CAT Sample Paper 2

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Section 1 Quantitative Ability

DIRECTIONS *for questions 1 to 7:* **Answer the questions independently of each other.**

1. What is the remainder when 7^{700} is divided by 100?

(1) 1
(2) 61
(3) 41
(4) 21

2. A is a set of all those integers greater than 1 and less than 100 which are divisible either by 3 or by 4 but not by both. What is the index of the highest power of thousand that occurs in the product of all the elements of set A?

(1) 9
(2) 7
(3) 3
(4) 4
(5) 6

3. A mathematics teacher asked each of her students to think of a natural number which was a perfect square and then convert it to a number system to the base of any natural number of their choice, where the base is not more than 9. The teacher later observed that though no two students took the same base, all the students in the class ended up with the same result of 12321. Find the maximum, possible number of students in the class.

(1) 9
(1) 8
(2) 7
(3) 6
(4) 5

4. If $a^m = a^n$, where *a* is a real number, while *m* and *n* are integers, then which of the following must be true?

(1) $M = N$
(2) If $M \neq N$, $A = 0$ or $A = 1$
(3) $M \neq N$
(4) $A = M^N$
(5) None of these

5. The total cost of 2 pencils, 5 erasers and 7 sharpeners is Rs.30, while 3 pencils and 5 sharpeners cost Rs.15 more than 6 erasers. By what amount (in Rs.) does the cost of 39 erasers and 1 sharpener exceed the cost of 6 pencils?

(1) 20

(2) 30

(3) It does not exceed

(4) Cannot be determined

6. The marked price and the cost price of a watch are in the ratio 4:3. The discount percentage offered before it was sold and the profit/loss percentage made on it are in the ratio 3 : 4. Find the profit/loss percentage.

(1) $8\frac{1}{3}\%$ Loss

(2) $4\frac{1}{3}\%$ Profit

(3) $8\frac{1}{3}\%$ Profit

(4) $16\frac{2}{3}\%$ Profit

(5) Cannot be determined

7. Ram, the local shoe shop owner, sells four types of footwear - Slippers (S), Canvas Shoes (C), Leather Shoes (L) and Joggers (J). The following information is known regarding the cost prices and selling prices of these four types of footwear:
(i) L sells for Rs.500 less than J, which costs Rs.300 more than S, which, in turn, sells for Rs.200 more than L.
(ii) L costs Rs.300 less than C, which sells for Rs.100 more than S Which, in turn, costs Rs.100 less than C.

If it is known that Balram never sells any item at a loss, then which of the following is true regarding the profit percentages earned by Balram on the items L, S, C and J represented by _l_, _s_, _c_ and _j_ respectively?

(1) $L \geq C \geq S \geq J$

(2) $C \geq S \geq L \geq J$

(3) $L \geq S \geq C \geq J$

(4) $S \geq L \geq J \geq C$

8. If the roots of the equation $(x + 1)(x + 9) + 8 = 0$ are _a_ and _b_, then the roots of the equation $(x + a)(x + b) - 8 = 0$ are

(1) 1 and 9

(2) -4 and -6

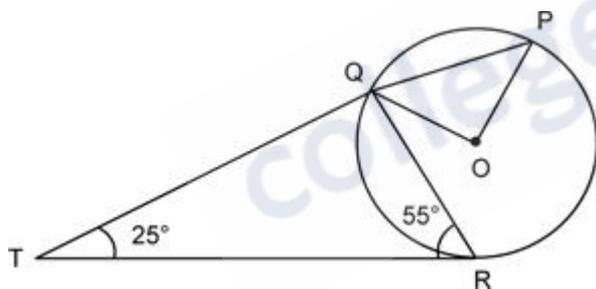(3) 4 and 6

(4) Cannot be determined

9. If y is an even natural number not less than 4 and $x = y^2 - 2y$, then the largest number that always divides $x^2 - 8x$ is

(1) 182
(2) 144
(3) 72
(4) 384
(5) 96

10. Let S_n be defined as $S_n = t_0 + t_1 + t_2 + ..==. t_{n-1} + t_n$, where $t_n = (-1)^{n+1} (t_{n-1} + 1)$ and $t_0 = 1$. Find S_{199}.

