

SYMBIOSIS NATIONAL APTITUDE TEST (SNAP)

SOLVED PAPER - 2012

(HELD ON 16-12-2012)

(Based on Memory)

SECTION I QUANTITATIVE APTITUDE & DATA INTERPRETATION

1. At a college football game, $\frac{4}{5}$ of the seats in the lower deck of the stadium were sold. If $\frac{1}{4}$ of all the seating in the stadium is located in the lower deck, and if $\frac{2}{3}$ of all the seats in the stadium were sold, then what fraction of the unsold seats in the stadium was in the lower deck ?

(a) $\frac{3}{20}$ (b) $\frac{1}{6}$
(c) $\frac{1}{5}$ (d) $\frac{1}{3}$

2. A country follows a progressive taxation system under which the income tax rates applicable varies for different slabs of income. Total tax is computed by calculating the tax for each slab and adding them up. The rates applicable are as follows :

Annual income			Tax rate
0	-	50,000	0%
50,001	-	60,000	10%
60,001	-	1,50,000	20%
	>	1,50,000	30%

If my income is ₹ 1,70,000, then what is the tax payable by me?

(a) ₹ 51,000 (b) ₹ 17,000
(c) ₹ 34,000 (d) ₹ 25,000

3. A private telephone company serving a small community makes a profit of ₹ 12 per subscriber, if it has 725 subscribers. It decides to reduce the rate by a fixed sum for each subscriber over 725, thereby reducing the profit by 1 paise per subscriber. Thus, there will be profit of ₹ 11.99 on each of the 726 subscribers, ₹ 11.98 on each of the 727 subscribers etc. The number of subscribers which will give the company, the maximum profit, is:

(a) 961 (b) 962
(c) 963 (d) None of these

4. A milkman buys milk contained in 10 vessels of equal size. If he sells his milk at ₹ 5 a litre, he loses ₹ 200; if he sells it at Rs. 6 a litre, he would gain ₹ 150 on the whole. Find the number of litres contained in each vessel.

(a) 20 litres (b) 30 litres
(c) 25 litres (d) 35 litres

5. A firm of readymade garments makes both men's and women's shirts. Its average profit is 6% of the sales. Average profit in men's shirts is 8% of the sales and women's shirts comprise 60% of the output. The average profit per sale rupee in women shirts is

(a) 0.0466 (b) 0.0666
(c) 0.0166 (d) None of these

6. In an express train, the numbers of passengers travelling in A.C. Sleeper Class, First Class and Sleeper Class are in the ratio 1 : 2 : 3, and the fares to each of these classes are in the ratio 5 : 4 : 2. If the total income from this train is ₹ 54000, then the income from the A.C. sleeper class is

(a) ₹ 8000 (b) ₹ 12000
(c) ₹ 10000 (d) None of these

7. A dealer buys dry fruit at the rate of ₹ 100, ₹ 80 and Rs. 60 per kg. He bought them in the ratio 12 : 15 : 20 by weight. He in total gets 20% profit by selling the first two and at last he finds he has no gain no loss in selling the whole quantity which he had. What was the percentage loss he suffered for the third quantity ?

(a) 40% (b) 20%
(c) 30% (d) 50%

8. Rahul started a business with a capital of ₹ 8,000. After six months, Sanjay joined him with investment of some capital. If at the end of the year each of them gets equal amount as profit, how much did Sanjay invest in the business?

(a) ₹ 17,500 (b) ₹ 18,000
(c) ₹ 16,000 (d) ₹ 16,500

9. A man buys a watch for ₹ 1950 in cash and sells it for ₹ 2200 on credit of 1 year. If the rate of interest is 10% per annum, then the man

(a) Gains ₹ 55 (b) Gains ₹ 50
(c) Loses ₹ 30 (d) Gains ₹ 30

10. An article is listed at ₹ 65. A customer bought this article for ₹ 56.16 and got two successive discounts of which the first one is 10%. The other rate of discount of this scheme that was allowed by the shopkeeper was :

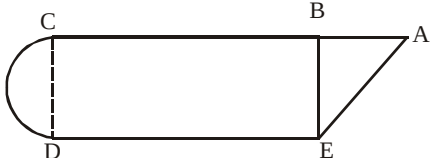
(a) 3% (b) 4%
(c) 6% (d) 2%

11. The capital of a company is made up of 50,000 preferred shares with dividend of 20% and 20,000 common shares, the par value of each type of share being ₹ 10. The company had a total profit of ₹ 1,80,000 out of which ₹ 30,000 was kept in reserve and the remaining distributed to shareholders. Find the dividend percent to the common shareholders.

(a) 20% (b) 24%
(c) 25% (d) 30%

12. A man buys apples at a certain price per dozen and sells them at eight times per hundred. What is his gain or loss per cent?

(a) 4% loss (b) $8\frac{1}{4}$ loss
(c) 4% gain (d) $6\frac{1}{4}$ % gain

13. By selling 12 notebooks, the seller earns a profit equal to the selling price of two notebooks. What is his percentage profit?
 (a) 25% (b) 20%
 (c) $16\frac{2}{3}\%$ (d) Data inadequate
14. A manufacturer of a certain item can sell all he can produce at the selling price of ₹ 60 each. It costs him ₹ 40 in materials and labour to produce each item and he has overhead expenses of ₹ 3,000 per week in order to operate that plant. The number of units he should produce and sell in order to make a profit of at least ₹ 1,000 per week is
 (a) 300 (b) 250
 (c) 400 (d) 200
15. An aeroplane first flew with a speed of 440 km/h and covered a certain distance. It still had to cover 770 km less than what it had already covered, but it flew with a speed of 660 km/h. The average speed for the entire flight was 500 km/h. Find the total distance covered.
 (a) 3250 km (b) 2750 km
 (c) 4400 km (d) 1375 km
16. Train A running at 60 km/h leaves Mumbai for Delhi at 6 p.m. Train B running at 90 km/h also leaves for Delhi at 9 p.m. Train C leaves Delhi for Mumbai at 9 p.m. If all the three trains meet at the same time between Mumbai and Delhi, then what is the speed of train C, if distance between Delhi and Mumbai is 1260 km?
 (a) 60 km/h (b) 90 km/h
 (c) 120 km/h (d) 135 km/h
17. A contractor undertakes to build a wall in 50 days. He employs 50 people for the same. However after 25 days he finds that only 40% of the work is complete. How many more men need to be employed to complete the work in time?
 (a) 25 (b) 30
 (c) 35 (d) 20
18. A race course is 400 metres long. A and B run a race and A wins by 5 metres. B and C run over the same course and B wins by 4 metres. C and D run over it and D wins by 16 metres. If A and D run over it, then who would win and by how much?
 (a) A by 8.4 metres (b) D by 8.4 metres
 (c) D by 7.3 metres (d) A by 7.3 metres
19. A leak was found in a ship when it was 77 km from the shore. It was found that the leak admits 2.25 tonnes of water in 5.5 minutes. 92 tonnes will suffice to sink the ship. But the pumps can throw out the water @ 12 tonnes an hour. Find the average rate of sailing at which the ship may reach the shore as it begins to sink.
 (a) 9.75 km/h (b) 13 km/h
 (c) 14.5 km/h (d) 10.5 km/h
20. A man in a train notices that he can count 21 telephone posts in one minute. If they are known to be 50 metres apart, then at what speed is the train travelling?
 (a) 45 km/h (b) 60 km/h
 (c) 63 km/h (d) 65 km/h
21. A man buys a certain quantity of apples, mangoes and bananas. If the mangoes were to cost as same as apples, he would have to forego the bananas to buy the same number of mangoes as he had bought earlier (for the same total amount). The amount spent by him on mangoes and bananas together is 50% more than the amount spent on apple. The total amount spent in the transaction is ₹ 140. The number of mangoes bought is the same as the number of bananas. If he wishes to buy the same number of apples as well, how much additional amount would have to be spent by him?
 (a) 56 (b) 140
 (c) 28 (d) 42
22. In a special racing event, the person who enclosed the maximum area would be the winner and would get ₹ 100 every square metre of area covered by him/her. Jonnson, who successfully completed the race and was the eventual winner, enclosed the area shown in the figure below. What is the prize money won?
 (Note : The arc from C to D makes a complete semi-circle).
 AB = 3 m, BC = 10 m, CD = BE = 2 m
- 
- (a) ₹ 2914 (b) ₹ 2457
 (c) ₹ 2614 (d) ₹ 2500
23. A lawn is in the form of an isosceles triangle. The cost of turfing on it came to ₹ 1,200 at ₹ 4 per m². If the base be 40 m long, find the length of each side.
 (a) 25 m (b) 24 m
 (c) 26 m (d) None of these
24. A survey on a sample of 25 new cars being sold at a local auto dealer was conducted to see which of the three popular options—air-conditioning, radio and power windows—were already installed.
 The survey found :
 15 had air-conditioning.
 2 had air-conditioning and power windows but no radios.
 12 had radios.
 6 had air-conditioning and radios but no power windows.
 11 had power windows.
 4 had radio and power windows.
 3 had all three options.
 What is the number of cars that had none of the options?
 (a) 4 (b) 3
 (c) 1 (d) 2
25. Large, medium and small ships are used to bring water. 4 large ships carry as much water as 7 small ships. 3 medium ships carry the same amount of water as 2 large ships, and 1 small ship. 15 large, 7 medium and 14 small ships each made 36 journeys and brought a certain quantity of water. In how many journeys would 12 large, 14 medium and 21 small ships bring the same quantity?
 (a) 32 (b) 25
 (c) 29 (d) 49

26. The age of the father 5 years ago was 5 times the age of his son. At present the father's age is 3 times that of his son. What is the present age of the father?

