovering a SARS vaccine
C) The Chinese doctor purposely spread the SARS virus
D) SARS no longer poses a threat to the global population

183. Accordingly to the passage, all of the following are true of the Chinese-American businessman EXCEPT that:

A) He was a guest on the ninth floor of the Metropole Hotel
B) He died in a hospital in Singapore
C) His death sparked a WHO investigation into SARS
D) Before he died, he had a very high fever

184. The passage provides support for which of the following statements?

A) The risk of dying from SARS decreases with age
B) It is impossible to track the origin of an outbreak
C) Males are more susceptible to the SARS virus than females
D) Health care professionals need to be especially worry of possible SARS infection

185. Which of the following provides the most appropriate title for the passage?

A) Serial Killer: The anatomy of the 2003 SARS outbreak
B) SARS: An Animal-human Link?
C) The Global Impact of the SARS virus
D) Conquering the SARS

PASSAGE-5

Questions 186-191 are based on the following passage:-

At last count in the year 2004, it was estimated that there were over 800 million mobile phones users 'worldwide, almost one-eighth of the global population. Underscoring this dramatic number is a growing suspicion that the radiation emitted by these mobile phones may be dangerous to the humans. There is no doubt that the body absorbs varying levels of radiations emitted by the cell phones but the question is, do these levels pose a health risk? Mobile phones employ radio waves, more especially, Radio Frequency (RF) energy, to wirelessly transmit voice data and other information between handsets and base stations. The FDA and FCC, share the responsibility of making sure that every cell phone sold in the US complies with certain safety guidelines that limit a person's exposure to RF energy. The amount of RF energy absorbed by a human body when in contact with the cell phone is measured by a unit known as the Specific Absorption Rate (SAR). A phone deemed safe by the FCC must not have a SAR level higher than 1.6 watts per kilogram. Deeming a phone safe however is misleading. The FDA states that though there are no hard evidences of adverse health effects of cell phone use on the general public,

they urge further research into the subject. This statement is vague at best, and rather than answering our question, it brings up a number of others. This vague stance by the FDA and FCC derives from the fact that most of the research findings on the possible negative impact of cell phone radiation have been controversial. An example of this was a study conducted on rats it 1995 at the University of Washington in Seattle by a research team headed by Henry Lai. Lai's team concluded that the exposure of the rats to RF energy within the FCC cell phone SAR limits results in DNA breaks in the rat's brain cells. Such breaks could be linked to cancer and brain tumors. With good reason, these finding garnered much media attention but they could never be clinically replicated, which cast serious doubt on them. It is worth nothing, however that one of studies that tried to confirm Lai's finding was conducted by a group founded by Motorola. The use of cell phones has only recently become widespread. Regardless of what research may indicate, time will give the true answer as to whether indeed cell phones are dangerous. Let's hope unlike the smoking of cigarettes 50 years ago, the outcome does not reach us too late.

186. The author's primary purpose in the passage is to….
A) Dispel rumors about the negative side effects of cell phone use
B) Describe how cell phones transmit voice data and other information
C) Discuss her personal views on the subject of cell phone radiation
D) Address the question of whether or not cell phone use is unhealthy

187. It can be inferred from the passage that a phone demands "safe" by the FCC would actually be better described as…
A) Probably safe
B) Possibly safe
C) Extremely dangerous
D) Completely safe

188. According to the passage which of the following is true?
A) Cell phone batteries utilize the power of RF energy
B) Henry Lai concluded that the exposure of rats to RF energy could be linked to cancer and brain tumors in rats
C) The FDA and FCC believe that the further cell phone research is unnecessary
D) Smaller cell phones have higher SAR ratings

189. According to the information from the passage it can be inferred that which of the flowing devices also emit RF energy?
A) A standard wall phone
B) A TV broadcast tower
C) A Radio speaker
D) Internet Router

190. The author most probably notes that the "one of the studies that tried to confirm Lai's findings were conducted by a group founded by Motorola" to suggest…
A) A possible bias on the part of the confirmation group
B) Cell phone manufacturers are actually trying to sabotage radiation research
C) The Motorola is looking for alternatives to RF energy
D) Lai's research team lied about their findings

191. The author draws a comparison between cigarettes and cell phones in the final sentence of the passage in order to…..
A) Illustrate a historical precedent
B) Display here dislike for both
C) Make a point about social etiquettes
D) Exaggerate the issue to help her illustrate a point

PASSAGE-6

Questions 192-197 are based on the following passage:

In many underdeveloped countries, the state plays an important and increasingly varied role in economic development today. There are four general arguments, all of them related for state participation in economic development. First, the entrance requirements in terms of financial capital and capital equipment are very large in certain industries such as steel production, automobiles, and electronics, part of the textile industry. In addition, there are what Myint call "technical indivisibilities in social overhead capital". Public utilities, transport, and communication facilities must be in place before industrial development can occur, and they do not lend themselves to small -scale improvements. A related argument centers on the demands of the economy. This economy is seemed as fragmented, disconnected and incapable of using inputs from other part of the economy. Consequently, economic activity in one part of the economy does not generate the dynamism in other sectors that is expected in more cohesive economy. Industrialization necessarily involves many different sectors, economic enterprises will thrive best in an environment in which they draw on inputs from related economic sectors and in turn release their own goods for industrial utilization within their own economies. A third argument concerns the low level equilibrium trap in which less developed nations find themselves. At subsistence levels, societies consume exactly what they produce. There is no remaining surplus for reinvestment. As per capita income rises however, the additional income will not be used for savings and investments. Instead, it will have the effect of increasing the population that will eat up the surplus and force the society to its former subsistence position. Fortunately, after a certain point, the rate of population growth will intersect with the eventually out stripped population growth. The private sector will not be able to provide the one short large dose of capital to push economic growth beyond those levels where population increase eat up by the incremental advances. The final argument concerns the relationship between delayed development and the state. Countries wishing to industrialize today have more competitors, and these competitors occupy a more differentiated industrial terrain than previously. This means that the available niches in the international system are more limited. For today's industrializes, the process for industrialization cannot be a haphazard affair nor can the pace, content, and direction be left solely to market forces. Part of the reason for a strong state presence then, relates specifically to the competitive to the international

environment in which modern nations and firms must operate.

192. According to the passage, all of the following are the arguments for the state economic intervention EXCEPT…

A) The start-up costs of the initial investment are beyond the capacities of many private investors

B) Public amenities are required to facilitate a favorable business environment

C) The pace and process of industrialization are too important to be left solely to market trends

D) The livelihoods and security of workers should not be subject to the variability of industrial trends

193. Which of the following states the central point of the passage…?

A) Without state intervention, many less developed countries will not be able to carry out the interrelated tasks for achieving industrialization

B) Less developed countries are trapped in an inescapable cycle of low production and demand

C) Underdeveloped nations face a crisis of over population and a lack of effective demand that cannot be overcome without outside assistance

D) State economic planning can ensure the rapid development of non-industrialized countries natural resources

194. The author suggests of all the following as appropriate role for the state in economic development EXCEPT…?

A) Safeguarding against the domination of local markets by a single source of capital

B) Financing industries with large capital requirements

C) Helping to coordinate demand among different economic sectors

D) Developing communication and transportation facilities to service industry

195. The author suggests which of the following about the "technical indivisibility in social overhead capital" and the "low level equilibrium trap"?

A) The first leads to rapid technological progress, the second creates the demand for technologically sophisticated products

B) Both enhance the developmental effects of private sector investments

C) The firs is a barrier to private investments, the second can attract it

D) The first can prevent development from occurring, the second can negate its effects

196. Which of the following, is true, would cast doubt on the authors argument that state participation is important in launching large scale industries?

(i) Coordination of demand among different economic sectors requires a state planning agencies

(ii) Association of private sectors investors can raise large amount of capital by pooling their resources

(iii) Transportation and communication facilities can be built up through a series of small scale improvements

A) i only

B) ii only

C) i and ii only

D) ii and iii only

197. According to the passage, the "low level equilibrium trap" in under developed nations results from?

A) The tendency for societies to produce more than they can use

B) Intervention of the state in economic development

C) The inability of the market forces to over the effects of population growth

D) The fragmented and disconnected nature of the demand side of the economy.

SECTION-F: Sentence Completion

Directions for question no. 198-214: Complete the following incomplete sentences by choosing the correct option.

198. In a survey of job applicants, two-fifths admitted to being at least a little dishonest. However, the survey may underestimate the proportion of job applicants who are dishonest, because____.

A) some dishonest people taking the survey might have claimed on the survey to be honest

B) some generally honest people taking the survey might have claimed on the survey to be dishonest

C) some people who claimed on the survey to be at least a little dishonest may be very dishonest

D) some people who claimed on the survey to be dishonest may have been answering honestly

E) some people who are not job applicants are probably at least a little dishonest

199. Established companies concentrate on defending what they already have. Consequently, they tend not to be innovative themselves and tend to underestimate the effects of the innovations of others. The clearest example of this defensive strategy is the fact that___.

A) ballpoint pens and soft-tip markers have eliminated the traditional market for fountain pens, clearing the way for the marketing of fountain pens as luxury or prestige items

B) a highly successful automobile was introduced by the same company that had earlier introduced a model that had been a dismal failure

C) a once-successful manufacturer of slide rules reacted to the introduction of electronic calculators by trying to make better slide rules

D) one of the first models of modern accounting machines, designed for use in the banking industry, was purchased by a public library as well as by banks

E) the inventor of a commonly used anesthetic did not intend the product to be used by dentists, who currently account for almost the entire market for that drug.

200. At a recent conference on environmental threats to the North Sea, most participating countries favored uniform controls on the quality of effluents, whether or not specific environmental damage could be attributed to a particular source of effluent. What must, of course, be shown, in order to avoid excessively restrictive controls, is that _____.

A) any uniform controls that are adopted are likely to be implemented without delay any substance to be made subject to controls can actually cause environmental

damage
B) the countries favoring uniform controls are those generating the largest quantities of effluents
C) all of any given pollutant that is to be controlled actually reaches the North Sea at present
D) environmental damage already inflicted on the North Sea is reversible

201. The more worried investors are about losing their money, the more they will demand a high potential return on their investment; great risks must be offset by the chance of great rewards. This principle is the fundamental one in determining interest rates, and it is illustrated by the fact that——.
A) successful investors are distinguished by an ability to make very risky investments without worrying about their money
B) lenders receive higher interest rates on unsecured loans than on loans backed by collateral
C) in times of high inflation, the interest paid to depositors by banks can actually be below the rate of inflation
D) at any one time, a commercial bank will have a single rate of interest that it will expect all of its individual borrowers to pay
E) the potential return on investment in a new company is typically lower than the potential return on investment in a well-established company

202. To pursue their decision to resist what they saw as anti-labor acts, the employees' union launched an agitation to _____
A) affirm their responsibility to the country.
B) prove their strength.
C) bring down the central government.
D) exhibit their virility.