(1) -100
(2) 100
(3) -99
(4) -199
(5) -198

11. In the figure below, P, Q and R are points on a circle with centre O. The tangent to the circle at R intersects secant PQ at T. If QRT = 55° and QTR = 25°, find POQ.

(1) 110°
(2) 100°
(3) 90°
(4) 50°

12. AB is the diameter of a circle with centre O and C is a point on the circle different from A and B. D is a point on BC such that OD ^ BC. E is a point on BD such that OE bisects ÐBOD and BE : ED = 2 : 1. If F is the midpoint of DC, find the length (in cm) of AF, given that AB = 24 cm.

(1) $\sqrt{161}$
(2) $\sqrt{171}$
(3) $\sqrt{181}$
(4) $\sqrt{191}$
(5) $\sqrt{201}$

13. A sequence of 4 digits, when considered as a number in base 10 is four times the number it represents in base 6. What is the sum of the digits of the sequence?

(1) 7

(2) 6

(3) 9

(4) 8

14. Some friends planned to contribute equally to jointly buy a CD player. However, two of them decided to withdraw at the last minute. As a result, each of the others had to shell out one rupee more than what they had planned for. If the price (in Rs.) of the CD player is an integer between 1000 and 1100, find the number of friends who actually contributed?

(1) 21

(2) 23

(3) 44

(4) 46

15. If $\dfrac{y + z - x}{x}$, $\dfrac{x + z - y}{y}$ **and** $\dfrac{x + y - z}{z}$ **are in arithmetic progression, then which of the following are in arithmetic progression?**

32. X, Y, Z

33. $X + Y, X + Z, Y + Z$

34. $\dfrac{1}{x}, \dfrac{1}{y}, \dfrac{1}{z}$

(4) $\dfrac{1}{x + y}, \dfrac{1}{x + z}, \dfrac{1}{y + x}$

(5) None of these

DIRECTIONS *for questions 16 and 17:* **Answer the questions on the basis of the information given below.**

A robot is designed to move in a peculiar way and it can be set in motion by a microprocessor program. The program can be initiated by assigning a positive rational value to its variable *n*. The program directs the robot to move in the following way. As soon as the program is started, the robot starts from the point O, moves 2*n* metres northward and changes its direction by *n*° to the right. It then moves 2*n* metres forward and again changes its direction by *n*° to the right and continues in this manner till it reaches the starting point O, or till it covers a total distance of 1000 m, whichever happens first, and then it stops.

16. I assigned a value for *n* and started the program. If the robot finally came back to O and stopped, what is the total distance that it has covered?

(1) 180 m

(2) 360 m

(3) 720 m

(4) Cannot be determined

17. For how many values of n in the intervals [1, 60] does the robot cover less than 1000 m, before it stops?

(1) 19
(2) 60
(3) 355
(4) Infinite

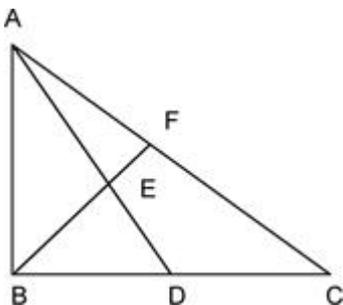**DIRECTIONS** *for questions 18 to 34:* **Answer the questions independently of each other.**

18. If N = 888Dup to 100 digits, what is the remainder when N is divided by 625
(1) 128
(2) 138
(3) 338
(4) 388

19. If $[\log_{10}1] + [\log_{10}2] + [\log_{10}3] + [\log_{10}4] + ... + [\log_{10}n] = n$, where [$x$] denotes the greatest integer less than or equal to x, then

(1) $96 \leq n < 104$
(2) $104 \leq n < 107$
(3) $107 \leq n < 111$
(4) $111 \leq n < 116$

20. In the figure below, BD = 8 cm and DC = 6 cm. AE : ED = 3 : 4. If AF = 12 cm, find AC (in cm).

(1) 28
(2) 38
(3) 44
(4) 40

21. A regular polygon has an even number of sides. If the product of the length of its side and the distance between two opposite

sides is $\frac{1}{4}$th of its area, find the number of sides it has.

(1) 6
(2) 8
(3) 20
(4) 16

22. A rectangle ABCD, when rolled such that the two lengths AB and CD coincide becomes a cylinder of volume C_1. Similarly, when it is rolled such that the two breadths AD and BC coincide, it becomes a cylinder of volume C_2. If a square of the same area is rolled in a similar manner along one of its sides, a cylinder of volume C_3 is formed. Which of the following statements holds true?