- (a) 33 years (b) 30 years
(c) 45 years (d) None of these

27. The probability that a contractor will get a plumbing contract is $\frac{2}{3}$ and the probability that he will not get an electric contract is $\frac{5}{9}$. If the probability of getting at least one contract is $\frac{4}{5}$, what is the probability that he will get both?

- (a) $\frac{31}{45}$ (b) $\frac{8}{45}$
(c) $\frac{14}{45}$ (d) None of these

28. A candidate is selected for interview for three posts. For the first post there are 5 candidates, for the second there are 8 and for third there are 7. What are the chances for his getting at least one post?

- (a) $\frac{1}{5}$ (b) $\frac{3}{5}$
(c) $\frac{2}{5}$ (d) $\frac{4}{5}$

29. The number of ways in which a committee of 3 ladies and 4 gentlemen can be appointed out of 8 ladies and 7 gentlemen, if Mrs. X refuses to serve in a committee of which Mr. Y is a member, is

- (a) 1,540 (b) 1,960
(c) 3,240 (d) None of these

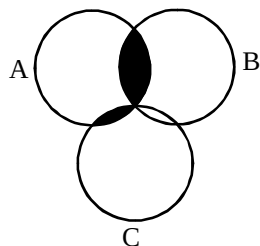
30. A bus starts from city X. The number of women in the bus is half of the number of men. In city Y, 10 men leave the bus and five women enter. Now the number of men and women is equal. In the beginning, how many passengers entered the bus?

- (a) 15 (b) 30
(c) 36 (d) 45

31. Balls are arranged in rows to form an equilateral triangle. The first row consists of one ball, the second row consists of two balls and so on. If 669 more balls are added, then all the balls can be arranged in the shape of a square and each of the sides contains 8 balls less than each side of the triangle had. The initial number of balls is

- (a) 1600 (b) 1500
(c) 1540 (d) 1690

32. The shaded region in the following Venn Diagram represents:



- (a) $A \cup (B \cup C)$ (b) $A \cup (B \cap C)$
(c) $A \cap (B \cup C)$ (d) None of these

DIRECTIONS (Qs. 33-36) : Read the following table carefully to answer these questions.

Details of Leading Openers' Performance in 20 One-day cricket matches.

Openers	Total Runs	Highest Runs	No. of matches with runs		
			100 or more	50-99	0's
A	994	141	5	3	1
B	751	130	1	8	2
C	414	52	-	2	2
D	653	94	-	4	1
E	772	85	-	7	-

33. What is the difference between the average runs of top two openers in terms of highest runs, if matches having 0's were ignored?

- (a) 11.1 (b) 13.7
(c) 4.7 (d) None of these

34. If matches having zero runs and the one with highest runs is ignored, what will be the average runs for opener C?

- (a) 20.7 (b) 21.79
(c) 21.29 (d) 21.17

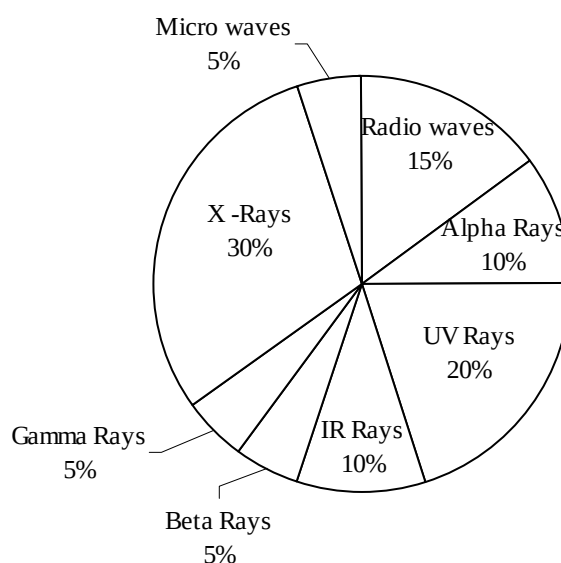
35. By how much, does the difference between the two highest total runs differ from the difference between the two lowest total runs?

- (a) More by 4 (b) More by 18
(c) Lower by 18 (d) None of these

36. Which of the given pairs of openers have ratio 5 : 2 in their highest runs?

- (a) A and B (b) B and C
(c) B and D (d) D and C

DIRECTIONS (Qs. 37-40): Study the pie-chart below to answer these questions. The chart gives the composition of solar radiation.



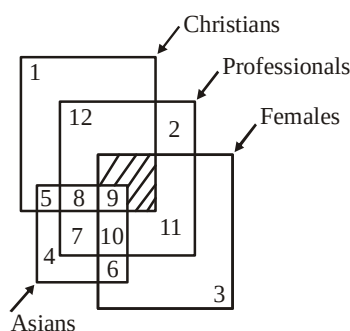
Total sun rays received in one minute = 3600 units

37. If the human body can withstand a maximum of 9720 units of IR rays when exposed to the sun continuously, then what is the maximum time in minutes that any person could stand in the sun without crossing the threshold limit of IR rays?
- (a) 23 (b) 19
(c) 27 (d) 29
38. The amount of Beta rays in 10 minutes of the sun rays is how many times the amount of IR rays in 3 minutes of the sun rays?
- (a) 1.44 (b) 1.33
(c) 1.66 (d) 1.55
39. How many minutes of exposure to the sun in a day would be enough to ensure that the body receives enough amount of Vitamin D, given that the body requires 40 units of Vitamin D, every day and that 30 units of Beta rays generate one unit of Vitamin D?
- (a) $5\frac{1}{3}$ (b) $5\frac{2}{3}$
(c) $6\frac{1}{3}$ (d) $6\frac{2}{3}$
40. The amount of Alpha rays received in two minutes is how much more/less than amount of Radio waves received in 4 minutes?
- (a) 1320 units more (b) 1200 units less
(c) 1440 units less (d) 1600 units more

SECTION II

ANALYTICAL & LOGICAL REASONING

DIRECTIONS (Qs. 41-44) : Answer these questions based on the diagram given below.

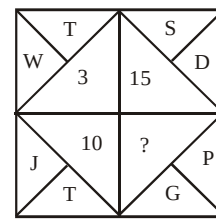


41. Asian Non-Christian females who are Professionals are represented by
- (a) 3 (b) 10
(c) 8 (d) 11
42. Asian females who are neither professional nor Christians are denoted by
- (a) 6 (b) 9
(c) 10 (d) 3

43. Non-Asian professional Christian male are represented by
- (a) 10 (b) 11
(c) 12 (d) 9
44. Christian females who are non-professional and Asian are represented by
- (a) 5 (b) 10
(c) 9 (d) None of these

DIRECTIONS (Qs. 45): Select the pair of words, which exhibits the same relationship between each other as the given capitalized pair of words.

45. INSIPID: PIQUANT ::
- (a) relish: spice (b) tasty: bland
(c) sweet: dessert (d) flat: spicy
46. In a certain code, TERMINAL is written as SDQLJOBM. How is CREDIBLE written in that code?
- (a) BQDCJCMF (b) BQDCHAKD
(c) DSFEJCMF (d) DSFEHAKD
47. Find out the missing letter/number in place of question mark in the figure below.



- (a) 11 (b) 5
(c) 9 (d) 13
- 48.
- | | | | | | |
|---|---|----|----|----|----|
| 1 | 2 | 3 | 2 | 10 | 12 |
| 2 | 5 | 12 | 10 | 16 | 13 |
| 1 | 2 | 1 | ? | 10 | 24 |
- (a) 5 (b) 11
(c) 13 (d) 8

DIRECTIONS (Qs. 49 to 51) : Study the information below to answer these questions.

- Seeta, Rajinder and Surinder are children of Mr. and Mrs. Aggarwal.
 - Renu, Raja and Sunil are children of Mr and Mrs. Malhotra.
 - Sunil and Seeta are a married couple and Ashok and Sanjay are their children.
 - Geeta and Rakesh are children of Mr. and Mrs. Gupta.
 - Geeta is married to Surinder and has three children named Rita, Sonu and Raju.
49. How is Rajinder related to Ashok?
- (a) Father-in-law (b) Brother-in-law
(c) Cousin (d) Maternal Uncle
50. What is Sanjay's surname?
- (a) Gupta (b) Malhotra
(c) Aggarwal (d) Surinder
51. Renu is Sanjay's _____.
- (a) Sister-in-law (b) Sister
(c) Cousin (d) Aunt

52. Mohan is the son of Arun's father's sister. Prakash is the son of Reva, who is the mother of Vikas and grandmother of Arun. Pranab is the father of Neela and the grandfather of Mohan. Reva is the wife of Pranab. How is the wife of Vikas related to Neela?

- (a) Sister (b) Sister-in-law
(c) Niece (d) None of these

DIRECTIONS (Qs. 53 - 56) : Read the information given below to answer the questions that follow.

- I. A cube has six sides, each of which has a different colour : black, blue, brown, green, red and white.
II. The red side is opposite the black.
III. The green side is between the red and the black.
IV. The blue side is adjacent to the white.
V. The brown side is adjacent to the blue.
VI. The red side is the bottom face.
53. The four colours adjacent to green are
(a) black, blue, brown, red
(b) black, blue, brown, white
(c) black, blue, red, white
(d) black, brown, red, white
54. Which of the following can be deduced from the statements I, II and VI ?
(a) Black is on the top (b) Blue is on the top
(c) Brown is on the top (d) Brown is opposite to black
55. Which of the following statements given above adds no information that is not already given by the other statements?
(a) II (b) III
(c) V (d) VI
56. If the red side is exchanged for the green side and the blue is swapped for black, then which of the following is false ?
(a) Red is opposite to black.
(b) White is adjacent to brown.
(c) Green is opposite to blue.
(d) White is adjacent to blue.

DIRECTIONS (Qs. 57-60) : Read the following information to answer these questions.