203. The best general characterization of the European philosophical tradition as it has developed upto now, with all its variety, is that it consists of a _____ Plato.
A) series of footnotes to
B) set of prologues to
C) series of chapters on
d) string of commentaries on

204. The ideas that these companies used seem so clear with _____ that their rivals will now _____ themselves for not thinking of them first.
A) technology, hit
B) new ideas, disparage
C) the passage of time, curse
D) hindsight, kick

205. In our country, the challenges are to raise _____ incomes to reduce poverty, and to _____ ailing enterprises.
A) farm, liberalize
B) middle-class, privatize
C) workers', suppress
D) rural, restructure

206. Overall, the recent policy changes by the government only amount to a _____ in the sugar industry.
A) superficial attempt at liberalization
B) lack of solution
C) large change
D) small regulating authority

207. We consulted a specialist _____
A) so that cancer may be ruled out
B) so that we wanted to rule out cancer.
C) so that cancer could be ruled out
D) so that we can rule out cancer

208. Could you tell us _____?
A) who was given the letter to
B) to whom was given the letter to
C) you have given the letter to whom
D) to whom you gave the letter.

209. No one denies that _____ knowledge.
A) he is ambitious and aspires.
B) he was ambitious and aspired for
C) he is ambitious and aspires for
D) he aspires after

210. ....., but I'd guess he must be about sixty.
A) My husband will phone the tour company and ask the price of the trip to Egypt
B) I don't remember how much the shop assistant told us those jeans cost
C) I don't know exactly how old Tim's father is
D) Frank weighed himself and was horrified to see he is eight kilos
E) Tom may be heavier than you, but don't forget that he is also taller

211. ....., most citizens of the sultanate actually live in poverty.
A) Since the Sultan of Brunei is one of the wealthiest people in the world
B) Considering that the largest concentration of urban population is in Brunei's capital
c) Because Brunei earns billions of dollars a year from petroleum exports
(d)When Queen Elizabeth paid an official visit to the Sultan of Brunei in early 1998
(e)Although the average income in Brunei is among the world's highest

212. The cost of living in Alaska is extremely high, ...
A) as the price of petrol there is surprisingly low
B) whereas Eskimos live in ice houses called igloos
C) due to the fact that only about 500,000 people live there
D) unless you really enjoy extremely cold weather and snow
E) because nearly everything has to be imported

213. In Africa, summer starts in the middle of December, ...
A) however the inhabitants don't have much opportunity to take advantage of this
B) while in Europe, the season begins in the middle of June
C) when vast stretches of land were frequently covered in snow
D) but they're going to change this system so as to be like the rest of the world
E) though the modern twelve-month calendar is of little use to them.

214. ....., so the family of the victim were outraged

A) They won their case and the burglar had to go to jail
B) The girl completely recovered from the brutal attack
C) They were relieved to see the murderer locked up in prison
D) The murderer was only given a two and a half year prison sentence
E) The judge had given the robber a harsh punishment

SECTION-G: Paragraph Jumbles

Directions for questions 215-224: The sentences given in each question, when properly sequenced, form a coherent paragraph. Each sentence is labeled with a letter. Choose the most logical order of sentences among the given choices to construct a coherent paragraph.

215.

A) Those who created the problem are now the doctors offering the prescriptions.
B) Yet nothing is being done to stem the hemorrhaging.
C) A little while ago, we were told everything was fine.
D) Then, less than six months ago, we were told that the economy was on the mend.
E) Now we are told the patient needs a massive transfusion, but everyone can see that the patient is suffering from internal bleeding; in California, the number of foreclosures may already be outpacing voluntary sales.

A) BCEAD **B)** BAECD
C) CDEBA **D)** CAEBD

216. A) As Sylvia Huot strikes, late medieval writers were perceptive of their changing status and strived to cast off their image as lyric entertainers for a more authorial identity.
B) Much of the scholarship on this issue identifies late-medieval period as a critical moment in the development of modern concepts of authority.
C) Jacqueline provides a detailed diagnosis of medieval literary references for students & medieval scholars alike.
D) The color of Melancholy cites an engaging survey of the development of authorship in the late middle ages, mainly designed for students.
E) Authorship is a subject that has enraptured medievalists for the last two decades.

A) DECBA **B)** EBADC
C) CDEAB **D)** BCDAE

217. A) As a big cat native to the icy trans-Himalayan ranges, the snow leopard is an elusive and intriguing species.
B) Unciauncia is a graceful golden-eyed animal with thick fur, padded paws that help it move noiselessly on rocky slopes, and a gloriously long tail that provides balance on the tricky terrain.
C) Poaching to supply markets for fur and body parts presents another challenge.
D) Like the tiger, the snow leopard is a keystone carnivore species whose future is clouded by conflicts with people — in this case, high-altitude pastoral communities.
E) Although these peaceable folk have historically co-existed with the snow leopard in a dozen range countries, the increase in livestock numbers in recent times has resulted in depredation and retaliatory killing of the animal.

A) BDAEC **B)** BECDA
C) ABDEC **D)** CEADB

218. A) Enter the virtual assistants who are entrepreneurial partners - highly skilled in their profession and able to have an impact on the productivity of those they work with.
B) But most of the small businesses started today will reach an impasse very quickly - they will be spending so much time on administrative tasks that they can no longer concentrate on growing their business.
C) On the contrary, some believe that increasing numbers of small businesses will afford administrative support experts with entrepreneurial spirit opportunities that have never before been possible.
D) Traditionally, the need for assistance has left the small business owner with several bleak options, hire an expensive "temp" for a band-aid-style solution, and take on a great deal of expense and responsibility with a "permanent" employee, or-perhaps worst of all-turn away the work.
E) Corporate downsizing and the move towards small, home-based businesses could appear to be bad news for the over 3 million people whose expertise lies in the administrative support arena.

A) DCABE **B)** ECBDA
C) DBACE **D)** CDEBA

219. A) But in the industrial era destroying the enemy's productive capacity means bombing the factories which are located in the cities.
B) So in the agrarian era, if you need to destroy the enemy's productive capacity, what you want to do is bum his fields, or if you're really vicious, salt them.
C) Now in the information era, destroying the enemy's productive capacity means destroying the information infrastructure.
D) How do you do battle with your enemy?
E) The idea is to destroy the enemy's productive capacity, and depending upon the economic foundation, that productive capacity is different in each case.
F) With regard to defense, the purpose of the military is to defend the nation and be prepared to do battle with its enemy.

A) FDEBAC **B)** FCABED
C) DEBACF **D)** DFEBAC

220.

A) In art, essentialism is the idea that certain concepts may be expressed organically in certain media.
B) Each medium has its own particular strengths and weaknesses, contingent on its mode of communication.
C) This idea may be further refined and it may be said that the haiku is a poor vehicle for describing a lover's affection as opposed to the more organically correct sonnet.
D) Essentialism is attractive to artists because it not only delineates the role of art and media but also prescribes a method for evaluating art.
delineates the role of art and media but also prescribes a method for evaluating art.
E) A chase scene may be appropriate for motion pictures,

but poorly realized in poetry because the essential components of the poetic medium are ill suited to convey the information of a chase scene.

A) DCEBA **B)** BDACE
C) DABEC **D)** ABECD

221.

A) Michael Hofman, a poet and translator, accepts this sorry fact without approval or complaint.
B) But thanklessness and impossibility do not daunt him.
C) He acknowledges too–in fact he returns to the point often–that best translators of poetry always fail at some level.
D) Hofman feels passionately about his work, and this is clear from his writings.
E) In terms of the gap between worth and rewards, translators come somewhere near nurses and street-cleaners.

A) EACDB **B)** ADEBC
C) EACBD **D)** DCEAB

222.

A) The mentor-protégé relationship also saw the unlikely collaboration of two 19th century Victorian writers with disparate styles collaborating on two plays and a short story.
B) However the first staging of "The Frozen Deep," that Dickens produced led to the breakdown of his marriage.
C) "The Frozen Deep" and "No Thoroughfare" the two plays written jointly by them have not lingered on in public consciousness unlike the novels they wrote individually, the plays having met with what one would call a "mixed response" in today's parlance when they were staged initially.
D) Charles Dickens, one of the most revered figures in English Literature, had an unlikely disciple in Wilkie Collins. Collins's pen made popular a brand of fiction known as "sensation novels," a genre that led to the birth of the modern day detective novels.
E) Dickens appointed Collins, Editor of the literary journals he brought out and also got his daughter married to the younger brother of his protégé.

A) CDAEB **B)** CBEDA
C) DCEAB **D)** DEACB

223.

A) Given the atrocities perpetrated with impunity by state forces, it is a moral imperative that the negotiations — scheduled to resume at the United Nations this month — on a comprehensive treaty to regulate the sale of conventional arms should succeed.
B) Its recent report calls on countries to codify the so-called "golden rule" — not to allow the transfer of arms to states where there is a threat of grave abuses of human rights and humanitarian law.
C) Every year, over 300,000 people are killed by conventional weapons and millions injured, forcibly displaced, and bereaved because of armed violence, according to Amnesty International.
D) The consensus that has emerged, since the 2006 Resolution for a global pact, on underwriting provisions related to protection of human rights and fundamental freedoms in the proposed treaty is also a tacit recognition of the brutalities committed systematically against innocent civilians in the conflict zones.
E) However, opposition by the United States, Russia, China and India, besides others, to link the trade in arms to the observance of human rights and humanitarian law by recipient countries threatens to block progress.

A) DAECB **B)** DEBCA
C) EDBCA **D)** CBDAE

224.

A) How does the cellular microenvironment regulate cellular functions or vice versa?
B) This understanding can be used to engineer novel therapeutic for new drug discovery techniques and for regenerative medicines using directed stem cell differentiation
C) Can the complex sugar that composes the micro-environment play a role in intercellular modulation at the protein signaling or genetic levels?
D) The laboratory aims at understanding the correlation at the cellular level and in using the knowledge to develop medicines for curing diseases.
E) These are the domains which are explored using novel tools to dissect complex sugars and observe changes in genetic and protein signaling.