(2) $C_3 > C_2 > C_1$
(3) $C_3 > C_1 > C_2$
(4) $C_2 > C_3 > C_1$
(5) $C_1 > C_3 > C_2$
(6) None of these

23. The perimeter of an equilateral triangle equals the perimeter of a rectangle. If one of the sides of the rectangle equals the side of the triangle, find the ratio of the areas of the triangle and the rectangle.

(1) $\sqrt{3} : 1$
(2) $\sqrt{3} : \sqrt{2}$
(3) $2\sqrt{3} : 1$
(4) $2 : \sqrt{3}$
(5) $\sqrt{3} : 2$

24. There are three cities A, B and C, not on the same straight road. Two buses P and Q start simultaneously from A and B respectively towards C. By the time Q reaches C, P is exactly halfway to C. Immediately after Q reaches C, it starts travelling towards A and it

crosses P at a point 165 km from A. The ratio of the speeds of P and Q is 3 : 5. Assume that the roads joining A to C, B to C and B to A are all straight roads. If B is twice as far as from A as it is from C

and P would take to cover the distance from A to B, how much time would Q take to cover the distance from C to A?

(1) $2\frac{2}{5}$ hours

(2) 3 hours

(3) $3\frac{3}{5}$ hours

(4) 4 hours

25. Two positive real numbers, *a* and *b*, are expressed as the sum of *m* positive real numbers and *n* positive real numbers respectively as follows:

a = s_1 + s_2 + D..+ s_m
and *b* = t_1 + t_2 + D..+ t_n
If [*a*] = [s_1] + [s_2] + D.. + [s_m] + 4 and [*b*] = [t_1] + [t_2] + D. + [t_n] + 3, where [*x*] denotes the greatest integer less than or equal to *x*, what is the minimum possible value of *m* + *n*?

(1) 6
(2) 10
(3) 8
(4) 9

26. Consider two figures A and D that are defined in the co-ordinate plane. Each figure represents the graph of a certain function, as defined below :

A: | *x* | - | *y* | = *a*
D: | *y* | = *d*

If the area enclosed by A and D is 0, which of the following is a possible value of (*a*, *d*)?

(1) (2, 1)
(2) (-2, 1)
(3) (-2, 3)
(4) (2, 3)

27. A natural number *n* is such that 120 *n* ≤ 240. If HCF of *n* and 240 is 1, how many values of *n* are possible?

(1) 24
(2) 32
(3) 36
(4) 40

28. If $S = \dfrac{2}{10} + \dfrac{6}{10^2} + \dfrac{12}{10^3} + \dfrac{20}{10^4} + \dfrac{30}{10^5} + \dfrac{42}{10^6} + \ldots\ldots$, find the value of S?

(1) 24/90
(2) 242/900
(3) 245/900
(4) 200/729

29. If the sum to infinity of the series 2 + (2 - *d*)2/3 + (2 + *d*) 4/9 + (2 + 3*d*) 8/27 + D.. is 5/2, what is the value of *d*?

(1) 7/12
(2) -7/12
(3) -5/12
(4) 5/12

30. The first *n* natural numbers, 1 to *n*, have to be arranged in a row from left to right. The *n* numbers are arranged such that there are an odd number of numbers between any two even numbers as well as between any two odd numbers. If the number of ways in which this can be done is 72, then find the value of *n*.

(1) 6
(2) 7
(3) 8
(4) More than 8

31. Working together, two workers completed a job in 5 days. Had the first worker worked twice as fast and the second worker half as fast, it would have taken them 4 days to complete the job. In how many days will the first person working alone, complete the entire job?

(1) 10 days
(2) 20 days
(3) 30 days
(4) 60 days
(5) 72 days

32. A cat, which is sitting inside a tunnel PQ, at a distance of 50 m from the end P, notices a train approaching the end P of the tunnel from the outside. Now, if the cat runs towards the end P, then the train would meet it exactly at P. If the cat runs towards the end Q instead, then the train would meet it exactly at Q. Which of the following is not a possible value of the length PQ (in m) of the tunnel?