Ankit is decorating his room and trying to arrange six paintings on the east and west walls in his room. The paintings are each multicolour representations of one of the letters of the alphabets E, H, M, O, R, T. Ankit does not want the three letters on each wall to make any common English word. Also, the colours of the O and E do not look good next to each other, nor do the T and O go well together.

57. If Ankit puts E, H and M on the east wall, which of the following must be true?
(a) R and M cannot face each other.
(b) O cannot be in the centre of the west wall.
(c) E cannot be in the centre of the east wall.
(d) T and M cannot face each other.

58. If Ankit's mother is coming to visit and he decides to celebrate the visit by having his paintings spell "MOTHER", starting with the leftmost painting on the east wall and going around the room, which of the following will be false?

- (a) O is opposite to E
(b) H is next to E
(c) T is next to O
(d) T is opposite to R

59. Which of the following is not possible?

- (a) T and O to be opposite to each other
(b) T, H and E to be on the same wall
(c) H, M and R to be on the same wall
(d) M and O to be opposite to each other

60. If Ankit trades his M painting for another O painting just like the one he has now, which of the following must be false?

- (a) O's can be on opposite walls in the middle
(b) Either R or H will be next to an O
(c) Either R or H will be next to either T or E
(d) T will be opposite to either O or E.

DIRECTIONS (Qs. 61 - 64) : Study the following information carefully and answer the given questions.

P, Q, R, S, T, V, W and X are captains of eight different cricket teams, namely Australia, New Zealand, India, Pakistan, Sri Lanka, England, West Indies and South Africa, but not necessarily in the same order. All of them are seated around a circular table and are facing the centre.

P sits third to the left of the Sri Lankan captain. Only two people sit between T and W. Neither T nor W is an immediate neighbour of P. Neither T and W is the captain of Sri Lanka. The captain of South Africa sits second to the right of S. S is not an immediate neighbour of P. S is not the Sri Lankan captain and P is not the captain of South Africa. The Australian captain sits third to the left of V. The Australian and Sri Lankan captains are not immediate neighbours. Only one person sits between S and the Indian captain. Captains of Pakistan and New Zealand are immediate neighbours. S is not the captain of New Zealand's team. Only one person sits between Q and the captain of England. The captain of England is an immediate neighbour of X. W and Q are not immediate neighbours.

61. How many people sit between T and the captain of England when counted in clockwise direction from T?

- (a) None (b) One
(c) Two (d) Four

62. Who is the captain of the Australian team?

- (a) P (b) V
(c) W (d) T

63. Which of the following would come in place of question mark based upon the given seating arrangement?

VS XR TV RP ?

- (a) SW (b) WX
(c) QW (d) QX

64. Which of the following is **true** with respect to the given arrangement?
- R is the captain of South Africa
 - W is an immediate neighbour of V.
 - The captain of Australia and England are immediate neighbours.
 - Four people sit between W and Q.
65. Four girls (G_1, G_2, G_3, G_4) and three boys (B_1, B_2, B_3) are to sit for a dinner such that no two boys should sit together nor two girls. If they are successively sitting, what is the position of B_2 and G_3 ?
- 5th and 6th
 - 4th and 5th
 - 3rd and 4th
 - 2nd and 3rd
66. Five students participated in the scholarship examination "Sudha scored higher than Puja. Kavita scored lower than Suma but higher than Sudha. Mamta scored between Puja and Sudha." Who scored lowest in the examination?
- Puja
 - Kavita
 - Mamta
 - Sudha
67. Persons X, Y, Z and Q live in red, green, yellow or blue coloured houses placed in a sequence on a street. Z lives in a yellow house. The green house is adjacent to the blue house. X does not live adjacent to Z. The yellow house is in between the green and red houses. The colour of the house X lives in is
- green
 - blue
 - red
 - cannot be determined

DIRECTIONS (Qs.68-70): The following question has a set of four sequentially ordered statements. Each statement can be classified as one of the following:

- Facts, which deal with pieces of information that one has heard, seen or read, and which are open to discovery or verification (the answer option indicates such a statement with an 'F').
- Inferences, which are conclusions drawn about the unknown, on the basis of the known (the answer option indicates such a statement with an 'I').
- Judgments, which are opinions that imply approval or disapproval of persons, objects, situations and occurrences in the past, the present or the future (the answer option indicates such a statement with a 'J')

68. Select the answer option that best describes the set of four statements.
- So much of our day-to-day focus seems to be on getting things done, trudging our way through the tasks of living - it can feel like a treadmill that gets you nowhere; where is the childlike joy?

- We are not doing the things that make us happy; that which brings us joy; the things that we cannot wait to do because we enjoy them so much.
 - This is the stuff that joyful living is made of - identifying your calling and committing yourself wholeheartedly to it.
 - When this happens, each moment becomes a celebration of you; there is a rush of energy that comes with feeling completely immersed in doing what you love most.
- IIIJ
 - IFIJ
 - JFJJ
 - JJJJ
69. Select the answer option that best describes the set of four statements.
- Given the poor quality of service in the public sector, the HIV/AIDS affected should be switching to private initiatives that supply anti-retroviral drugs (ARVs) at a low cost.
 - The government has been supplying free drugs since 2004, and 35000 have benefited up to now æ though the size of the affected population is 150 times this number.
 - The recent initiatives of networks and companies like AIDS Care Network, Emcure, Reliance-Cipla-CII, would lead to availability of much-needed drugs to a larger number of affected people.
 - But how ironic it is that we should face a perennial shortage of drugs when India is one of the world's largest suppliers of generic drugs to the developing world.
- JFIJ
 - JIIJ
 - IFIJ
 - IFFJ
70. Select the answer option that best describes the set of four statements.
- According to all statistical indications, the Sarva Shiksha Abhiyan has managed to keep pace with its ambitious goals.
 - The Mid-day Meal Scheme has been a significant incentive for the poor to send their little ones to school, thus establishing the vital link between healthy bodies and healthy minds.
 - Only about 13 million children in the age group of 6 to 14 years are out of school.
 - The goal of universalisation of elementary education has to be a pre-requisite for the evolution and development of our country.
- IIFJ
 - JIIJ
 - IJFJ
 - IJFI

SECTION III
GENERAL ENGLISH

DIRECTIONS (Qs. 71-75): Read the following passage and answer the questions that follow.

The bird egg is a self-contained life-support system for the developing bird embryo. All the nutrients, minerals, energy sources and water utilized by the embryo during its incubation are already present in the freshly laid egg, so that the egg requires only warming by the parents and periodic turning to prevent the adhesion of the embryo to the shell membranes. Still, the egg lacks one crucial requirement: oxygen, which drives the metabolic machinery of the embryonic cells so that they can execute the complex maneuvers of development. How does the egg breathe, taking up oxygen from the surrounding atmosphere and discharging carbon dioxide, the waste product of respiration?

Gas exchange is usually associated with the periodic inhalation of a fluid medium (air or water), which carries oxygen to the capillaries of the lungs or the gills and removes carbon dioxide from the respiratory organ with each exhalation. The lungs or the gills are driven by muscles whose rate of pumping is determined by metabolic demand and controlled by the nervous system. Yet the eggs of birds and other organisms (such as insects, spiders, amphibians and reptiles) show no respiratory movements, and there are no air currents within the egg that could transport oxygen to the capillaries of the growing embryo. Instead the egg "breathes" by diffusion through thousands of microscopic pores in the shell.

Gas moves through the pores by the passive process of diffusion: the tendency for a high concentration of a molecule to run downhill to an area of lower concentration. Diffusion takes place because of the kinetic energy of gas molecules and does not require the direct expenditure of metabolic energy by the embryo: the lower concentration of oxygen inside the egg brings new oxygen in through the pores from the outside, where the concentration is higher. Conversely, the concentration of carbon dioxide inside the egg causes those molecules to diffuse toward the outside, where there are essentially none. These diffusion processes are governed by the available pore area of the shell, the length of the pores and the concentration differences of the gases diffusing across the shell.

The water content of the air within the egg is greater than that of the air outside it, and so the pores will also allow water molecules (which are smaller than oxygen molecules) to diffuse out. Animals have evolved many specialized adaptations for conserving water, but bird eggs seem designed to lose it at a controlled rate. Most of the energy needed for embryonic development is taken from the fat stores of the yolk, and for every gram of fat burned an almost equal mass of metabolic water is generated. Therefore, the relative water content of the egg will increase during incubation unless water is lost. If the relative water content at hatching is to equal that of the freshly laid egg, about 15 percent of the initial mass of the egg must be lost as water. As breeders of domestic fowl well know, this amount of water loss is essential for successful hatching.

71. The passage is primarily concerned with
- (a) explaining difficulties involved in cultivating domestic fowl.
 - (b) explaining the origin of passive diffusion as a method of respiration.
 - (c) explaining the processes of gas and water diffusion in eggs.
 - (d) distinguishing between passive diffusion and active respiration.
72. A necessary ingredient in the eggshell's suitability for gas ex-change is its
- (a) opacity
 - (b) fragility
 - (c) permeability
 - (d) adhesiveness
73. The passage contains information that would answer which of the following questions about fowl-breeding?
- I. What function does turning the fertilized egg serve in the hatching process?
 - II. Why must the egg shed water during the hatching process?
 - III. What occurs when the amount of water loss during hatching exceeds 15 percent of the egg's initial mass?
- (a) II only
 - (b) I only
 - (c) I and II only
 - (d) II and III only
74. The passage would be most likely to appear in
- (a) a pamphlet designed to introduce novice breeders of domestic fowl to the advantages of current techniques.
 - (b) an agricultural research report focused on the history of fowl-breeding practices in the United States.
 - (c) a Congressional report urging the appropriation of funds for research into needed improvements in egg-hatching.
 - (d) a scientific journal article highlighting biochemical and physical principles underlying common phenomena.
75. According to the passage, which of the following statements is true of the extent of water loss by the egg during the hatching process?
- (a) It exceeds the initial mass of the egg by 15 percent.
 - (b) It is regulated by a specialized adaptation for conserving water.
 - (c) It should compensate for the egg's entire water gain during incubation.
 - (d) It should amount to 15 percent of the egg's water gain during incubation.