A) DABCE **B)** ACBED
C) DACEB **D)** CADBE

ERROR DETECTION

Directions for questions 225-234:- choose the word which is most nearly the opposite of the word given in the question.

225. QUALM:
A) Pleasant fragrance **B)** Nurturing condition
C) Loud noise **D)** Confident attitude

226. BUCOLIC:
A) Vigorous **B)** Ripe
C) Civic **D)** Affable

227. VENERATION:
A) Ignorance **B)** Unconcern
C) Dissuasion **D)** Contempt

228. SOPORIFIC:
A) Exciting **B)** Mature
C) Impervious **D)** Optimistic

229. RENEGE:
A) Speed up suddenly
B) Allow to become loose
C) Follow through
D) Conform to what is conventional

230. COMMISSIONED
A) Started **B)** Closed
C) Finished **D)** Terminated

231. ARTIFICIAL
A) Red **B)** Natural
C) Truthful **D)** Solid

232. EXODUS
A) Influx **B)** Home-coming
C) Return **D)**Restoration

233. RELINQUISH
A) Abdicate **B)Renounce**
C) Posses **D) Deny**

234. EXPAND
A) Convert **B)** Condense
C) Congest **D)** Conclude

Directions for question 235-246:- Each of following sentences are divided into parts which are marked A,B,C,D. One of these parts may contain an error or may not be acceptable in standard written communication. Select the part containing the error and mark it as your answer.

235. a) In 1896, Henry Becquerel / b) found that Uranium salts emitted penetrating radiations / c) similar to those which Roentgen / d) produced only year early with a gas discharge tube.

236. a) Unless they reverse present policies immediately / b) the world may suffer / c) permanent damage from the / d) unregulated use of pesticides.

237. a) In some nations, the political system works by a simple logic / b) the more an organization contributes / c) to politicians campaign funds / d) its interests are better served by the policies and actions of the government.

238. a) a group of students who have begun / b) to clean up Fredrick law / c) Olmted's Morning side park in New York City / d) believes that the park needs not be redesigned but to returned to its former conditions.

239. a) In this year's negotiations, unorganized workers will be fighting to / b) improves job security in many industries / c) but will be seeking large wage increases in some others, / d) as of the prospering telecommunications industry.

240. a) To tackle the issue of congressional campaign spending is / b) becoming embroiled in a war which is raging between those who support public financing / c) with those who would lift the limits on the / d) amount political parties may donate.

241. a) In the past few months / b) there has been extensive dispute / c)over if fare hikes should be a first or last / d) recourse in improving the transit system.

242. a) In response to higher oil prices, window manufacturers / b)have improved the insulating / c)capabilities of their products / d)their windows have been built to conserve energy and they are.

243. a) Those who study ancient European History soon realize that / b)before Greece was Greece, it is then was collection of small city states / c) that was intentionally jealous of one another and / d)were only occasionally able to work together for common goals.

244. a) Sine 1993, when it passed a referendum / b)approving casino gambling the town of Riverside, Missouri / c) was using casino tax revenue to improve / d)its streets, building and other public works.

245. a)Without hiding the fact that the destruction of Athens / b) was one of their most important objectives / c) the multitudinous Persian army, let by Xerxes and nine of his generals / d) marched westwards towards Greece in the spring and summer of 480 BC.

246. a)More than any animal, / b)the wolverine exemplifies / c)the unbridled ferocity of / d) "nature red in tooth and claw".

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Read the following passage and answer the given questions. Your answers should be drawn from the content of given passage only.

The economy of contemporary India is a great paradox. It is a strange combination of outstanding achievements as well as grave failures. Since independence, India has achieved remarkable progress in overcoming its economic backwardness. From being a very poor country in the 1950s and a 'basket case' in the mid 1960s, it has emerged as the fourth largest economy in the world (in terms of purchasing power parity). Our economy has become one of the fastest growing economies in the world. Now the country is one of the leading players in the world knowledge economy with vast intellectual capital and booming software and information technology services. While our country has joined the league of the world's top five fastest growing economies, we are in the bottom 20 among all countries in terms of the Human Development Index. While the country is celebrating its growth rate and technological wonders, it is witnessing social contradictions and the paradox and ironies of development. Thus, there are 'two Indias' in contemporary India.

1. Why is the Indian economy considered 'a great paradox'?

(a) It is a leading player in information technology services with low levels of literacy.
(b) There is poverty amidst plenty in agricultural produce.
(c) It is one of the largest economies with low human development.
(d) It has scientific achievements with social contradictions.

Ans. (c) The author is specifically hinting to the 'paradox and ironies of development' vis- a-vis the state of economical growth. While India has witnessed growth in information economy along with the overall economy, it has showed a dismal scenario in the HDI which is a much wider scale and includes the state of health, etc. apart from the state of education. Hence option (a) shows only a partial view of the given paragraph. On this line of argument, other options can be eliminated as well leaving the third option as most appropriate.

2. Why is India being referred to as a leading player in the world knowledge economy?

(a) India's knowledge base in science and technology is one of the world's best.
(b) India has huge reserves of human intellectual capitals and information technology services.
(c) India is among the World's five fastest growing economics and technology reserves.
(d) India has a huge reservoir of human capital and scientific knowledge export potential.

Ans. (b) Knowledge economy refers to the intellectual resource of the country. Information technology services are the indicators of a developing knowledge economy. Option (d) is closer to (b), but it only refers to human capital which may also include unskilled labour force aplenty in our country. However, the author is pointing towards the knowledge base of our country as being

significantly large. Hence the option (b) seems more appropriate.

3. What does the author imply by the phrase 'two Indias'?

(a) There is the India that has vast intellectual capital and the other that is largely illiterate.

(b) There is the India of burgeoning growth and the India of widespread want and misery.

(c) There is the India of progressive mindsets and the other who are socially conservative.

(d) There is an India of outstanding achievements combined with gigantic failures.

Ans. (d) India's achievement on all quarters is significant. This being said, options (a) and (b) highlight the contrast in the intellectual and economic spheres of our nation respectively. The fourth option shows the contrast in India's overall economy, covering both social and economic aspects.

4. Consider the following statement and also the conclusions. Answer the question that follows:

Statement : Education is in the Concurrent List. The State government cannot bring reforms in education without the consent of Central Government.

Conclusion I : For bringing about quick reforms in education, it should be in the State List .

Conclusion II: States are not willing to bring about quick reforms in Education.

Which one of the following is correct?

(a) Conclusion –I only follows from the statement.

(b) Conclusion –II only follows from the statement.

(c) Both conclusions I & II follow from the statement

(d) Neither conclusion I nor conclusion II follow from the statement

Ans. (d) The items in Concurrent List can be legislated by both the Centre and the State, and any issue arises only in cases of conflict. Hence, there is no question of the States being held up by inaction from states.

The statements / conclusions / inferences to be analyzed are to be read as flowing from the paragraph or statements given. No value preferences should be attached to the given statements, as they may vary from individual to individual, thereby taking away the objectivity in question. The statements should be analyzed with logic, objectivity, rationality, application of knowledge and fundamentals. In some cases more than two answers may seem appropriate, and in such a situation it is advisable to look into the idea being highlighted from the paragraph. Even when the statements given are not true, they may still provide a set of conclusions which can be asked to be analyzed by the candidate.

5. Five persons P, Q, R, S, T are sitting in a row. Q is between P and T. To find who among them is in the middle, which of the information given in the following statements is / are sufficient?

1. P is left of Q and right of S.
2. R is at the right end.

Select the correct answer using the code given below:

(a) 1 only **(b)** 2 only

(c) Either 1 or 2 **(d)** Both 1 and 2

Ans. (d) Initially placing with the given information, Analysing 1, gives the arrangement S P Q T which leaves the scope for placement of R from Statement 2. Hence Statement 2 will also be required.

6. Which one among $\sqrt{2}$, $\sqrt[3]{3}$, $\sqrt[6]{6}$, $\sqrt[12]{12}$ is the smallest one?

(a) $\sqrt{2}$ (b) $\sqrt[3]{3}$

(c) $\sqrt[6]{6}$ (d) $\sqrt[12]{12}$

Ans. (d)

$\sqrt{2} = (2)^{1/2}$

$\sqrt[3]{3} = (3)^{1/3}$

$\sqrt[6]{6} = (6)^{1/6}$

$\sqrt[12]{12} = (12)^{1/12}$

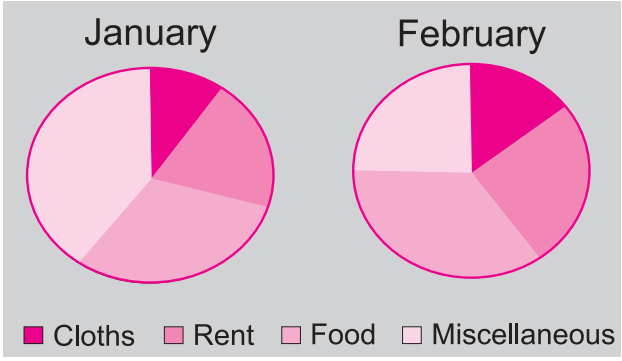
To compare, the powers should be changed to non-fracti ons as,

$\left[(2)^{1/2}\right]^2, \left[(3)^{1/3}\right]^2, \left[(6)^{1/6}\right]^2, \left[(12)^{1/12}\right]^2$

$\Rightarrow \left[(2)^6\right]\left[(3)^4\right]\left[(6)^2\right]\left[(12)^1\right]$

$\Rightarrow \sqrt[12]{12}$ is smallest.

7. The following pie charts show that a man spends 10% on clothes, 20% on rent, 30% on food and rest on miscellaneous items in the month of January and spends 15% on clothes, 25% on rent, 35% on food and rest on miscellaneous items in the month of February.



Consider the following statements:

1. The money spent on food over rent in the month of January is same as the money spent on food over rent in the month of February.
2. The money spent on rent over clothes is same as money spent on food over rent in the month of January.

Which of the statements given above is/are correct?

(a) 1 only **(b)** 2 only

(c) Both 1 and 2 **(d)** Neither 1 nor 2

Ans. (d) Let toal spending in Jan = x

total spending in Feb = y

(x may or may not be equal to y)

food / rent (jan) = 0.3x / 0.2x=1.5

food / rent (feb) = 0.35y / .25y = 1.4

Hence, they are not same => Statement 1 is incorrect.

rent / clothes (Jan) = 0.2x / 0.1x= 2

food / rent (Jan) = 0.3x / 0.2x= 1.5

=> Statement 2 is incorrect.