(1) 130
(2) 120
(3) 110
(4) 100
(5) 105

33. In how many distinguishably different ways can a cube be painted using at most two colours - White and Black - such that each face is coloured with exactly one of the two given colours

(1) 24

(2) 16

(3) 10

(4) 12

(5) 14

34. Chris and his wife invited a total of 10 families on their marriage anniversary. While the host family had just the two members, each family invited consisted of four members. If every person in the party shook hands with every other person belonging to a different family exactly once, then find the number of handshakes that took place in the party.

(1) 801

(2) 800

(3) 740

(4) 729

(5) None of these

Section 2 Logical Reasoning & Data Interpretation

DIRECTIONS *for questions 35 to 37:* Answer the questions on the basis of the information given below.

After facing yet another World Cup debacle, the Board of Cricket Control in India (BCCI) is in search of a new coach for the team. It shortlisted five persons - Anshuman, Buchanen, John, Whatmore and Chappel. Each of them is from a different country among Australia, India, Japan, Pakistan and Canada, not necessarily in that order. At present, each of them is coaching the team of a different country among Australia, Bangladesh, China, Wales and Bermuda, not necessarily in that order. The following details were also observed about their particulars:

(i) For any person, each of his three particulars - his name, the name of the country from which he is and the name of the country that he is coaching at present, starts with a different letter.

(ii) Whatmore is coaching Australia and John is from neither Australia nor Pakistan.

(iii) Buchanen is not coaching China and the person who is coaching Bermuda is from Canada.

(iv) Anshuman is neither from Canada nor from Pakistan and also the person from Pakistan is coaching Bangladesh.

35. Whatmore is from which country?

(1) India
(2) Japan
(3) Canada
(4) Cannot be determined

36. Who is the person from Australia?

(1) Buchanen
(2) John
(3) Whatmore
(4) Cannot be determined

37. The person from Japan is definitely not coaching

(1) China
(2) Wales.
(3) Australia.
(4) More than one of the above

DIRECTIONS *for questions 38 to 42:* Answer the questions on the basis of the information given below.

Mr Suzuki, a car dealer, sold cars of only two brands, A and B, in the previous year. This year, he introduced a new brand, C. The number of cars of brand A and brand B sold in the previous year were in the ratio 3 : 2, and the ratio of the number of cars sold in the previous year to that sold in this year is 2 : 3 for brand A and 2 : 5 for brand B. Further, the number of cars of brand C sold this year forms 81% of the total number of cars sold this year.

38. Find the number of cars of brand C sold this year, given that a total of 24 cars of brand A were sold in the previous year.

(1) 324
(2) 648
(3) 162

(4) 243

39. What is the percentage increase in the total number of cars sold this year when compared to the total number of cars sold in the previous year?

(1) 400%

(2) 600%

(3) 900%

(4) 1000%

40. In the next year, Mr.Suzuki wants to increase the total sales by 80%, compared to the total sales this year, by keeping the sales of each of A, B and C at the same level as that in this year and introducing a new brand D. By what percent will the number of cars of brand D (to be sold next year) be more than the total number of cars sold last year?

(1) 400%

(2) 600%

(3) 900%

(4) 700%

41. If a total of 380 cars were sold this year, and the sales of C this year were nil, instead of 81% of total sales, then how many cars of brand A were sold in the previous year?

(1) 140

(2) 120

(3) 100

(4) 160

DIRECTIONS *for questions 42 and 43:* **The question given below is followed by two statements, I and II. Study the information given in the two statements and assess whether the statements are sufficient to answer the question and choose the appropriate option from among the choices given below:**

42. Two of the three cricketers Pavan, Rajan and Tarun are selected to the national team. Each of these three persons scored a different number of centuries and a different number of runs. Further, among these three, Tarun scored the highest number of centuries. Who among Pavan, Rajan and Tarun is not selected to the national team?

I. The person with the higher number of runs between Tarun and Pavan, is the person who scored the lesser number of centuries between the two persons selected.

II. The person with the least number of runs between Rajan and Tarun, is the person who scored the higher number of centuries between the two persons selected.

(1) The question can be answered by using one of the statements alone, but cannot be answered using the other statement alone.

(2) The question can be answered by using either statement alone.

(3) The question can be answered by using both statements together, but cannot be answered using either statement alone.

(4) The question cannot be answered even by using both statements together.