DIRECTIONS (Qs. 76- 82) : A word in capital letters is followed by four words. Choose the word that is most nearly opposite in meaning to the word given in capital letters.

76. ZOOM
- (a) Soothe
 - (b) Plummet
 - (c) Subjugate
 - (d) Refute
77. PREDILECTION
- (a) Antipathy
 - (b) Ignorance
 - (c) Dissonance
 - (d) Disharmony

78. DOCILE
(a) Unmanageable (b) Dutiful
(c) Submissive (d) Painful
79. EQUIVOCAL
(a) Mistaken (b) Quaint
(c) Clear (d) Universal
80. PROSAIC
(a) Pensive (b) Imaginative
(c) Rhetorical (d) Pacified
81. LEVITY
(a) Praise (b) Blame
(c) Solemnity (d) Frivolity
82. OBLOQUY
(a) Praise (b) Cruel
(c) Slander (d) Dialogue

DIRECTIONS(Qs. 83 - 88): In the following questions, each word in capital letters is followed by four words or phrases. Choose the one which is similar in meaning to the word given in the, capital letters.

83. ELAN
(a) Flair (b) Spiritual
(c) Inspiration (d) Boredom
84. GAUCHE
(a) Vain (b) Rich
(c) Polished (d) Tactless
85. BROWBEAT
(a) Ambitious (b) Challenging
(c) Intimidate (d) Tarnish
86. IMPOSTURE
(a) Claim (b) Status
(c) Destruction (d) Deception
87. PROBOSCIS
(a) Search (b) Probe
(c) Snout (d) Prove
88. PARLEY
(a) Discuss (b) Deliver
(c) Sweeten (d) Race

DIRECTIONS. (Q. 89 - 92) : Choose the correct option for the given blanks.

89. Pipes are not a safer to cigarettes because, though pipe smokers do not inhale, they are still higher rates of lung and mouth cancers than non-smokers.
(a) alternative - subject to
(b) answer - responsible for
(c) preference - free from
(d) rejoinder- involved in
90. Because of its tendency to most Indian art is..... Japanese art, where symbols have been minimized and meaning has been conveyed by using the method of the merest suggestion.
(a) overdraw - similar to
(b) understate - reminiscent of
(c) imitate - superior to
(d) sentimentalism - supportive of

91. In the absence of native predators, to stop the spread of their population, the imported goats.....to such an inordinate degree that they over-grazed the countryside and the native vegetation.
(a) thrived- threatened
(b) suffered - abandoned
(c) propagated - cultivated
(d) dwindled-eliminated
92. The analysis of anything but the coach's report was but those of us who have learned to discount such dismal are optimistic.
(a) malicious - benefits
(b) sanguinary - traps
(c) pessimistic - confusion
(d) pleasant - prognostications

DIRECTIONS (Qs. 93-96): Choose the order of the sentences marked A, B, C, D and E to form a logical paragraph.

93. A. 'It's a tricky business', says Allan H. Meltzer, an economist at Carnegie mellon University and a former economic adviser to President Reagan.
B. Some policy- makers are focused on staving off the opposite problem- deflation, or falling prices, as demand weakens to the point that goods pile up without buyers, sending prices down and reducing the incentive for businesses to invest.
C. That could shrink demand further and perhaps even deliver the sort of downward spiral that pinned Japan in the weeds of stagnant growth during the 1990s.
D. "There's no math model that tells us when to do it or how."
E. But that, as most economists see it, is a worry for another day.
(a) ABCED (b) ACDEB
(c) BCDEA (d) ADEBC
94. A. Early in August, as his jeep wound its way through the piles of burning tyres that angry protestors had used to barricade the road from Srinagar airport into the city, former Chief Minister Farooq Abdullah, turned to a journalist sitting next to him with a smile on his face.
B. "So," he said, "are you here to write another article about how I don't know how to run a government?"
C. Having emerged as the single largest party in the J&K Assembly, with 28 seats in a house of 87, the National Conference has the undeniable right to form and lead the government.
D. To do so, however, it will need the support of the Congress, which has picked up 17 seats.
E. More likely than not, Dr. Abdullah's leadership - or that of Jammu and Kashmir National Conference President, his son Omar Abdullah- will soon be put to the test.
(a) ABECD (b) ABDEC
(c) ADEBC (d) ABCED

95. A. This is the time of the year when people go out and shop for their winter wear.
 B. But it seems economic recession has hit the fashion industry as well.
 C. We haven't seen exclusive fashion shows from big designers this winter.
 D. Designer Sandeep Khosla agrees, "Every industry has been hit and fashion is no different."
 E. Its effect could be seen on both couture and readymade segments.
 (a) ADBCE
 (b) ABCDE
 (c) AEDBC
 (d) BCDEA
96. A. And, in turn, corporate houses seek employees who will benefit their company and help the company grow.
 B. It is an exchange of value.
 C. Both sides are seeking to benefit.
 D. Since we are on the eager prospective employee side, we need to please and satisfy our potential employers.
 E. One seeks employment for personal gain, profit and success.
 (a) ABCED
 (b) BCDEA
 (c) EABCD
 (d) DEABC

DIRECTIONS (Qs. 97-100): In each of the following questions a set of sentences marked A, B, C and D is given. One or more of the sentence(s) is/are incorrect considering standard English usage. Identify the incorrect sentence(s).

97. A. The rightfully believing that his geniuses in poetry laid in personal utterances, Irish poet William Butler Yeats recognized that these personal utterances alone could not organize a body of a lyric poetry and drama into the organic structure he hoped to build.
 B. For one thing personal utterances is beset by danger of sentimentality, which leads poetry away from that reality that poetry would deal with various kinds of self-pity and self-deceptions.
 C. He thus has to technique by which the person could some how be objectified, be given the appearance of impersonal "truth" and yet retained motive force of privately felt belief.
 D. The partial solution was the theory the mask.
 (a) B, C and D (b) A, C and D
 (c) A, B, C and D (d) A and B
98. A. In the ling history of the world, only a few generations have been granted the role of defending freedom in its hour of maximum danger.

- B. I do not believe that any of us would exchange places with any other people or any other generation.
 C. The energy, the faith, the devotion which we bring to this endeavor will light our country and all who serve it.
 D. The glow from that fire can truly light the world.
 (a) B only
 (b) A only
 (c) C only
 (d) No error
99. A. As the growing economy makes increasing demands on infrastructure inputs, these problems could worsen in the coming year.
 B. Therefore, addressing infrastructure gaps needs to doing our topmost priority next year.
 C. The second risk lies in the global macroeconomic imbalances, reflected in the twin deficits of the US and rising surpluses of Asia.
 D. The longer these imbalances have persisted, the greater has become the risk of disruptive correction.
 (a) A only (b) B only
 (c) D only (d) C only
100. A. A day after a controversy broke out over medicines manufactured by the guru, the Health Ministry said that they would put the medicines to the test.
 B. The government will not scrap the Delhi-Mumbai airport modernization plan.
 C. In the district town, the children told the committee members that they were not consuming the meals served by the schools.
 D. The committee would keep watch on the quality of grain.
 (a) A only (b) B only
 (c) D only (d) C only

DIRECTIONS (Qs. 101- 105) : To answer these questions, choose a word or phrase which is underlined and would not be appropriate in standard English.

101. I prefer The Hindu. (a)/but my eldest (b) / son reads (c) Times of India (d).
 102. He was wearing shabby. (a)/ faded trouser (b)/which he explained, were called jeans (c)/ and cost (d)/ a fortune.
 103. He has become (a)/ so weak that even (b)/ a two furlongs (c)/ walk makes him breathless (d).
 104. A picture of one of (a)/ the progenitors (b)/ of the founder (c)/ of the company hanged (c)/ on the wall.
 105. His secretary told me (a)/ that she was unable to tell us when (b)/ her boss would return back (c)/ from (d)/ his work

106. When one reads the Hindi literature of the twentieth century, you find a striking contrast between the writings of Munshi Premchand and later day writers of popular Hindi fiction.

- (a) When one reads the Hindi literature of the twentieth century, you find a striking contrast between the writings of Munshi Premchand and later day writers of popular Hindi fiction.
- (b) When one reads the Hindi literature of the twentieth century, he finds a striking contrast between the writings of Munshi Premchand and later day writers of popular Hindi fiction.
- (c) When you read the Hindi literature of the twentieth century, one finds a striking contrast between the writings of Munshi Premchand and later day writers of popular Hindi fiction.
- (d) If one reads the Hindi literature of the twentieth century, you find a striking contrast between the writings of Munshi Premchand and later day writers of popular Hindi fiction.

107. No officer had ought to be put into a situation where he has to choose between his love for his family and the responsibilities accompanying his duty.

- (a) No officer had ought to be put into a situation where he has to choose between his love for his family and the responsibilities accompanying his duty.
- (b) No officer should be put into a situation where he has to choose between his love for his family and the responsibilities accompanying his duty.
- (c) No officer had ought to be put into a situation in which he has to choose between his love for his family and the responsibilities accompanying his duty.
- (d) No officer ought to be put into a situation in which he has to choose between his love for his family and the responsibilities accompanying his duty.

108. Entertainment being recognized as an important factor in improving mental and physical health and thereby reducing human misery and poverty.

- (a) Entertainment being recognized as an important factor in improving mental and physical health and thereby reducing human misery and poverty.
- (b) Recognition of it being an important factor in improving mental and physical health entertainment reduces human misery and poverty.
- (c) Recognizing entertainment as an important factor in improving mental and physical health and thereby reducing human misery and poverty.
- (d) Entertainment is recognized as an important factor in improving mental and physical health and thereby reducing human misery and poverty.