Answers and Solutions:

1. For maximum fraction of young aspirants in 2009, (Stream% x Age%) should be maximum:
Commerce: 23x45 = 1035
Science: 21x31 = 651
Arts: 30x34 = 1020
Engineering: 15x39 = 585
Medical: 11x21 = 231
Hence, Commerce i.e. Option C.

2. For growth rate, absolute no. of aspirants is required of all the branches:

	2009	2010
Commerce	58949	56050
Science	53823	67850
Arts	76890	85550
Engineering	38445	38350
Medical	28193	47200

Hence, Medical i.e. Option B

3. For no. of aspirants in each age group, (Stream% x Age%) is required:
Age<25: 31x23 + 34x29 + 21x16 + 39x13 + 45x19 = 3397
25<Age<35: 52x23 + 41x29 + 44x16 + 33x13 + 44x19 = 4354
Age>35: 52x23 + 25x29 + 35x16 + 28x13 + 11x19 = 3054
Hence, (25<Age<35) i.e. Option C.

4. Here also, (Stream % x Age %) is to maximized.
A - 39 x 13 = 507
B - 21 x 16 = 336
C - 25 x 29 = 725
D - 52 x 23 = 1196
Hence, Option D.

5. 2009: 52x21 + 41x30 + 44x11 + 33x15 + 44x23 = 4313
2010: 52x23 + 41x29 + 44x16 + 33x13 + 44x19 = 4354
Hence, 2010 i.e. Option B.

6. In case of 1 source, there is just one incorrect answer. While in case of two sources, blank is introduced in case of wrong answer because it can happen only when one source is correct and other is not. Analyzing the data, it is clear that P, V and S have single source (1 incorrect and no blank answer).
P must have introduced wrong answer to Q46, S to Q 17 and V to Q25. Looking into the table again;

Name	Wrong answer no.	Blank answers no.	Source
P	46	-	Mr. X
Q	96	46, 90, 25	
R	27, 56	17, 46, 90	X
S	17	-	Mr. AM
T	46, 90	-	P
U	14, 46	92,90	
V	25	-	Mr. AM
W	46, 92	-	P
X	27	17, 46, 90	

P must be source to T and V for Q46. Since blanks of R and S are same (carried forward), X must have been R's only source. X must have S and T as sources, and U sources are T and W. Hence, Q has two sources i.e. Option B.

7. 4 persons (P, T, S and X). Hence, Option B.

8. U (Option A).

9. Option D.

10. In order to find minimum value of F(B), consider F(all 3 subjects) = 1. F(exactly) minimum value will be 2. Hence F(B)>2 i.e. 3 is the minimum value. Option B.

11. (C) when F(A)=28, F(B)=25, F(two subjects)=24. The idea is to find the 4 largest numbers which add up to 100.

12. (B) F(A) maximizes when F(B)=3, F(two subjects)=2, F(all) = 1.

13. Calculating downfall in all 4 cases: (Only absolute downfall is to be considered, not % downfall)
- 1973-1974 - 6.26%
- 1979-1980 - 3.39%
- 1990-1991 - 2.05%
- 1999-2000– 0.79%. Hence Option A.

14. 1982, 1985, 1986, 1991, 1993, 1998 and 2001. Hence total 7 times i.e. Option B.

15. Clearly January profit is the minimum i.e. 1000. Hence option B.

16. It follows from Q15 that min profit per employee is also in month of January. Hence C.

17. Option C.

18. Option A.

19. 3165 / 425 = 7.44

20. 217 / 424 = 51.1

21. 4 / 37 = 10.81 %

22. (425 x 100) / 3165=13.24 %

23. 42% (approx)

24. q

25. Pile II

26. Tennis: D / E / F / G / H / I / J (TOTAL is N)
Table Tennis: A / B / C / D / E / F / J
Badminton: A / B / C / G / H / I (TOTAL is N-1)
Hence only correct option is C.

27. 9

28. Data insufficient.

29. Data insufficient.

30. It is obvious that the one plays next will WIN the game. In order to find the initiator of the game, we will try to find the sixth entry. Only possibility is X in last row last column. Hence next move i.e. will be O. Hence option B.

31. Option B

32. Probability will be (0.33 + 0.33 x 0.5 + 0.33 x 0.5) = 0.76. Option A.

33. Possible no. must be a square, hence 16.

34. Maximum square no. is 100 itself.

35. 1 step. (Number all lots from 1 to 10 and take same no. of packs as the lot no.; Final add-on weight will give us the indication of failed batch)

36. 3 steps (dividing 10 into 4+4+2)

37. Firstly, sum all the digits together:A+B+C+...+H+I = 45; (1)
then all the four equations given:
(A+B+C)+(C+D+E)+(E+F+G)+(G+H+I) = 52 (2)
and we get (2)-(1):
C+E+G = 7;
Since every letter represents a different digit, we can
infer that {C,E,G} = {1,2,4}
So the question comes to us which digit in {1,2,4} does E represents?
let's take a try

E\CG	1	2	4
1	3(10)	5(8)	there is no 10
2	3(10)	6(7)	same reason
4	5(8)	6(7)	

Therefore, E=4

38. 7

39. It is obvious that there wont be any 5 or 7. Product of all digits will be $2^7 3^4$. In order to get LMN=PQR; O=2 and LMN=PQR=$2^3 3^2$.

40. LMN=PQR=$2^3 3^2$.

41. Initial 3+3+2, Hence, two steps.

42. Three steps.

43. There are total 4 Ram(R), 3 shyam(S), 2 Trams(T) and 1 Alam(A) Applying all the given clues, we get following 4 cases:

	Case I		Case II		Case III		Case IV	
Arora	T		T	S				S
Bhaskar	T	S	T			S		
Chopra		S			T	S	T	
Das				S	T		T	S
Eeshwar				S				S

Hence only possibility is:

Last	First	Middle
Arora	R	S
Bhaskar	A	R
Chopra	T	R
Das	T	S
Eeshwar	R	S

Hence, Mr. Arora and Mr. Eashwar.

44. None

45. Bhaskar

46. Ram Shyam.

47. Considering three cases (only two among S, L and R are centurians & applying the conditions):
I.) S+L: S is taller than R, S is younger than L, L is younger than R, L is shorter than S (3rd statement supports these data). Hence, option B.

48. Option A.

49. Option A.

50. Option B.

51. (4-69*pi+8*sqrt(2)*pi)R^2

52. Head

53. 51 / 1000000

54. (D) X = $\sqrt{63} - \sqrt{13} = 50/(\sqrt{63} + \sqrt{13})$ & X = $\sqrt{57} - \sqrt{7} = 50/(\sqrt{57} + \sqrt{7})$; Hence X<Y.

55. Area (dashed) = Area of ABC – (Area of all 3 arcs) – (Because are all arcs are of same radius and sum of all angles is same as sum of angles of triangle ABC = 180^{O}). Hence, Area = 600 – 77= 523. Option C.

56. Time required for engine to move from one end to the other end = (10 km) / (60 km / hr) = 10 min. Distance traveled by fly will be = (30 km / hr) x (10 min) = 5 km. Hence Option B.

57. On solving: (2x-3).(x-3) = (x^2-3x+1); Hence x = 4 and 2. But x=2 is not possible because log(x-3) will became undefined. Hence Option B.

58. 55 3+17 3-72 3 = (55+17).(55 2+17 2+55.17) – 72 3=72*55*(-51). Hence not divisible by 7 (Option D)

59. 'A' Profit will be = P x [(1.1)^3 -1] B Profit will be = P x [3 x 0.1]; Hence ratio will be 1.1 (Option A)

60. 'A' work efficiency will be (W / 20) and that of 'B' will be (W / 30). Combined they will complete (5W / 6) of work. Hence B will need 5 days to complete the remaining work (Option C)

61. Using AM$\leq$GM; (1+a) / 2$\leq$ sqrt(a)- Hence (1+a)(1+b)(1+c)(1+d)$\leq$16. Hence Option C.

62. Assuming x=y=z=1; we get expression equal to 1. Only Option C matches.

63. Total lag per day = (120 + 288) sec / (7 days) = 58.29 sec / day. For exact time initial lag time of 2 min has to be eliminated. Hence days required = (2*60 sec) / (58.29 sec / day) = 2.05 day. Hence Option B.

64. S_1 = 4+444+44444+…..: $9S_1/4$ =(10-1)+(1000-1) + ……: $S_1 = 4/9\{[10(10^{2n}-1)/99]-n\}$
S_2 = 66 + 6666 + …….: $9S_2/6$ = (100-1) + (10000-1) + ……: $S_2 = 6/9\{[100(10^{2n}-1)/99]-n\}$. Hence Option A.

65. Enclosed figure [x+y = 1 / 3 and y-x=1 / 3] is a square with diagonal = 2. Hence area = 2 (Option B).

66. F(n+5) = F(n+4)-F(n+3) = -F(n+2) = F(n-1), Hence p = 6 (Option C)

67. Total no = 5! = 120. For each decimal place 24 of these are of same digits. Thus for a decimal place the total value is 24 (1+3+5+7+9). Total value will be=11111x600 = 6666600. Hence Option B.