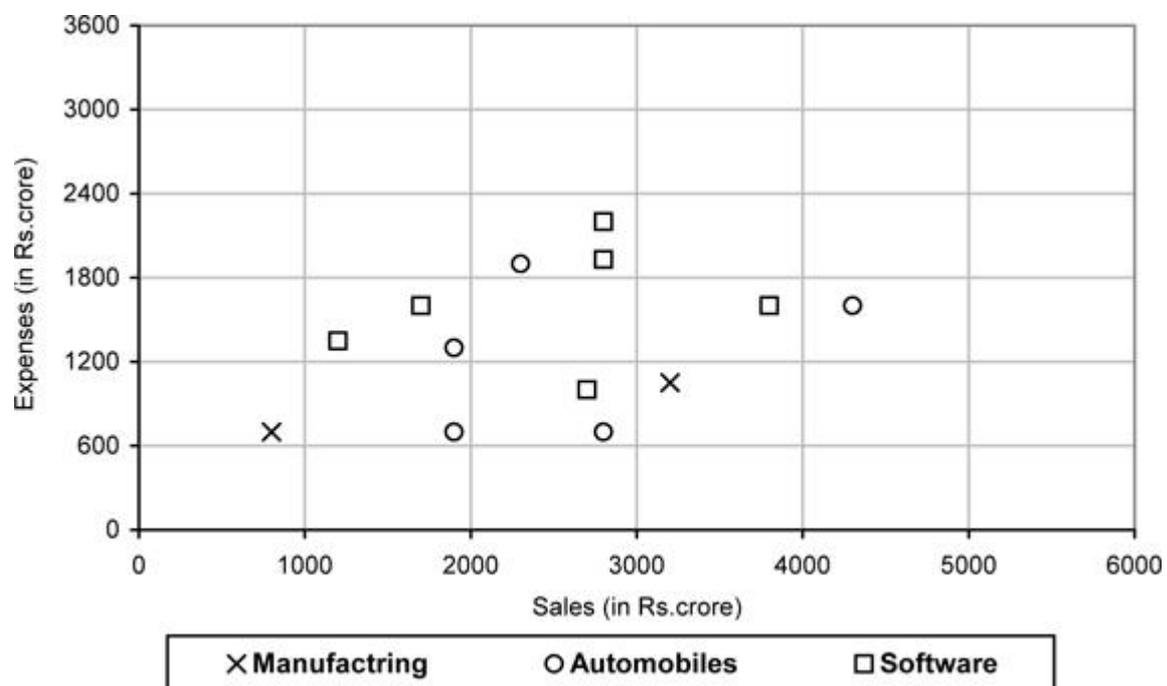**43. Triangle ABC is right angled at B. What is the value of AB + BC?**
I. Diameter of the circle inscribed in the triangle ABC is 10 cm.
II. Diameter of the circle circumscribing the triangle ABC is 27 cm.

(1) The question can be answered by using one of the statements alone, but cannot be answered using the other statement alone.

(2) The question can be answered by using either statement alone
(3) The question can be answered by using both statements together, but cannot be answered using either statement alone.

(4) The question cannot be answered even by using both statements together.

DIRECTIONS *for questions 44 and 45:* **Answer the questions on the basis of the information given below.**

  Each point in the graph below shows the sales and expenses of a company. Each company belongs to one of the three sectors among manufacturing, automobiles and software.

44. For how many of the companies, is the profit more than 40% of the sales (Profit = Sales - Expenses)?

(1) 4
(2) 5
(3) 6
(4) 7

45. For how many software companies are the sales more than Rs.2500 crore but the expenses less than Rs.2100 crore?

(1) 2
(2) 3
(3) 4
(4) 6

DIRECTIONS *for questions 46 to 49:* **Answer the questions on the basis of the information given below.**

  A team must be selected from ten probables - A, B, C, D, E, F, G, H, I and J. Of these, A, C, E and J are forwards, B, G and H are point guards and D, F and I are defenders.

Further the following conditions need to be observed:

• **The team must have at least one forward, one point guard and one defender.**

• **If the team includes J, it must also include F.**

• **The team must include E or B, but not both.**

• **If the team includes G, it must also include F.**

• **The team must include exactly one among C, G and I.**

• **C and F cannot be members of the same team.**

• **D and H cannot be members of the same team.**

• **The team must include both A and D or neither of them.**

There is no restriction on the number of members in the team.