- ## SECTION IV
- ### GENERAL AWARENESS

111. Recently, the Cabinet Committee on Economic Affairs hiked the cap on foreign investment in the broadcast sector to:
(a) 74 per cent (b) 49 Per cent
(c) 26 Per cent (d) 60 Per cent
112. India's first newspaper was:
(a) Amrita Bazar Patrika (b) Vande Mataram
(c) Bengal Gazette (d) Rast Goftar
113. The biggest producer of diamond in the world is:
(a) Russia (b) South Africa
(c) Canada (d) Botswana
114. When coat/blanket is beaten by the stick, the dust particles are removed. This is an example of:
(a) Newton's first law of motion
(b) Newton's second law of motion
(c) Newton's third law of motion
(d) Newton's first law of gravitation
115. Shome Committee recently submitted its report to the Union Finance Minister. The report is related to:
(a) Coal mine allocation (b) GAAR
(c) Banking reform (d) Privatisation of Railways

116. World's oldest peak, Guru Shikhar, is the highest peak of which of the following mountain ranges?
(a) Purvanchal (b) Aravali Range
(c) Satpura (d) Shiwaliks
117. The winners of the Mixed doubles title in the Wimbledon Tennis Championship 2012 are:
(a) Frederik Nielsen and Elena Vesnina
(b) Jonathan Marray and Lisa Raymond
(c) Leander Paes and Elena Vesnina
(d) Mike Bryan and Lisa Raymond
118. Vembanad Lake is the longest lake in India. It is located in:
(a) Kerala (b) Tamil Nadu
(c) Odisha (d) Maharashtra
119. In the Men's 7-a-side Football event at the London Paralympics 2012, which of the following countries won the gold medal?
(a) Ukraine (b) Brazil
(c) Russia (d) Germany
120. Gaddis tribe is found in:
(a) Himachal Pradesh (b) Sikkim
(c) Kerala (d) Arunachal Pradesh
121. Recently, Kaushik Basu has been appointed as the:
(a) India's permanent representative in UN
(b) Chief economist and senior vice president of IMF
(c) Secretary-General of the Commonwealth
(d) Chief economist and senior vice president of the World Bank
122. The Women's Under-20 World Cup 2012 final was recently held in :
(a) Tokyo (b) Berlin
(c) Moscow (d) Sydney
123. Who was the Chairman of the Constituent Assembly's Minorities Committee?
(a) B.R. Ambedkar
(b) Alladi Krishnaswamy Iyer
(c) Harendra Coomar Mookerjee
(d) A.V. Thakkar
124. Which of the following strait connects the Gulf of Aqaba with the Red Sea?
(a) Strait of Baltiysk (b) Strait of Messina
(c) Straits of Tiran (d) Strait of Hormuz
125. Who among the following Hollywood directors is the first person to make a solo dive to the Pacific Ocean trench?
(a) James Cameron (b) Robert Wise
(c) Steven Soderbergh (d) William Wyler
126. K.N. Tilak Kumar is the current president of:
(a) AIIMS
(b) NCERT
(c) Indian Newspaper Society
(d) National Commission for Scheduled Castes
127. National Commission for Protection of Child Rights (NCPCR) is the statutory body that monitors the implementation of the Act across the country. Who among the following is the current chairman of NCPCR?
(a) Shantha Sinha (b) Yashwant Jain
(c) Amod Kanth (d) Nina Nayak
128. The recommendations of the Inter-Ministerial Group (IMG) headed by Zohra Chatterjee are regarding:
(a) reforms in Stock Markets
(b) reform in banking sectors
(c) tax reform
(d) de-allocation of coal mines
129. Which of the following countries in the world is the biggest consumer of gold?
(a) China (b) United States
(c) India (d) Russia
130. Who is the current Chairman of Securities and Exchange Board of India (SEBI)?
(a) Prashant Sareen (b) S.S.N.Moorthy
(c) U K Sinha (d) P K Malhotra
131. Senkaku islands is disputed between:
(a) England and France (b) China and Vietnam
(c) China and Japan (d) Egypt and Israel
132. Which of these is the largest producer of nuclear energy in the world?
(a) Japan (b) USA
(c) France (d) Russia
133. 'Struggle for Existence' is the autobiography of which of the following Indian woman leaders?
(a) Mayawati (b) J.Jayalalitha
(c) Sushma Swaraj (d) Mamta Banerjee
134. Recently China successfully tested the new 14,000 km-range Intercontinental Ballistic Missile (ICBM). What is the name of the missile?
(a) Dongfeng-41 (b) Varyag
(c) Brahmos (d) Changez -2
135. Which of the following is a book written by Salman Rushdie?
(a) Swimming Home (b) Joseph Anton
(c) Bring Up the Bodies (d) The Lighthouse
136. Which of the following states has the highest number of joint families?
(a) Uttar Pradesh (b) Rajasthan
(c) Bihar (d) Haryana
137. Recently, FIFA has labelled a 10-month ban on Juventus coach Antonio Conte for not reporting match-fixing. Antonio belongs to:
(a) Canada (b) Germany
(c) Australia (d) Italy

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138. Current President of International Cricket Council is:
(a) N. Srinivasan (b) Alan Isaac
(c) Suresh Kalmadi (d) Nasim Ashraf
139. Which of the following organisation(s) has/have been chosen for the Skoll Award, 2012 for Social Entrepreneurship by the Skoll Foundation in Oxford, England?
(a) The National Association of Street Vendors of India (NASVI) and Nidan
(b) Sulabh International Social Service Organisation
(c) Sambhav and Rashtriya Swayamsevak Sangh
(d) Zed Tech Social Organisation
140. To promote institutional deliveries and to create awareness and responsibility towards health in pregnant women, which of the following State has introduced 'Surakshit Maa' and 'Swasth Maa' awards?
(a) Bihar (b) Haryana
(c) Madhya Pradesh (d) New Delhi
141. Which of the following airport authorities won the prestigious international 'Jane's ATC Award' for the year 2012?
(a) Louisville Regional Airport Authority (LRAA)
(b) Thunder Bay Airport Authority (TBAA)
(c) Airports Authority of India (AAI)
(d) Halifax International Airport Authority (HIAA)
142. Which of the following female actors has been awarded the 'best actress award' in 59th National Film Awards?
(a) Leishangthem Tonthoingambi Devi
(b) Vidya Balan
(c) Ananya Chatterjee
(d) Arundhati Nag
143. Santosh Trophy is associated with which of the following games?
(a) Cricket (b) Football
(c) Badminton (d) Golf
144. 'Do or Die' is associated with which of the following movement?
(a) Dandi march
(b) Non-Cooperation movement
(c) Khilafat movement
(d) Quit India movement
145. Which of the following Retail Groups in India is the 50 : 50 partner of world's largest retailer Wal-Mart Stores, Inc.?
(a) Bharti Group (b) Mahindra Group
(c) Sahara Group (d) Vodafone Group
146. One recipient of the Swedish Right Livelihood Award 2012, belongs to Afghanistan. Name that recipient:
(a) Sima Samar (b) Hayrettin Karaca
(c) Gene Sharp (d) Campaign Against Arms Trade
147. 'Dans le harem de Kadhafi' is a book written by:
(a) Lewis Hamilton (b) Annick Cojean
(c) Barak Obama (d) Vladimir Putin
148. 12 Five year plan will be for the period of:
(a) 2010-2015 (b) 2015-2020
(c) 2011-2016 (d) 2012-2017
149. According to the latest report of Forest Survey of India, which of the following states has the largest forest cover area in India?
(a) Arunachal Pradesh
(b) Madhya Pradesh
(c) Maharashtra
(d) Andhra Pradesh
150. Aamir Khan is the national goodwill ambassador of which of the following organisations?
(a) UNESCO (b) UNICEF
(c) ILO (d) WIPO