68. Triangles ABC and BCD are similar;
Hence: BC / BD = AC / CD = AB / BC
AC= 8 and AB = 16
Perimeter (ADC) / Perimeter (BDC) = 7 / 9

69. Since b>16, means b>a^4 OR $b^{11}>a^{44}$. Hence Option A

70. From statement :b / 2 – c =1 . Hence only a relation is required to find the values of b and c. Hence B

71. 15x21, greatest common divisor is 3, 5+7-1=11, 11x3=33, 33x 2 diagonals =66 tiles.(but 3 (GCD)common so answer = 63)

72. Let M stand for the man's speed in mph. When the man runs toward point A, the relative speed of the train with respect to the man is the train's speed plus the man's speed (60 + M). When he runs toward point B, the relative speed of the train is the train's speed minus the man's speed (60 - M). When he runs toward the train the distance he covers is 3 units. When he runs in the direction of the train the distance he covers is 5 units. We can now write that the ratio of the relative speed of the train when he is running toward point A to the relative speed of the train when he is running toward point B, is equal to the inverse ratio of the two distance units or

$$\frac{(60 + M)}{(60 - M)} = \frac{5}{3}$$

M = 15 mph

73. $(a^2+b^2+c^2)^2=(a^4+b^4+c^4)+ 2(a^2b^2+a^2c^2+b^2c^2)$
$(a^4+b^4+c^4) = (a^2+b^2+c^2)^2 - 2(a^2b^2+a^2c^2+b^2c^2)$
$(a^4+b^4+c^4) = 25 - 2(a^2b^2+a^2c^2+b^2c^2)$
Now, to get a numerical value for $(a^4+b^4+c^4)$, we need to evaluate the expression $(a^2b^2+a^2c^2+b^2c^2)$
$(a+b+c)^2 = (a^2+b^2+c^2)+2(ab+ac+bc)$
and so, $(ab+ac+bc)=[(a+b+c)^2-(a^2+b^2+c^2)]/2$
$(ab+ac+bc) = (9-5)/2 = 2$
$(ab+ac+bc)^2 = (a^2 b^2+a^2 c^2+b^2 c^2)+2(a^2bc+ab^2 c+abc^2)$
and so $(a^2b^2+a^2c^2+b^2c^2)=(ab+ac+bc)^2 - 2(a^2bc+ab^2c+abc^2)$
$= (ab+ac+bc)^2 - 2abc(a+b+c)$
$(a^2b^2+a^2c^2+b^2c^2)=22-2abc(3)=4 - 6abc$
$(a^4+b^4+c^4) = 25 - 2(4 - 6abc)$
OR
$(a^4+b^4+c^4) = 17 + 12abc$
$(a+b+c)^3=(a+b+c)(a+b+c)^2=(a+b+c)(a^2+b^2+c^2+2ab+2ac+2bc) = a^3+ab^2+ac^2+2a^2b+2a^2c+2abc + a^2b +2abc+b^3+c^2+2b^2c+2ab^2+2ac^2+ a^2c+2abc+2bc^2+b^2c+c^3 = a^3+3ab^2 + 3ac^2 + 3a^2b + 3a^2c + 6abc + b^3 + 3bc^2 + 3b^2c +c^3$
$= (a^3 + b^3 + c^3) + 3(ab^2 + ac^2 + a^2b + bc^2 + a^2c + b^2c) + 6abc$
and so; $6abc = (a+b+c)^3 - (a^3+b^3+c^3) - 3(ab^2+ac^2+a^2b+bc^2+a^2c+b^2c)$
$6abc=(a+b+c)^3-(a^3+b^3+c^3) - 3[a(b^2+c^2)+b(a^2+c^2)+c(a^2+b^2)]$ and then, after some examination of this expression, I saw that I could get clever by adding and subtracting $3(a^3+b^3+c^3)$ to the expression on the right:
$6abc=(a+b+c)^3-(a^3+b^3+c^3) + 3(a^3+b^3+c^3) - 3[a(b^2+c^2)+b(a^2+c^2)+c(a^2+b^2)]-(a^3+b^3+c^3)$
$6abc=(a+b+c)^3 + 2(a^3+b^3+c^3) - 3[a (a^2+b^2+c^2) +b(a^2+b^2+c^2)+c(a^2+b^2+c^2)]$
$6abc=(a+b+c)^3+2(a^3+b^3+c^3) - 3(a+b+c)(a^2+b^2+c^2)$
6abc=3 3+2(7)-3(3)(5)=27+14-45 = -4
abc = -4 / 6 = -2 / 3
Finally;
$(a^4+b^4+c^4) = 17+12abc=17+12(-2/3) =$ 17-8 and we finally have our result: $a^4+b^4+c^4 = 9$

74. You begin with 8 liters of a 15 percent solution. That means you have 15 percent acid and 85 percent water, right? Let's figure out how many liters of acid and water you have to begin with. 15 percent of 8 is 1.2 (.15*8) liters. So you've got 1.2 liters of acid and 6.8 liters of water (8-1.2 = 6.8). Now you want to add water until the concentration is down to 10 percent. Note that the amount of acid will remain constant..you're only changing the amount of water. You want 1.2 liters of acid to be 10 percent of the entire quantity. Set up a proportion to find out how much is 100 percent of the quantity.
(10 percent) / (1.2 liters) =(100 percent) / (x liters)
12 = x

So 12 liters is the entire amount of solution that makes 1.2 liters 10% of the concentration. Now read the problem. It asks how much distilled water must be added to make the concentration 10 percent.
You go from 8 liters to 12 liters so that's 4 liters of water.

75. The family wants to save $120 over a period of two years. That means they want to save $60 a year, right? The problem also states they want to cut their yearly bill by 8 percent. Well, the two paragraphs above tell you what you need to know...that $60 is 8 percent of the total bill. Let's set up a proportation and solve for the total bill:
(60 / 8 percent) = (x / 100 percent)
750 = x
The total yearly bill is $750.

76. Let x be the number of stairs visible on the escalator when it is stopped. Let r be the rate (number of stairs per second) at which the escalator moves when it is running. The woman walks down the escalator at one rate and runs back up the escalator at a rate 5 times as fast; as we showed before, the time she takes walking down is twice as much as the time she takes running back up.
Let t be the time (seconds) she takes to run up; then 2t is the time she takes to walk down.
In walking down the escalator, the number of stairs she walks down is equal to the number of stairs on the stopped escalator, minus the number of stairs that the escalator moves in the time 2t; we are told she walks down 10 steps. So we have:
x - (r)(2t) = 10 .....[1]
In running up the escalator, the number of stairs she runs up is equal to the number of stairs on the stopped escalator, plus the number of stairs that the escalator moves in time t; we are told that she runs
up 25 stairs. So we have:
x + (r)(t) = 25 .....[2]
Hence; x = 20

77. Since we need 6 terms in the AP, we need to take it as 21 - (d*5) instead of 6
so no. of sets will be :
for d = 1, 21 - (1*5) = 16 {consider all APs with 1st term 1,2,...,16}
for d = 2, 21 - (2*5) = 11 {APs with d = 2, 1st term going from 1 upto 11}
for d = 3, 21 - (3*5) = 6
for d = 4, 21 - (4*5) = 1
So prob = $34/({}^{21}C_6)$

78. If we reverse the digits of a no., then you get a no. bigger (in this case, as the product has increased) but it is bigger by an integer as both the no.s are integers and their diff. will also be an integer. So now this diff. multiplied by the second(unreversed no.) is the reason for the product to be greater by 1224. So now find factors of 1224 from 10-20....these will come out to be 12,17,18...
so by dividing 1224 by the unreversed no. , we will get the diff. between the first no. and its reversed no.
now the diff. between a 2-digit no. and the no. formed by reversing its digits is always divisible by 9 because
ab=10a + b
ba= 10b+a
so ab-ba=9(a-b)
so assuming the unreversed no. is 12 , we get the diff. between the changed no. and unchanged no. as 204 which cannot be as these are 2 digit no.s assuming it to be 18 , we get the diff. as 68 which also cannot be as the diff. should be divisible by 9.
so we get 17 as the second no. and the diff. as 81
now ab-ba=9(a-b)
9(a-b) = 72
so a-b = 8
so a = 8 +b
so as b=0 gives 08 which is not a 2 digit no.
so a = 9 and b =1 as for greater than 1 a will cease to be a digit.
so the new no. is 91
and the new product is 1477.

79. Height of candle1 after x hrs=(6-x)/6
height of candle2 after x hrs=(8-x)/8
2*(6-x)6=(8-x)/8
x=4.8

80. maximum possible score = 150
min possible score = -50
total possible scores = 200 * 3 = 600 - 3 + 1 (for Zero)= 598

81. In finding average speed, we use Harmonic mean. H.M.= 1/{1/3[1/x+1/2x+1/3x]}= 18x/11 km/hr.

82. Draw XE to YZ; (By pythagoras theorem), $(XE)^2=(XY)^2-(YE)^2=(15)^2-(9)^2$ =144
Let AB = CD = x.AD/XE = AY/EY; x = 71/5. Area = 51.84

83. Total are = 4 area(3%OAB) = 4*1/2*10*1.5 = 30cm^2

84. Measure of arc XYZ = XOY;
= 2(XDY)=2(XYP)=2*50^o = 100^o

85. 1st investment = An investment of Rs.150 fetches a dividend of Rs.5.50
Rate = 5.50/150*100 = 36.67%(approx)
2nd investment = An investment of Rs.15 fetches a dividend of Rs.0.35
Rate = 0.35/15*100 = 86.37%(approx)

86. Let the corresponding side of the other triangle be x,y, and z; x/4=y/6=x/8 = x+y+z/18 =162/18 = 9
Required sides are 36 cm, 54 cm & 72 cm.

87. H.C.F = 2x2x3 = 12; Area of bed = 12 sq.m; Length of bed = 12/6 = 2 m

88. L.C.M of 4,5,6 and 10 is 60
So the bells will ring together after 60 sec.
1 hours, they will ring together = 60 x 60 /60 = 60 times

89. Zinc in 2 kg of new alloy = (2/5 + 3/7) = 29/35
Nickel in 2 kg of new alloy = (3/5 + 4/7) = 41/35
Ratio of Zinc and nickel in the new alloys = 29/35 : 41/35 = 29 : 41

90. Let their ages 1 year ago be 3x and 4x
3x + 2 / 4x + 2 = 4/5; x = 2; Jai present age = 3x + 1 = 7 years

91. Assume that initial there were 3*X bullets. So they got X bullets each after division.
All of them shot 4 bullets. So now they have (X - 4) bullets each. But it is given that, after they shot 4 bullets each, total number of bullets remaining is equal to the bullets each had after division i.e. X Therefore, the equation is 3 * (X - 4) = X. Hence X = 6 and total bullets before division is 18.