46. What could be the size of the team that includes G?

   (1) 4
   (2) 5
   (3) 6
   (4) More than one of the above

47. What would be the size of the largest possible team?

(1) 4
(2) 5
(3) 6
(4) 7

48. Who cannot be included in a team of size 6?

(1) A
(2) H
(3) J
(4) E

49. What can be the size of the team that includes C?

(1) 3
(2) 4
(3) 5
(4) More than one of the above

DIRECTIONS *for questions 50 and 51:* **The question given below is followed by two statements, I and II. Study the information given in the two statements and assess whether the statements are sufficient to answer the question and choose the appropriate option from among the choices given below:**

50. What percentage of the questions were attempted by Ramya in the exam?
I. 30% of the questions are attempted by both Ramya and Swathi.
II. The number of questions attempted by Ramya but not by Swathi is (5/8)th of the total number of questions attempted by Ramya.

(1) The question can be answered by using one of the statements alone but not by the other.

(2) The question can be answered by using either statement alone.

(3) The question can be answered by using both the statements together, but cannot be answered by using either statement alone.

(4) The question cannot be answered even by using both the statements together.

51. Each of Ankit and Bhanu belong to one of the tribes between truth tellers i.e., those who always speak the truth, and liars i.e., those who always lie. Do both of them belong to the same tribe?
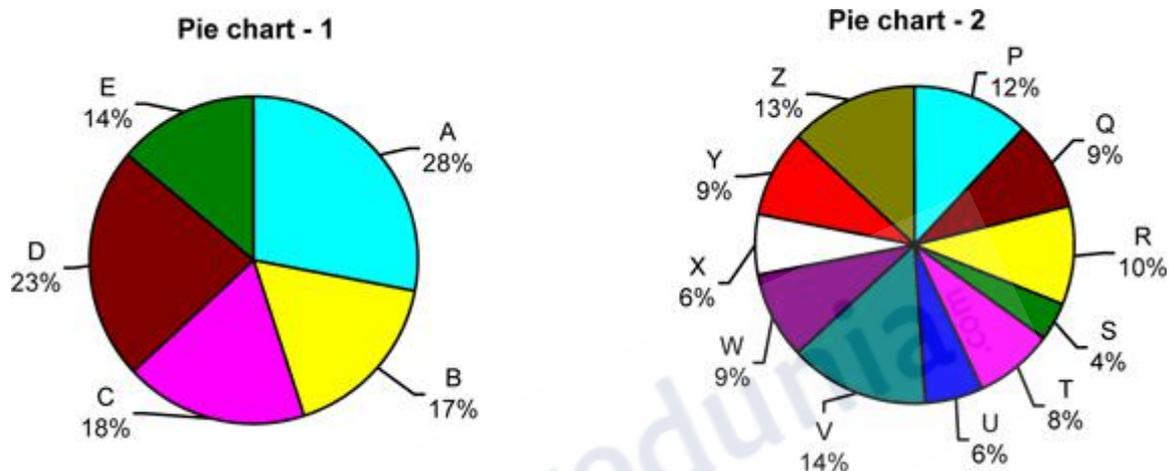**I. Ankit : I am a liar, only if Bhanu is a truth teller.**
II. Bhanu : I am a truth teller, only if Ankit is a liar.

(1) The question can be answered by using one of the statements alone but not by the other.

(2) The question can be answered by using either statement alone.

(3) The question can be answered by using both the statements together, but cannot be answered by using either statement alone.

(4) The question cannot be answered even by using both the statements together.

DIRECTIONS *for questions 52 to 54:* **Answer the questions on the basis of the information given below.**

Pie chart - 1 gives the percentage shares of all the five cement companies - A, B, C, D and E - in the total quantity of cement sold in country XYZ. Pie chart - 2 gives the percentage shares of all the eleven states - P through Z - in the total quantity of cement sold in the country.

Pie chart - 1
Pie chart - 2

The *market share* of any company in a state is the total quantity of cement sold by the company in that state as a percentage of the total quantity of cement sold in that state.

52. In any state, if no company had more than 50% *market share*, then in at least how many states did company A sell cement?

(1) 4
(2) 5
(3) 6
(4) 3

53. If in all the states in which company E was present, it had a *market share* of at least 25%, in at most how many states did company E sell cement?