ANSWERS WITH EXPLANATIONS

1. (a) Let total number of seats in the stadium be p ;
number of seats in the lower deck be x and number of seats in upper deck be y .
 $\therefore p = x + y, x = p/4, y = 3p/4$
Now in the lower deck, $4x/5$ seats were sold and $x/5$ seats were unsold.
No. of total seats sold in the stadium = $2p/3$.
No. of unsold seats in the lower deck = $x/5 = p/20$
No. of unsold seats in the stadium = $p/3$
 $\therefore$ Required fraction = $\frac{p/20}{p/3} = \frac{3}{20}$
2. (d) $\therefore$ Total tax payable on ₹ 170000.
Total income can be divide as,
₹ 170,000 = 50,000 + 10,000 + 90,000 + 20,000
= 50,000 $\times$ 0% + 10,000 $\times$ 10% + 90,000 $\times$ 20%
+ 20,000 $\times$ 30%
= 1000 + 18000 + 6000 = ₹ 25000
3. (b) Profit, $P = \left(12 - \frac{x}{100}\right)(725 + x)$
For maximum $P, \frac{dP}{dx} = 0 \Rightarrow x = 237.5$
Taking $x = 237, 725 + 237 = 962$
and $x = 238, 725 + 238 = 963$
However $x = 237.5 \Rightarrow$ Total $P = 962.5$
4. (d) Difference in rupees by increasing the price by rupees 1 is ₹ 350. That means that the quantity of milk is 350 litre. Now, 10 equal containers will become 35 litre per container.
5. (a) Women's shirt comprise 60% of the output.
 $\therefore$ Men's shirts comprise $(100 - 60) = 40\%$ of the output.
 $\therefore$ Average profit from men's shirt = 8% of 40
= 3.2 out of 40
Overall average profit = 6 out of 100
 $\therefore$ Average profit from women's shirts = 2.8 out of 60
i.e., 0.0466 out of each shirt.
6. (d) All the given options are wrong.
Let the passengers in A.C. Sleeper Class, 1st Class and Sleeper Class be $x, 2x$ and $3x$ respectively and the fares in these classes be $5y, 4y$ and $2y$ respectively.
Hence the incomes from these classes are $5xy, 8xy, 6xy$ respectively.
 $\therefore$ Required income = $\frac{5}{19} \times 54000 = ₹ 14210$
7. (a) Let the quantity bought be $12x, 15x$ and $20x$ kg respectively.
Total cost price = $100 \times 12x + 80 \times 15x + 60 \times 20x$
= $1200x + 1200x + 1200x = 3600x$
Selling price of first two quantities at profit of 20%
= $\frac{120}{100} \times 2400x = 2880x$
Total selling price = $3600x$ (No profit no loss)
 $\therefore$ Selling price of third quantity = $3600x - 2880x = 720x$
 $\therefore$ Loss percentage = $\frac{1200x - 720x}{1200x} \times 100 = 40\%$
8. (c) Rahul started a business with a capital of ₹ 8000.
Let Sanjay invest ₹ x
Since, each of them gets equal amount as profit
 $\therefore$ Profit divided in the ratio 1 : 1
Since, Sanjay joined Rahul after 6 months.
 $\therefore$ We have
 $8000 \times 12 : x \times (12 - 6) = 1 : 1$
 $\Rightarrow \frac{8000 \times 12}{6x} = \frac{1}{1}$
 $\Rightarrow 8000 \times 12 = 6x \Rightarrow 16,000 = x$
Hence, Sanjay invest ₹ 16,000 in the business.
9. (a) Money paid to buy watch = ₹ 1950.
Money paid as interest of 10% on ₹ 1950 = ₹ 195
 $\therefore$ Total money paid = ₹ 2145
Since S.P. = ₹ 2200, therefore the man gained ₹ 55.
10. (b) Price of the article after first discount, $65 - \left(65 \times \frac{10}{100}\right)$
= ₹ 58.5
Therefore, the second discount
= $\frac{58.5 - 56.16}{58.5} \times 100 = 4\%$
11. (c) Dividened for the preferred share
= $50000 \times 10 \times \frac{20}{100} = ₹ 1,00,000$
Rest of the dividened = $180000 - 100000 - 30000$
= ₹ 50000
% of dividened for general shares
= $\frac{50000 \times 100}{20000 \times 10} = 25\%$

12. (a) Let man buys apples at ₹ x per dozen.

$$\therefore \text{Cost price} = \frac{x}{12}$$

$$\text{and selling price} = \frac{8x}{100}$$

Here, S.P < C.P., therefore

There is loss

which is equal to CP – SP

$$= \frac{x}{12} - \frac{8x}{100} = \frac{25x - 24x}{300} = \frac{x}{300}$$

$\therefore$ Loss per cent

$$= \frac{\text{Loss}}{\text{C.P}} \times 100 = \frac{x}{300} \times 100 \times \frac{12}{x} = 4\%$$

13. (b) Let x be the selling price of 1 notebook.

$\therefore$ Selling price of 2 note book = 2x = profit

As, we know, profit = selling price – cost price

$\therefore$ Cost price of 12 note book = 12x – 2x = 10x

$$\therefore \text{Profit (percentage)} = \frac{2x}{10x} \times 100 = 20\%$$

14. (d) Let x be no. of units.

$\therefore$ Profit per unit x = (60 – 40) x = 20x.

Now, additional cost = 3000

$\therefore$ To make a profit of at least ₹ 1000

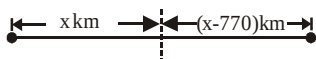
we have

$$20x - 3000 = 1000 \Rightarrow 20x = 4000$$

$$\Rightarrow x = 200.$$

15. (b) Let the aeroplane covers x km at a speed of 440 km/h and (x – 770) km at a speed of 660 km/h.

Hence, it covers a total distance of (2x – 770) km at a speed of 500 km/h.



$$\text{Average speed} = \frac{\text{Total distance}}{\text{Total time}}$$

$$\Rightarrow 500 = \frac{2x - 770}{\frac{x}{440} + \frac{x - 770}{660}}$$

$$\text{or } \frac{2x - 770}{500} = \frac{x}{440} + \frac{x - 770}{660}$$

$$\text{or } x = 1760$$

Therefore, the total distance covered = 2x – 770

$$= 2 \times 1760 - 770 = 2750 \text{ km}$$

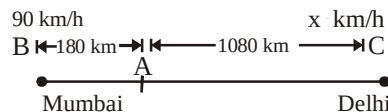
16. (c) Let the speed of train C be x km/h.

At 9 p.m. the train A will have covered a distance of 180 km.

For trains A and B relative speed = (90 – 60) = 30 km/h

Distance between them = 180 km

$$\text{Time after which they meet} = \frac{180}{30} = 6 \text{ hrs}$$



For trains A and C relative speeds = (60 + x) km/h

Distance between them = 1080 km.

$$\text{Time after which they meet} = \frac{1080}{(60 + x)} \text{ hrs}$$

As the time of meeting of all the three trains is the

$$\text{same, we have } \frac{1080}{(60 + x)} = 6$$

$$\text{or } x = 120 \text{ km/h}$$

17. (a) 50 men complete 0.4 work in 25 days.

Applying the work rule, $m_1 \times d_1 \times w_2 = m_2 \times d_2 \times w_1$

we have, $50 \times 25 \times 0.6 = m_2 \times 25 \times 0.4$

$$\text{or } m_2 = \frac{50 \times 25 \times 0.6}{25 \times 0.4} = 75 \text{ men}$$

Number of additional men required = (75 – 50) = 25

18. (c) The statements in the question can be reformulated as follows:

If A covers 400 m, B covers 395 m.

If B covers 400 m, C covers 396 m.

If D covers 400 m, C covers 384 m.

Therefore, if B covers 395 m, then C will cover,

$$\frac{396}{400} \times 395 = 391.05 \text{ m}$$

Again, If C covers 391.05 m, then D will cover

$$\frac{400}{384} \times 391.05 = 407.34 \text{ m.}$$

Thus, if A and D run over 400 m, then D wins by 7.3 m.

19. (d) Capacity of water throwing pump

$$= \frac{12}{60} \times 5.5 = 1.1 \text{ tonnes per 5.5 minutes}$$

Capacity of the leak to admit water = 2.25 tonnes per 5.5 minutes

$$\text{In 5.5 minutes, net water accumulated by the leak} \\ = (2.25 - 1.1) = 1.15 \text{ tonnes}$$

$$\text{Thus, to admit 92 tonnes of water, it will take } \frac{5.5}{1.15} \times 92$$

$$= 440 \text{ min} = \frac{440}{60} \text{ hrs}$$

Speed required for the ship to sail through safely

$$= \frac{77 \times 60}{440} = 10.5 \text{ km/h}$$

20. (b) Distance between the 1st and 21st posts

$$= (21 - 1) \times 50 = 1000 \text{ m}$$

Therefore, the speed of train = 1 km/min = 60 km/h

21. (c) Let the man buys x apples, y mangoes and z bananas at the respective prices of ₹ A , ₹ M , ₹ B , for each unit respectively.

As it is given that number of mangoes bought is same as the number as of bananas, hence quantity assumed is same as y .

Let the amount spent on apples be ₹ P .

Therefore, the amount spent on mangoes and bananas together is $1.5 P$.

$$\text{Now, } P + 1.5 P = 140 \text{ or } 2.5 P = 140 \text{ or } P = 56$$

Amount spent on apples is Rs. 56 and the amount spent on mangoes and bananas together is ₹ 84

$$\text{Again, } xA = 56 \quad \dots (i) \quad \text{and} \quad yB + yM = 84$$

$$\text{or } y(B + M) = 84 \quad \dots (ii)$$

If mangoes cost the same as apples, no banana can be bought. i.e. $(x + y)A = 140$

$$\text{or } xA + yA = 140$$

$$\text{From (i), } yA = 140 - 56 = 84 \quad \dots (iii)$$

From (ii) and (iii), we have

$$\text{or } yB + yM + yA = 84 + 84 = 168$$

$$y(A + B + M) = 168$$

$$\begin{aligned} \text{Additional amount required to be spent} \\ = (168 - 140) = ₹ 28 \end{aligned}$$

22. (b) Area of the semi-circle = $\frac{\pi}{2} = 1.571 \text{ m}^2$

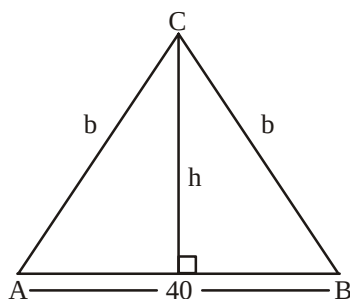
$$\text{Area of } \triangle ABE = \frac{1}{2} \times AB \times BE = \frac{1}{2} \times 3 \times 2 = 3 \text{ m}^2$$

$$\text{Area of rectangle BCDE} = 10 \times 2 = 20 \text{ m}^2$$

$$\text{Total covered area} = 1.571 + 3 + 20 = 24.571 \text{ m}^2$$

$$\text{Prize money won} = 24.571 \times 100 \approx ₹ 2457$$

23. (a) Let ABC be the lawn in the form of isosceles triangle.



Let base = $AB = 40 \text{ m}$

Let h be the height.

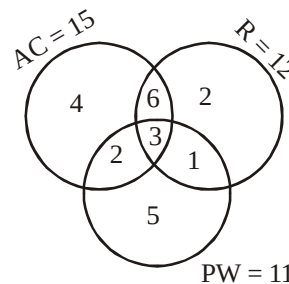
$$\therefore \text{Area} = \frac{1}{2} \times 40 \times h = 20h$$

According to the question,

$$\text{Height} = h = \frac{1200}{4 \times 20} = 15 \text{ m.}$$

$$\therefore b = \sqrt{(15)^2 + (20)^2} = \sqrt{625} = 25 \text{ m.}$$

24. (d) Total number of cars = 25



Total of cars in figures circles = 23

$\therefore$ 2 cars had none of the options.