92. It is given that the platoon and the last person moved with uniform speed. Also, they both moved for the identical amount of time. Hence, the ratio of the distance they covered – while person moving forward and backword - are equal. Let's assume that when the last person reached the first person, the platoon moved X meters forward.
Thus, while moving forward the last person moved (50+X) meters whereas the platoon moved X meters. Similarly, while moving back the last person moved [50-(50-X)] X meters whereas the platoon moved (50-X)

meters.
Now, as the ratios are equal,
(50+X) / X = X / (50-X)
(50+X)*(50-X) = X*X
Solving, X=35.355 meters
Thus, total distance covered by the last person
= (50+X) + X= 120.71 meters

93. Ans. 9

94. One way to solve it is by making 3 equations and solve them simultaneously. But there is rather easier way to solve it using Backtracing. It's given that at the end, each had 24 tractors (24, 24, 24) i.e. after Z gave tractors to X & Y as many as they had. It means that after getting tractors from Z their tractors got doubled. So before Z gave them tractors, they had 12 tractors each and Z had 48 tractors. (12, 12, 48) Similarly, before Y gave tractors to X & Z, they had 6 & 24 tractors respectively and Y had 42 tractors i.e. (6, 42, 24) Again, before X gave tractors to Y & Z, they had 21 & 12 tractors respectively and X had 39 tractors i.e. (39, 21, 12)

95. The sign-maker will need 192 zeroes. Divide 1000 building numbers into groups of 100 each as follow: (1..100), (101..200), (201..300), ... (901..1000); For the first group, sign-maker will need 11 zeroes. For group numbers 2 to 9, he will require 20 zeroes each. And for group number 10, he will require 21 zeroes. The total numbers of zeroes required are = 11 + 8*20 + 21=192

96. Total 36 medals were awarded and the contest was for 6 days.
On day 1: Medals awarded=(1+35 / 7) = 6 : Remaining 30 medals
On day 2: Medals awarded=(2+28 / 7) = 6 : Remaining 24 medals
On day 3: Medals awarded=(3+21 / 7) = 6 : Remaining 18 medals
On day 4: Medals awarded=(4 +14 / 7) = 6 : Remaining 12 medals
On day 5: Medals awarded=(5 +7 / 7) = 6 : Remaining 6 medals
On day 6: Medals awarded 6

97. Assume that the initial lenght of both the candle was L and Vipul studied for X hours. In X hours, total thick candle burnt = XL / 6
In X hours, total thin candle burnt = XL / 4
After X hours, total thick candle remaining = L - XL / 6
After X hours, total thin candle remaining = L - XL / 4
Also, it is given that the thick candle was twice as long as the thin one when he finally went to sleep.
(L - XL / 6) = 2(L - XL / 4)
(6 - X) / 6 = (4 - X) / 2
X = 3
Hence, Vipul studied for 3 hours i.e. 180 minutes in candle light.

98. Assume his salary was Rs. X
He earns 5% raise. So his salary is (105*X) / 100
A year later he receives 2.5% cut. So his salary is ((105*X) / 100)*(97.5 / 100) which is Rs. 22702.68
Hence, solving equation ((105*X) / 100)*(97.5 / 100) = 22702.68
X = 22176

99. It is given that the time between first and last ticks at 6'o is 30 seconds. Total time gaps between first and last ticks at 6'o = 5 (i.e. between 1 & 2, 2 & 3, 3 & 4, 4 & 5 and 5 & 6)So time gap between two ticks = 30 / 5 = 6 seconds. Now, total time gaps between first and last ticks at 12'o = 11. Therefore time taken for 12 ticks = 11 * 6 = 66 seconds (and not 60 seconds)

100. A(1, 3) = A(0, A(1, 2))
A(1, 2) = A(0, A(1, 1))
A(1, 1) = A(0, A(1, 0))
A(1, 0) = A(0, 0) = 1
Re substituting, A(1, 1) = A(0, 1) = 2
A(1, 2) = A(0, 2) = 3
A(1, 3) = A(0, 3) = 4

101. A(2, 0) = A(1, 0)=A(0, 0) = 0+1= 1

102. A(1, 2) = A(0, A(1, 1)) by definition.

103. 144 2 + 169 2 + (144 × 169)
12 4 + 13 4 + (12 2 × 13 2)
={12 2+(12×13)+13 2}{12 2–(12×13)+13 2}
= 469 × 157
This is as per the formula
a4+b4+a2b2=(a2+ab+b2)(a2–ab+b2).

104. The surface area of a sphere is proportional to the square of the radius.
Thus, $S_B / S_A = 4 / 1$ (S. A. of B is 300% higher than A)
$r_B / r_A = 2 / 1$
The volume of a sphere is proportional to the cube of the radius.
Thus, $V_B / V_A = 8 / 1$
Or, V_A is $7 / 8^{th}$ less than B i.e. 87.5%

105. For the curves to intersect, $\log_{10} X = X^{-1}$
Thus, $\log_{10} X = 1 / X$ or $X^x = 10$
This is possible for only one value of x (2< x < 3).

106. The number of goats remain the same.
If the percentage that is added every time is equal to the percentage that is sold, then there should be a net decrease. The same will be the case if the percentage added is less than the percentage sold.
The only way, the number of goats will remain the same is if p > q.

107. Case 1: If x < 2, then y=2–x + 2.5 – x + 3.6 – x = 8.1 – 3x.
This will be least if x is highest i.e. just less than 2.
In this case y will be just more than 2.1
Case 2: If $2 \le x < 2.5$, then y=x–2 + 2.5 – x 3.6 – x = 4.1 – x
Again, this will be least if x is the highest case y will be just more than 1.6.
Case 3: If $2.5 \le x < 3.6$, then y = x – 2 + x – 2.5 + 3.6 – x = x – 0.9
This will be least if x is least i.e. X= 2.5.
Case 4: If In this case y = 1.6 $X \ge 3.6$, then
y = x – 2 + x – 2.5 + x – 3.6 = 3x – 8.1
The minimum value of this will be at x = 3.6 = 27
Hence the minimum value of y is attained at x = 2.5

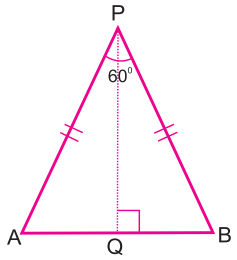
108. There are 101 integers in all, of which 51 are even.
From 100 to 200, there are 14 multiples of 7, of which 7 are even.
There are 11 multiples of 9, of which 6 are even.
But there is one integer (i.e. 126) that is a multiple of both 7 and 9 and also even.
Hence the answer is (51–7 – 6 + 1) = 39

109. The number 27 has no significance here. Statement 2, will never be true for any number of people.
Let us the case of 2 people.
If A knows B and B only knows A, both of them have 1 acquaintance each. Thus, B should be knowing atleast one other person.
Let us say he knows 'C' as well. So now 'B' has two acquaintances (A and C), but C has only acquaintance (B), which is equal to that of A.
To close this loop, C will have to know A as well. In which case he will have two acquaintances, which is the same as that of C.
Thus the loop will never be completed unless atleast two of them have the

same number of acquaintances. Besides, statements 1, 3 and 4 can be true.

Note: If we consider the other wise, to satisfy condition 2, the first person must have 26 acquaintances, the second 25, third 24 and so on. If we continue, the last one should have 0 acquaintance, which is not possible.

110.



Given $\angle APB = 60°$ and AB = b.

$$\therefore PQ = \frac{b}{2} \times \sqrt{3}$$

Next, $\frac{b}{2}$, h and PQ form a right angle triangle.

$$\therefore \frac{b^2}{4} + h^2 = \frac{3b^2}{4}$$

$$\therefore 2h^2 = b^2$$

111. If y = 10°,

$\angle BOC$ = 10° (opposite equal sides)

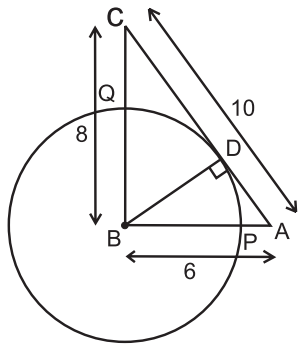
$\angle OBA$ = 20° (external angle of ΔBOC)

$\angle OAB$ = 20 (opposite equal sides)

$\angle AOD$ =30°(external angle of ΔAOC)

Thus k = 3

112.



Triangle ABC is a right angled triangle.

Thus 1/2 × BC × AB = 1/2 × BD × AC

Or, 6 × 8 = BD × 10. Thus BD = 4.8.

Therefore, BP = BQ = 4.8.

So, AP = AB – BP = 6 – 4.8 = 1.2 and CQ = BC – BQ = 8 – 4.8 = 3.2.

Thus, AP : CQ = 1.2 : 3.2 = 3 : 8

113. Required ratio=$(2^2-1)/(3^2-2^2)=3/5$

114. Try with whole cubes as they are fewer in number; $4^3 = 64$ and $8^2 = 64$. Hence 1 is answer.

115. Since E and F are independent events; Hence P(E or F)=P(E)xP(F)= 0.21

116. There are 36 possible outcomes when a pair of dice is thrown. Consider that if one of the dice rolled is a 1, there are six possibilities for the other die. If one of the dice rolled a 2, the same is still true. And the same is true if one of the dice is a 3,4,5, or 6. If this is still confusing, look at the following (abbreviated) list of outcomes: [(1,1), (1,2), (1,3), (1,4), (1,5), (1,6); (2,1), (2,2), (2,3)… (3,1), (3,2), (3,3)… (4,1)…(5,1)…(6,1)….

The total number of outcomes is 6 × 6 = 36. Since four of the outcomes have a total of 5 [(1,4),(4,1),(2,3),(3,2)], the probability of the two dice adding up to 5 is 4/36 = 1/9.

117. First, let's determine the number of red and blue marbles respectively. The ratio 2:3 tells us that the total of 30 marbles must be broken into 5 groups of 6 marbles, each with 2 groups of red marbles and 3 groups of blue marbles. Setting up the equation 2x + 3x = 5x =30 employs the same reasoning. Solving, we find that there are 12 red marbles and 18 blue marbles. We are asked to draw twice and return the marble after each draw. Therefore, the first draw does not affect the probability of the second draw. We return the marble after the draw, and therefore, we return the situation to the initial conditions before the second draw. Nothing is altered in between draws, and therefore, the events are independent.

Now let's examine the probabilities. Drawing a red marble would be 12/30=2/5. The same is true for the second draw. Since we want two red marbles in a row, the question is really saying that we want a red marble on the first draw **and** a red marble on the second draw. The "and" means we should expect a lower probability than 2/5. Understanding that the "and" is implicit can help you eliminate choices d and e which are both too big. Therefore, our total probability is P(A and B) = P(A) ×. P(B) = 2/5 × 2/5 = 4/25.

If you return every marble you select, the probability of drawing another marble is unaffected; the events are independent. If you do not return the marbles, the number of marbles is affected and therefore dependent.