25. (c) Let the quantity carried by large, medium and small ships be L , M and S respectively.

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

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

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

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

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

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

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

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

$$= 21S + 21S + 21S = 63S$$

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

26. (b) Let the present age of father = x year and Son's present age = y years.

$$5 \text{ years ago, father's age} = x - 5 \text{ and}$$

$$\text{Son's age} = y - 5$$

According to the question,

$$x - 5 = 5(y - 5) \quad \dots (1)$$

$$\text{and } x = 3y \quad \dots (2)$$

$\therefore$ From eqn (1) and (2), we have

$$y = 10 \quad \text{and} \quad x = 30 \text{ years.}$$

Hence, father's present age = 30 years.

27. (c) Let A be the event denotes that contractor gets the plumbing contract.
Let B be the event denotes that contractor gets the electric contract.

$$\text{Given: } P(A) = \frac{2}{3}, P(B) = \frac{4}{9}, P(\bar{B}) = \frac{5}{9}$$

$$\text{and } P(A \cup B) = \frac{4}{5}$$

$$\text{To find: } P(A \cap B) = ?$$

$$\text{We know, } P(A \cup B) = P(A) + P(B) - P(A \cap B)$$

$$\Rightarrow \frac{4}{5} = \frac{2}{3} + \frac{4}{9} - P(A \cap B)$$

$$\Rightarrow P(A \cap B) = \frac{10}{9} - \frac{4}{5} = \frac{14}{45}$$

28. (c) No. of candidate for first post = 5
No. of candidate for 2nd post = 8
No. of candidate for 3rd post = 7

$$P(\text{getting 1st post}) = \frac{1}{5}, P(\text{getting 2nd post}) = \frac{1}{8}$$

$$\text{and } P(\text{getting 3rd post}) = \frac{1}{7}$$

$$\therefore P(\text{not getting 1st post}) = \frac{4}{5},$$

$$P(\text{not getting 2nd post}) = \frac{7}{8} \text{ and}$$

$$P(\text{not getting 3rd post}) = \frac{6}{7}$$

$$= 1 - \left(\frac{4}{5} \times \frac{7}{8} \times \frac{6}{7} \right)$$

$$\therefore P(\text{getting at least one pest}) = 1 - \frac{3}{5} = \frac{2}{5}$$

29. (a) **Case I :** When Y is a member.
then no. of ways = ${}^6C_3 \times {}^7C_3 = 20 \times 35 = 700$
Case II : When Y is not a member.
then no. of ways = ${}^6C_4 \times {}^8C_3 = 15 \times 56 = 840$
 $\therefore$ Total no. of ways = $700 + 840 = 1540$
30. (d) At X, let men = $2x$ and women = x
 $\therefore$ At Y, men = $2x - 10$ and women = $x + 5$
But it is given that at Y, Men = Women
 $\Rightarrow 2x - 10 = x + 5 \Rightarrow x = 15$
 $\therefore$ Passengers at X = $3x = 45$

31. (c) $1600 + 669 = 2269 = \text{Not a perfect square}$
 $1500 + 669 = 2169 = \text{Not a perfect square}$
 $1540 + 669 = 2209 = \text{Square of } 47$
 $1690 + 669 = 2359 = \text{Not a perfect square}$
Thus, by adding 669 to each of the alternatives, we note that $1540 + 669 = 2209$, and this is the only square number.

So each side of the square contains

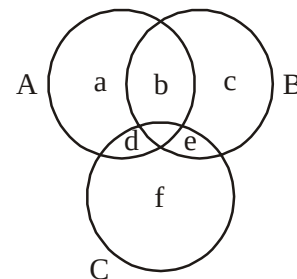
$$\sqrt{2209} = 47 \text{ balls.}$$

$\therefore$ Each side of the triangle will contain 55 balls.

Thus the triangle will contain

$$1 + 2 + 3 + \dots + 55 = \frac{55(55+1)}{2} = 1540 \text{ balls}$$

32. (c) Let the regions among A, B and C be distributed by a, b, c, d, e, f as in the Venn diagram shown below :



From the figure, $B \cup C = b + c + d + e + f$ and $A = a + b + d$
 $\therefore A \cap (B \cup C) = b + d$, Which is shaded in the given figure.

33. (d) Top two openers are A and B
Average of A's runs = $\frac{994}{19} = 52.32$
Average of B's runs = $\frac{751}{18} = 41.72$
Difference = $52.32 - 41.72 = 10.6$
34. (c) Required average of C = $\frac{414 - 52}{17} = 21.29$
35. (c) Difference between two highest total runs = $994 - 772 = 222$
Difference between two lowest total runs = $653 - 414 = 239$
 $\therefore$ Required difference = $239 - 222 = 17$
36. (b) Option (a) : $\frac{141}{130}$ Option (b) : $\frac{130}{52} = \frac{5}{2}$
Option (c) : $\frac{130}{94}$ Option (d) : $\frac{94}{52}$

Sol. For (Qs. 37- 40)

The given pie chart can be tabulated as below:

Ray	% Solar Radiation	Unit received in one minutes
Radiowave	15	540
Alpha Rays	10	360
UV Rays	20	720
IR Rays	10	360
Beta Rays	5	180
Gamma Rays	5	180
X Rays	30	1080
Micro Waves	5	180

37. (c) Required time = $\frac{9720}{360} = 27$ minutes
38. (c) Amount of Beta Rays in 10 minutes = $180 \times 10 = 1800$
Amount of IR rays in 3 minutes = $360 \times 3 = 1080$
 $\therefore$ Required ratio = $\frac{1800}{1080} = 1.66$
39. (d) $(40 \times 30 =)$ 1200 units of Beta Rays will require to generate 40 units of vitamin D.
 $\therefore$ Required time = $\frac{1200}{180} = 6\frac{2}{3}$
40. (c) Amount of alpha rays in two minutes = $2 \times 360 = 720$
Amount of radio wave in four minutes = $4 \times 540 = 2,160$
 $\therefore$ Difference = $2,160 - 720 = 1,440$ (less)
41. (b) Asian Non-Christian females who are professionals are represented by the common figure of all square except Christians's square i.e., 10
42. (a) Asian females who are neither professional nor Christian are denoted by the common figure of Asians square and Females square i.e., 6
43. (c) Non-Asian professional christian male are represented by the common figure of christian's square and professional square i.e., 12
44. (d) Christian females who are Non-professional and Asian are represented by the common figure of all squares except professionals square. But no any figure belongs in these three squares.
45. (d) Insipid (meaning tasteless) is opposite to piquant (meaning spicy taste). Similarly flat is related to spicy.
46. (a) Similarly As
- | | |
|------------------------|------------------------|
| T $\xrightarrow{-1}$ S | C $\xrightarrow{-1}$ B |
| E $\xrightarrow{-1}$ D | R $\xrightarrow{-1}$ Q |
| R $\xrightarrow{-1}$ Q | E $\xrightarrow{-1}$ D |
| M $\xrightarrow{-1}$ L | D $\xrightarrow{-1}$ C |
| I $\xrightarrow{1}$ J | I $\xrightarrow{1}$ J |
| N $\xrightarrow{1}$ O | B $\xrightarrow{1}$ B |
| A $\xrightarrow{1}$ B | L $\xrightarrow{1}$ M |
| L $\xrightarrow{1}$ M | E $\xrightarrow{1}$ F |

47. (c) $W - T = 23 - 20 = 3$
 $S - D = 19 - 4 = 15$
 $T - J = 20 - 10 = 10$
 $P - G = 16 - 7 = 9$

48. (c)
- | | | | | | |
|---|---|----|----|----|----|
| 1 | 2 | 3 | 2 | 10 | 12 |
| 2 | 5 | 12 | 10 | 16 | 13 |
| 1 | 2 | 1 | ? | 10 | 24 |
- 4 9 16 25 36 49

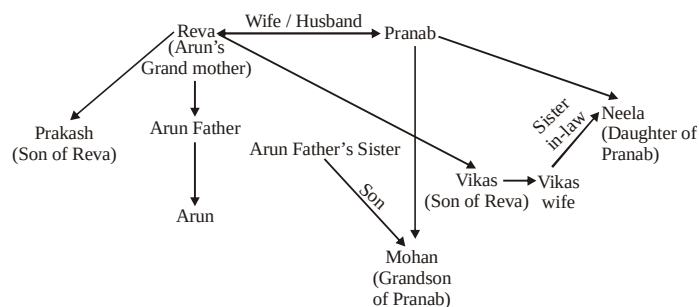
Hence, the missing term is $25 - (2 + 10) = 13$.

For (Qs. 49-51)

Given information can be tabulated as below :

Mr. and Mrs. Aggarwal (Ashok's maternal Uncle)	Seeta + Sunil	Ashok Sanjay
	Rajinder	Rita Aggarwal Sonu Aggarwal Raju Aggarwal
Mr. and Mrs. Malhotra	Renu (Sanjay's Aunty)	
	Raja	Ashok Malhotra Sanjay Malhotra
Mr. and Mrs. Gupta	Sunil + Seeta	
	Geeta + Surinder	Rita Gupta Sonu Gupta Raju Gupta
	Rakesh	

49. (d) 50. (b) 51. (d)
52. (b) The relations describe in the question can be represented as follows:



Thus wife of Vikas is sister in-law of Neela.

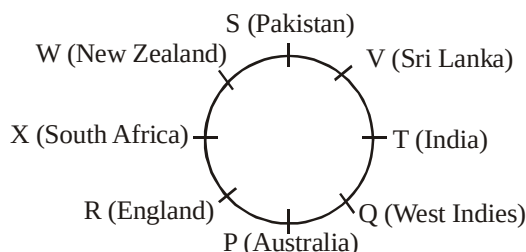
For Qs. (53-56).

Colour	Top	Bottom	Front	Back	Left	Right
Black	✓	×	×	×	×	×
Blue	×	×	✓	×	×	×
Brown	×	×	×	×	×	✓
Green	×	×	×	✓	×	
Red	×	✓	×	×	×	×
White	×	×	×	×	✓	×

53. (d) The four colours adjacent to green are black, brown, red and white.

54. (a) The red side is opposite to the black. Therefore, if red is at the bottom, black will be at the top.
55. (d) VI Does not add to the information provided by I – V.
56. (b) White and brown are opposite faces.
57. (c) Since E, H and M are on the east wall, so, O, R and T will be on the west wall. T and O do not go together, so, O cannot be in the centre of the west wall.
58. (c) T cannot be next to O because T and O do not go well together.
59. (c) If H, M and R to be on the same wall, O, E, and T have to be on the opposite wall. It cannot be possible because O does not go well with either E or T
60. (b) Either R or H will be next to an O as Ankit trades his M painting for another O painting just like the one he has now.

Sol. For (Qs. 61 - 64):



61. (c)
62. (a)
63. (b) There is pattern of going from second member of a pair to the first member of the next pair: +2, +3, +4 ... CW.
64. (c)
65. (b) Sitting arrangement is as follows :
- | | | | | | | |
|-----------------|-----------------|-----------------|-----------------|-----------------|-----------------|-----------------|
| G_1 | B_1 | G_2 | B_2 | G_3 | B_3 | G_4 |
| 1 st | 2 nd | 3 rd | 4 th | 5 th | 6 th | 7 th |
- The number of boys are less than girls, so we should begin with girl.
66. (a) (i) Sudha > Puja
(ii) Suma > Kavita > Sudha
(iii) Sudha > Mamta > Puja
Now order of score is
Suma > Kavita > Sudha > Mamta > Puja
67. (b) The sequence is as below :

Either side				
Blue	Green or Red	Yellow	Red or Green	Blue
X		Z		X

68. (d) **Statement 1 states, "It can feel like a treadmill that gets you nowhere".** This is a personal view point. so Judgement.

Statement 2 is a personal viewpoint not necessarily agreed by many. It is a judgment.

Statement 3 is an opinion, neither verifiable or directly experienced. It is a judgement.

Statement 4 is someone's personal assessment of his own experience. This cannot be verified. It is also a judgment.

Hence, the correct answer is option 4.

69. (a) The given options require you to evaluate statement 1 as either a Judgment or an Inference. 'Given the poor quality of services in the public sector ... ' is more of a judgement than a fact. Eventhough "poor quality" of service in publicsector is known to us, the same opinion cannot be agreed by everyone. Based on this the judgement "should be switching...." is also a judgement. Remember, A conclusion drawn from a fact is an inference, but drawn from a judgement is still a judgement. Statement 1 is a judgment. This eliminates option C and D.

The numbers in statement 2 are a result of direct verification. Hence it is easy to see that statement 2 is a fact. This eliminates option B.

Evaluating option A which say statement 4 is an inference, one has to now establish whether statement 5 is an inference or a judgment.

" ... how ironic it is.." is neither verified nor verifiable through facts. Statement 4 is a judgment.

Hence, the correct answer is option 1.

Statement 3 is an inference as Initiatives (which is a fact) lead to availability of much-needed drugs to a larger number of affected people. (which is a judgement)

70. (c) Statement 1 is an inference. "According to statistical indications" tells us that what follows is based on statistics, hence an inference. This eliminates option b. In statement 2 (to be evaluated as Judgement or Inference), 'significant incentive' is a judgement,(How much significant can be verified though statistical data, then this statement is an inference but not a fact). 'the vital link" between healthy bodies and healthy minds' cannot be verified. Hence, it is a judgment.

Options c and d remain. The options state that sentence 3 is Fact. Sentence 4 to be evaluated as either an Inference or a Judgement. "... has to be a prerequisite for the evolution...." cannot be verified from facts making sentence 4 a Judgment. Hence, the correct answer is option c.

71. (c) Referring to sentence 5, "Gas exhalation," it is clear that (c) is correct.
72. (d) Referring to sentence 2, "All the membranes," it is clear that necessary ingredient in the eggshell's suitability for gas exchange is adhesiveness.
73. (d) Referring to last 2nd & 3rd sentence of passage, "Therefore as water," it is clear that (d) is correct.
74. (d) The passage would be most likely to appear in a scientific journal article highlighting biochemical and physical principles underlying common phenomena.
75. (a) Referring to last 2nd sentence of passage, "If the as water," it is clear that (a) is correct.
76. (b) **Zoom** is to rise fast and sharply. **Plummet** is to downslide very fast, **soothe** is to make someone or something calm. **Refute** is to deny or contradict, **subjugate** means to bring under control.
77. (a) **Predilection** means a special liking for someone. **Antipathy** means hate for someone or a strong dislike. **Dissonance** is difference of opinion.
78. (a) **Docile** means submissive and therefore can be controlled very easily, **unmanageable** is someone or something that cannot be controlled or managed easily.
79. (c) **Equivocal** means doubtful or ambiguous, **clear** will be opposite to that, **Quaint** means strangely delightful.
80. (c) **Prosaic** means ordinary, whereas **Rhetorical** is impressive, ornate and is meant to influence. **Pensive** means sad and thoughtful.
81. (c) **Levity** means lack of seriousness whereas **solemnity** means seriousness. **Frivolity** is something that lack a serious intention and can be taken synonymous with levity.
82. (a) **Obloquy** is severe criticism publicly, an abuse. **Slander** means false charges on someone.
83. (a) **Elan** means vivacious, i.e., full of colour, life and enthusiasm, **flair** means natural ability, means inner enthusiasm to do a thing, **spiritual** is 'of the spirit', **inspiration** is motivation.
84. (d) **Gauche** is lacking ease or grace of manner, i.e. someone dull and incipient, **Vain** means false pride, **polished** is sophisticated and refined so opposite to Gauche, **tactless** is someone who is dumb or dull.
85. (c) **Browbeat** is to scare someone by powerful words, **timidate** is also to overpower or influence greatly, incite fear. **Tarnish** is to lose lustre.
86. (d) **Imposture** means deception or cheating.
87. (c) **Proboscis** means long flexible snout, **probe** is to question.
88. (a) **Parley** is to discuss, **sweeten** is to make something sweet.
89. (a) (c) is obviously wrong, the second part of (b) does not fit as the pipe smokers are not 'responsible'. (d) is incorrect because rejoined means reply or retort.
90. (b) (a) is wrong since overdrawing is definitely not an aspect of art. (c) cannot be held true since Indian art cannot be accused of imitation and one form of art can never be judged superior or inferior to other. Among (b) and (d), (b) fits better as it supports the later part of sentence as well.
91. (a) The answer is obvious since the other options are weak as one or other word doesnot fit at all.
92. (d) Prognostications means prediction. One may be declared optimistic only when one doesnot take heed of unpleasant situations. (a) is wrong because if a report is malicious there is no chance of benefit. (b) is wrong since sanguinary means violent and a report cannot be violent by any means. (c) is wrong because if the analysis is not pessimistic then what is the point of boisting of being optimist.
93. (d) Clearly A has to be followed by D as D completes what Allan H. Meltzer was mentioning in A. Also B has to be followed by C as 'that could shrink demand further' is the result of what is happening in B.
94. (a) A is the opening sentence as is clear from the given options. A is followed by B as B talks about what Farooq Abdullah said to the journalist. C is followed by D as D adds up to the situation in C. Also E has to come before C and D as the 'test' mentioned in E is reffering to the situation in J&K assembly as mentioned in C.
95. (b) Clearly A is the opening sentence of the paragraph followed by B. C, D and E can come only after B as they reflect the effect of the economic recession. Hence the best sequences is ABCDE.
96. (c) Clearly E has to be followed by A as they talk about what employees and employers seek from each other. The use of 'And, in turn' in A shows that it comes after E. A is followed by B which is the summary of E and A. C continues the summary started in B. D is the concluding sentence.
97. (c) 98. (a) 99. (b) 100. (d)
101. (d) Name of a newspaper is preceeded by article 'the, it should be 'The Times of India'.
102. (b) Trouser is always used in the plural form 'trousers'.
103. (c) Since the article 'a' has been used, two furlongs must be used as a single unit so the right use will be two furlong.
104. (d) The third form 'hanged' is used only in association with hanging somebody as a punishment. For the usage of hanging on the wall, the verb 'hung' is used.

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105. (d) 'Return' means to 'come back', return back would therefore be incorrect use since it will mean come back back. Right form is only 'return'.
106. (b) The second sentences is the correct usage as for 'one' in the starting part of the sentence the right pronoun would be he.
107. (d) The use of the word 'had' before ought to be is redundant. The use of should in place of ought changes the meaning of the sentence.
108. (d) The sentence (a) and (c) are not complete in themselves. The sentence (b) changes the meaning of the given sentence. Hence (d) is only correct one which shows the correct usage 'Entertainment is recognized.'
109. (b) The use of the word 'those' in place of 'they' is the right usage. Further the use of who after those is correct.
110. (b) The given sentence is correct, hence (b) is the correct option which repeats the sentence.
111. (a) 112. (c) 113. (d) 114. (a) 115. (b)
116. (b) 117. (d) 118. (a) 119. (c) 120. (a)
121. (d) 122. (a) 123. (c) 124. (c) 125. (a)
126. (c) 127. (a) 128. (d) 129. (c) 130. (c)
131. (c) 132. (b) 133. (c) 134. (a) 135. (b)
136. (a) 137. (d) 138. (b) 139. (a) 140. (b)
141. (c) 142. (b) 143. (b) 144. (d) 145. (a)
146. (a) 147. (b) 148. (d) 149. (b) 150. (b)