118. The question asks for either an ace or a king. Since there are four kings and four aces in a deck, the probabilities for event A and event B are the same, 4/52 = 1/13. Our answer must be more than this, so eliminate a and b. Do kings and aces have anything to do with each other? Is there such a thing as an ace of kings or a king of aces? No, so we don't have to worry about having over-counted; the events are mutually exclusive. The probability is straightforward: P(A or B)=P(A)+P(B)=1/13+1/13=2/13.

119. This can be computed by considering only outcomes for which the first die is a 6. Then, determine the proportion of these outcomes that total more than 8. All the possible outcomes for two dice are shown in the section on simple probability. There are 6 outcomes for which the first die is a 6: (6,1), (6,2), (6,3), (6,4), (6,5), (6,6), and of these, there are four that total more than 8. The probability of a total greater than 8 given that the first die is 6 is therefore 4/6 = 2/3.

120. A team of 6 members has to be selected from the 10 players. This can be done in 10C6 or 210 ways.

Now, the captain can be selected from these 6 players in 6 ways.

Therefore, total ways the selection can be made is 210*6 = 1260.

121. Each of the span is an independent event and the outcome of the 15th span will not depend on the outcome of the earlier spans.

122. As per given conditions, there are three possible combinations for 2nd, 3rd and 4th digits. They are (3, 0, 7) or (4, 1, 8) or (5, 2, 9) It is given that there are 3 pairs whose sum is 11. All possible pairs are (2, 9), (3, 8), (4, 7), (5, 6). Now required number is 5 digit number and it contains 3 pairs of 11. So it must not be having 0 and 1 in it. Hence, the only possible combination for 2nd, 3rd and 4th digits is (5, 2, 9) Also, 1st digit is thrice the last digit.

The possible combinations are (3, 1), (6, 2) and (9, 3), out of which only (6, 2) with (5, 2, 9) gives 3 pairs of 11. Hence, the answer is 65292.

123. The last digit can not be 0.
If the last digit is 1, the only possible number is 101. (Note that 011 is not a 3-digit number)
If the last digit is 2, the possible numbers are 202 and 112.
If the last digit is 3, the possible numbers are 303, 213 and 123.
If the last digit is 4, the possible numbers are 404, 314, 224 and 134.
If the last digit is 5, the possible numbers are 505, 415, 325, 235 and 145.
Note the pattern here - If the last digit is 1, there is only one number. If the last digit is 2,
there are two numbers. If the last digit is 3, there are three numbers. If the last digit is 4,
there are four numbers. If the last digit is 5, there are five numbers. And so on.....
Thus, total numbers are: 1 + 2 + 3 + 4 + 5 + 6 + 7 + 8 + 9 = 45

124. There are two cases to be considered.
CASE 1 : King of Hearts is drawn from Pack A and shuffled with Pack B
Probability of drawing King of Hearts from Pack A=1/51 (as Queen of Hearts is not to be
drawn)
Probability of having King of Hearts on the top of the Pack B = 2/53
So total probability of case 1 = (1/51) * (2/53) = 2 / (51 * 53)
CASE 2 : King of Hearts is not drawn from Pack A
Probability of not drawing King of Hearts from Pack A= 50/51 (as Queen of Hearts is not to be drawn)
Probability of having King of Hearts on the top of the Pack B = 1/53
So total probability of case 2 = (50/51) * (1/53) = 50 / (51 * 53)
Now adding both the probability, the required probability is
=2 / (51 * 53) + 50 / (51 * 53) = 0.0192378

125. Let's mark the corners of the triangle as A,B,C. There are total 8 ways in which ants can move.
A->B, B->C, C->A
A->B, B->C, C->B
A->B, B->A, C->A
A->B, B->A, C->B
A->C, C->B, B->A
A->C, C->B, B->C
A->C, C->A, B->A
A->C, C->A, B->C
Out of which, there are only two cases under which the ants won't collide :
A->B, B->C, C->A
A->C, C->B, B->A

126. It is given that the first digit is 1/3 of the second. There are 3 such possibilities.
1 and 3
2 and 6
3 and 9
Now, the third digit is the sum of the first and second digits.
1 + 3 = 4
2 + 6 = 8
3 + 9 = 12
It is clear that option 3 is not possible. So we are left with only two options. Also, the last digit
is three times the second, which rules out the second option. Hence, the answer is 1349.

127. There are 10 digits i.e. 0-9. First digit can be dialed in 10 ways. Second digit can be dialed in 10
ways. Third digit can be dialed in 10 ways. And so on.....
Thus, 7-digit can be dialed in 10*10*10*10*10*10*10 (=10,000,000) ways. And, you have just one telephone number. Hence, the possibility that you will dial your own number is 1 in 10,000,000.
Note that 0123456 may not be a valid 7-digit telephone number. But while dialing in random
order, that is one of the possible 7-digit number which you may dial.

128. There are total of 64 blocks on a chessboard. So 3 blocks can be chosen out of 64 in 64C3 ways.
So the sample space is = 41664
There are 2 diagonal on chessboard each one having 8 blocks. Consider one of them.
3 blocks out of 8 blocks in diagonal can be chosen in 8C3 ways.
But there are 2 such diagonals, hence favourables = 2 * 8C3 = 2 * 56 = 112
The require probability is
= 112 / 41664
= 1 / 372
= 0.002688

129. The probability of at least two out of a group of 50 people share the same birthday is 97%
Probability of at least two share the same birthday = 1 - probability of all 50 have different Birthdays
Probability of all 50 have different birthday
= 365/365 * 364/365 * 363/365 * ... * 317/365 * 316/365
= (365 * 364 * 363 * 362 * ... * 317 * 316)/36550
= 0.0296264
Probability of at least two share the same birthday
= 1 - 0.0296264
= 0.9703735
= 97% approx.

130. The maximum possible value of X is 13 minutes 20 seconds.
In one minute,
pipe A can fill 1/30 part of the tank.
pipe B can fill 1/24 part of the tank.
Thus, the net water level increase in one minute is
= 1/30 + 1/24
= 3/40 part of the tank
In order to keep the tank always empty, outlet pipe C should empty at least 3/40 part of
the tank in one minute. Thus, pipe C can empty the full tank in 40/3 i.e. 13 minutes 20
seconds.

131. 7! onwards all terms are divisible by 7 as 7 is one of the factor. So there is no remainder left
for those terms i.e. remainder left after dividing 7! + 8! + 9! + ... + 100! is 0.
The only part to be consider is
= 1! + 2! + 3! + 4! + 5! + 6!
= 1 + 2 + 6 + 24 + 120 + 720
= 873
The remainder left after dividing 873 by 7 is 5
Hence, the remainder is 5.

132. the first person shakes hands with 11 people, the second person also shakes
hands with 11 people, but you only count 10, because the hand shake with the first person was
already counted. Then add 9 for the third person, 8 for the fourth, & so on.
66 hand shakes took place before & 66 after the meeting, for a total of 132.

133. At 3:15 minute hand will be perfactly horizontal pointing towards 3. Whereas hour hand will be towards 4. Also, hour hand must have covered 1/4 of angle between 3 and 4.
The angle between two adjacent digits is 360/12 = 30 degrees.

Hence 1/4 of it is 7.5 degrees.

134. 44; 36 of the cubes have EXACTLY 2 of their sides painted black, but because a cube with 3 of its sides painted black has 2 of its sides painted black, you must also include the corner cubes.

135. Here there are 20 rows and 10 columns or vice versa. Hence, total possible rectangles

= (20 + 19 + 18 + 17 + 16 + ... + 3 + 2 + 1) * (10 + 9 +8 + 7 + ... + 3 + 2 + 1)

= (210) * (55)

= 11550

136. IFJF

137. FFJI (option D)

138. JJI (Option A)

139. The correct response is D. providing additional benefits to a particular "high risk" group in order to reduce payout risk later works only if the insurance company can identify who is in the group to begin with. That's why D, which tells us that it's easy to identify individuals at high risk of heart disease, lends support to the company's response (assuming, of course, that the company wants to minimize payouts, which is given in the argument).

140. The correct response is C.

141. The correct response is A.

142. The correct response is D.

143. The correct response is C. The statement mentions the self-sufficiency of India in continuous casting refractory. This means that they are needed in the country. So, I is implicit. Since continuous casting refractory are needed in integrated steel plants, it means they are in demand. So, II is implicit.

144. The correct response is B. The statement talks of eradicating corruption and prejudice from the society, which indicates that these aspects are undesirable. So, I is not implicit. Besides, the statement mentions about reforming the administrative system. So, II is implicit.

145.)Option A (Clearly, for better economic gain, losses should be reduced and income increased. So, only course I follows)

146. Option A (Clearly, such projects shall be an asset and a source of income to the country later on. So, course I shall follow)

147. (D);

148. Option D.This is the only choice that indicates that an additional period of play is taking place to determine the winner of a game that ended in a tie.

149. Option B. After getting some good news, Jeremy and a few friends casually get together for a drink after work, thereby having an informal gathering. Choices A and C describe more formal types of gatherings. Choice D describes a chance or coincidental kind of meeting.

150. Option C. Malcolm is the only person returning to a social system that he has been away from for an extended period of time.

151. Option D. Choices A, B, and C do not describe situations in which a product is guaranteed. Only choice D reflects a situation in which a seller attests to the quality of a product by giving the buyer a promise or assurance about its quality.

152. Option D. The speaker maintains that to burn a flag is an act of freedom of speech, which is among the things the flag represents.

153. Option A. If an action is not included under freedom of speech, the speaker's main argument is incorrect.

154. Option B. This is the best choice because it relates to a situation where a proposed law would actually violate the part of the Constitution it is intended to protect.

155. (D)- The options (a) and (b) contain the word amount and people can be counted, they come in numbers not amount. So option (a) and (b) are not correct. And option (c)'s a number of people even larger refers to bigger people. So the option (d) is best suited here as it clearly refers to more people.

156. (C) -The original sentence has two mistakes with subject/verb agreement. The subject contains two nouns, belief and curiosity. So there's a plural subject has is singular. It is also unclear what ***their*** refers to ***Public or UFO's***. Logically it would seem the reference it to the public, but public is singular, so we'd have to use its, not their and only the option C contains the singular verb ***has.***

157. (C) - One idiom being tested here is ***hope for*** versus ***hope to.*** One can hope for something to happen or for a thing-hope for a peaceful resolution to the problem. One can also hope to do something like hope to travel the world one day. In this sentence the unemployed want to do something i.e. to change careers. The proper idiom is ***hope to.***

158. (B) -Using ***Although***, makes it clear the contrast between Lessing's recent work and her better known early work.

159. (D)

160. (A) - The underlined portion of this sentence follows a comma, includes another comma and the conjunction ***"and",*** and is preceded by the key words ***"such as"***. These clues indicate a series, in which all the elements much have parallel form. The first element is ***attending class***. Because it is not underlined, the rest of the series must be adapted to match it. ***Reading assignments*** matches ***attending class***, but ***to write*** does not. Thus the answer needs to replace ***to write with writing.***

161.(D) - ***A not only sentence construction must be completed with but also.*** The given sentence does so and has no other errors.

162. (A) - The sentence compares the percentage of revenue that ONGC spends on in insurance with the percentage that NTPC spends on salaries. Since in the option A these two things are in the same form, the comparison is clear and grammatically correct.

163. (C) - The original sentence begins with the passive voice ***(it was decided)*** and the last part of the sentence is wrongly constructed because it is not necessary to say that the computers are both ***combined and linked.*** Option C addresses both these errors by converting the ***passive voice to active*** and simplifying the last part of the sentence.

164. (B) - The underlined portion contains list of 3 sources of protein. These three sources must have parallel forms, but soy, eggs, and drinking milk do not. A parallel construction would be soy, eggs, or milk.

165. (D) Primary purpose is another term for main idea. The primary purpose of this passage is to explain how Braudel's ideas were a departure from traditional approaches to history.

166. (D)
167. (C)
168. (D) - In this inference question, correct choice D refers to a point made in the opening paragraph.
169. (B) - Criticism of Braudel's perspective can be found in the last paragraph which says that Annales historians "minimize the difference between social sciences".
170. (A) - The Longue Duree is defined in the passage. Item I give us the example of a longue duree that's actually given in the passage.
171. (D) -
172. (B) - (A) is out of the scope: The passage focuses on what happened to one group of Southerners who immigrated to Brazil, not on the source of changes in all Southerner's lives. (C) is out of scope for the same reason. (D) Distorts Paragraph 2: there is no suggestion that Brazil adopted the heritage of the antebellum South. And though Paragraph 1 does mention emigration from Alabama and Texas, the passage does not account for all the emigration from the U.S. after the Civil war, as (E) suggests, only emigration from the South to Brazil. (B) is correct.
173. (D) -The answer to this inference question will be well-supported by the information in the passage; the wrong answers will not. Option D is correct as it reflects the Southerners influence on Brazilian society.
174. (D)-
175. (A) - this question asks why the author makes a certain statement. Though the quote itself mentions nothing about the fears, from the phrase "without yielding their Southern heritage" we can infer that Southerners expected to have to give up their heritage but preferred not to.
176. (B)
177. (C)- The Passage clearly states that the temporal lobes play a critical role in memory processes and that the temporal lobes are located in the lower parts of the brain
178. (D) - Here we need to simply define a phrase as used by the author. A "unitary superstructure" where all memories are stored is mentioned as an alternative theory for an earlier described one: "that particular memory is stored in specific sites in the brain". So we can conclude that a memory superstructure will hold all memories in one place. This is reference to a specific brain region.
179. (D) - The passage tell us that by stimulating different points on the lower parts of the brain (the temporal lobes) (Penfield) elicited distinct and vivid memories in his patients. We know that Penfield's operations were an attempt to pinpoint the source of seizure activity and then remove that piece of tissue.
180. (D)
181. (C) - The purpose of the passage is to illustrate how quickly a contagious virus such as SARS can spread throughout the global population. The examples of simple contact-simply talking to or touching an infected person-help in support this illustrating the ease with which the virus can be transmitted in the passage. So option C is correct.
182. (A)- The passage states that the initial human SARS cases Guangdong curiously occurred independently of each other, but at that time, certain animals considered to be delicacies in Guangdong were known to have a version of the SARS virus. Though it is never stated outright in the passage, one can easily assume that these initials are patients could have caught the virus from eating the meat of these delicacies therefore A is the best answer.
183. (B)-
184. (D) - The idea presented in the second paragraph that SARS is easily transmitted through close contact is demonstrated in the passage by the cases of the Chinese doctor and the 20 hospital workers in Singapore who contracted the Virus after coming in contact with SARS patients. These examples offer strong support of the statement made in D, health care professions seem to be especially at risk, and therefore need to be specially worry.
185. (A) - A global question such as this one asks you to look at the passage as a whole usually to ascertain its purpose, or as in this title related question, sum up its main idea. The main idea of this passage is that an unchecked, highly contagious virus like SARS can spread throughout the world in just a few short months. The choice that best relates this main idea sums up the theme of the overall passage is A.
186.(D) - The author reveals her primary purpose for writing the passage when she states "there is no doubt that the body absorbs varying levels of radiations emitted by cell phones, but the question is, do these levels pose a health risk?" She then uses the rest of the passage to address this question. Therefore the choice D is correct.
187. (B)
188. (B)
189. (B)
190. (A) - This question asks you to infer why the author would note Motorola's affiliation with the confirmation group. Of the choices A and C should catch our attention. Of the two, A is better because its neutral tone matches the passage's tone better than the accusatory tone of C, B and D are out of scope. C tough not a stretch, a bit extreme to fit the passage. Plus such an implication would probably have some precedent somewhere in the text, there is none.
191. (A)
192. (B)
193. (A) -the passage as a whole presents reasons state intervention is necessary for the industrialization of many less developed nations. B introduces the idea of outside the system, C contradicts the passage by saying that state participation is not as important as private investment, D says that less developed countries cannot be industries at all.
194. (A)
195. (D): Technical indivisibilities in social overhead capital and low level equilibrium trap refer to problems in under developed nations that can make state participation necessary. D says that the technical indivisibilities can prevent development from occurring, and the low level equilibrium can negate its effect. The wrong answer choices all say that at least one of these things is good, or at least neutral.
196. (D)
197. (C): C is correct as it explains how economic growth in subsistence level economies tends to produce population growth which negates the effects of the economic growth.
198. (A) is the best answer. If

applicants who are in fact dishonest claimed to be honest, the survey results would show a smaller proportion of dishonest applicants than actually exists. Therefore, this choice is the best answer. B is inappropriate because generally honest applicants who claimed to be dishonest could contribute to the overestimation, but not to the underestimation, of dishonest applicants. D is inappropriate because applicants who admitted their dishonesty would not contribute to an underestimation of the proportion of dishonest applicants. C and E are inappropriate because the argument is concerned neither with degrees of dishonesty nor with the honesty of non-applicants.

199. C is a clear example of a defensive, non-innovative strategy that underestimates the effects of others' innovations: the slide-rule manufacturer acted as though any advantages offered by the newer and fundamentally different technology of a competing product, the electronic calculator, could be matched by improving the older, more familiar product. C is thus the best answer. A is not an example of the defensive strategy; it presents a case in which innovative products displaces an older product from its traditional market but in so doing made possible a new marketing strategy for the older product. B is not clearly an example of the defensive strategy since it does no describe a response to the innovations of others. D and E are cases of new products finding unintended users, not of responses to innovations of others, so they are not examples of the defensive strategy described.

200. If a substance that causes no environmental damage were subject to controls, those controls would be more restrictive than necessary. Choice B is therefore the best answer. Ensuring prompt implementation of controls, as choice A claims, is not a necessary part of avoiding excessively restrictive controls. Although it would probably help to avoid excessive restrictions if some of the countries producing the most effluents favored uniform controls, it is not necessary that all such countries do, as choice C claims. Not all of any given pollutant need reach the North Sea, as choice D claims, since at most some needs to. Since the controls can be excessively restrictive even if the damage already inflicted is reversible, choice E is incorrect.

201. Since an unsecured loan is more risky, from the lender's point of view, than a loan baked by collateral, the fact that lenders receive higher interest rates for unsecured loans is an illustration of the principle outlined in the passage. Thus, choice B is the best answer. None of the other choices gives a clear instance in which increased risk is compensated by the potential for increased return. Choice A does not concern return on investment at all. Choice C is an instance of low return unrelated to risk. In choice D, contrary to the principle, the rate of return remains constant despite possible variations in risk, and choice E also runs counter to the principle if investments in well-established companies entail less risk.

202. Demonstrate their strength. **Hence B**

203. String of commentaries on. **Hence D**

204. The passage of time, curse. **Hence C**

205. Rural, restructure **Hence D**

206. Superficial attempt at liberalization. **Hence A**

207. (C) **208.** (D)
209. (D) **210.** (C)
211. (E) **212.** (E)
213. (B) **214.** (D)
215. (C)
216. (B)
217. (A)
218. (B)
219. (A)
220. (D)
221. (C)
222. (D)
223. (D)
224. (C)

225. (D): The correct response is (D). Qualm means apprehension or reticence; a person who has a confident attitude is said to have "no qualms."

226. (C): The correct response is (C). Bucolic means pastoral, rustic, or agrarian; civic means municipal or urban.

227. (D): The correct response is (D). Veneration is an attitude of respect; contempt is an attitude of disdain or disgust.

228. (A): The correct response is (A). Soporific means causing sleepiness; something that is exciting would have a contrary effect.

229. (C): The correct response is (C). To renege is to go back on one's promise, just the opposite of following through on one's promise.

230. (D) **231.** (B)
232. (A) **233.** (C)
234. (B)

235. (C) the option C should read like this " similar to them that Roentgen produced only a year earlier with a gas discharge tube"

236. (A): The sentence should have been like this " unless present polices are reversed immediately, the world may suffer permanent damage from the unregulated use of pesticides"

237. (D): The sentence should read as "In some nations, the political system works by a simple logic the more an organization contributesto politicians campaign funds the better its interest are served by the policies and actions of the government.

238. (D): The sentence should read as "……believes that the park needs not be redesigned but to be returned to its former conditions.

239. (D): The sentence should read as "……..as in the prospering telecommunications industry.

240. (B): The sentence should read as "……. Becoming embroiled in a war raging among those who support public financing".

241. (C): The sentence should read as "……. Over whether fare hikes should be a first or last".

242. D: The sentence should read as ".....their windows are built to conserve energy and they do."

243. (B): The sentence should read like "…before Greece was Greece, it was a collection of small city states.

244. (B): The sentence should be read as ".....approving casino gambling the town of Riverside, Missouri has been".

245. (B): The sentence should be read as "…. Was one of its most important objectives".

246. A. The sentence should read as "More than any other animal…."