(1) 9
(2) 8
(3) 7
(4) 6

54. The number of companies which had sales in more than two states, is at least

(1) 1

(2) 2
(3) 3
(4) 4

DIRECTIONS *for questions 55 to 57:* **Answer the questions on the basis of the information given below.**

The following table gives the percentage of marks scored by three students - Ramu, Rakesh and Rohan, in five subjects. The maximum mark in two of the five subjects is 50 and the maximum mark in the other subjects is 100. Further, the marks scored by any person in any subject need not be an integer.

Subject	Student		
	Ramu	Rakesh	Rohan
A	80%	84%	52%
B	68%	85%	88%
C	56%	72%	76%
D	92%	63%	60%
E	76%	66%	80%

55. If it is known that Rohan had the highest total marks among the three, then how many marks did Ramu score in total?

(1) 372
(2) 286
(3) 284
(4) 312
(5) Cannot be determined

56. If Ramu scored 72% marks in total, then for which two subjects was the maximum mark 50?

(1) A and E
(2) B and D
(3) A and B
(4) C and E
(5) None of these

57. Which two subjects had the maximum mark as 50, if it is known that Rakesh had the highest total marks among the three?

(1) A and E
(2) B and D
(3) C and D

DIRECTIONS *for questions 58 to 61:* **Answer the questions on the basis of the information given below.**

Each person, out of the 200 people in a certain community, speaks at least one language among English, Spanish and French. 37% of the people speak at least two of the three languages, while 15% of the people speak only Spanish. It was also known that 23% of the people speak English and French, while 20% speak English and Spanish and 12% speak all the three languages.

58. If the number of people who speak English is less than that of those who speak French, at least what percentage of the people do not speak English?

(1) 46.50%
(2) 41.50%
(3) 39.50%
(4) 37.50%
(5) 42.50%

59. If the number of people who speak Spanish is less than that of those who speak English, then at most what percentage of the people speak French but not Spanish?

(1) 46.50%
(2) 48.50%
(3) 53.50%
(4) 50.50%
(5) None of these

60. If the total number of people who speak English is twice that of those who speak French, what percentage of the people speak English or Spanish?

 (1) 82%
 (2) 84%
 (3) 87%
 (4) 93%
 (5) 91%

61. If the number of people who speak French or Spanish is 144. Then what is the ratio of number of people who speak Spanish to that of English?

(1) 41 : 59
(2) 59 : 41
(3) 58 : 41
(4) 41 : 58

DIRECTIONS *for questions 62 and 64:* Answer the questions independently of each other.

62. It is believed by some cardiologists that a mechanical pump can be used as an artificial heart for those who suffer from a heart attack. Some experts however are in favour of only a human heart being used for patients who need a heart transplant.

Which of the following most seriously undermines the recommendation of mechanical pumps as an artificial heart?

(1) A heart transplant may not help patients who do not restrict the amount of salt in their diet.

(2) A major part of treatment for heart aliments is the post-operative regimen that results in strengthening of heart tissue and muscle.

(3) Only the human heart secretes a particular hormone that regulates blood pressure in the patient recuperating from a heart attack.

(4) There aren't many cardiologists who understand how a mechanical pump could be made to work efficiently.

(5) What it is that enables the body to accept an artificial heart is yet to be understood.

63. Szymanski suggests that the problem of racism in football may be present even today. He begins by verifying an earlier hypothesis that clubs' wage bills explain 90% of their performance. Thus, if players' salaries were to be only based on their abilities, clubs that spend more should finish higher. If there is pay discrimination against some group of players - fewer teams bidding for black players thus lowering the salaries for blacks with the same ability as whites - that neat relation may no longer hold. He concludes that certain clubs seem to have achieved much less than what they could have, by not recruiting black players.

Which one of the following findings would best support Szymanski's conclusion?

(1) Certain clubs took advantage of the situation by hiring above-average shares of black player

(1) Clubs hired white players at relatively high wages and did not show proportionately good performance.

(2) During the study period, clubs in towns with a history of discrimination against blacks, under-performed relative to their wage bills.

(3) Clubs in one region, which had higher proportions of black players had significantly lower wage bills than their counterparts in another region which had predominantly white players.

(4) Black players are as good as white players, in any circumstances and conditions.

64. Ashok, Akash, Akshay, Amar and Anoop are at a Party and are having a cocktail each. Each cocktail is made using exactly two drinks from among -Whisky, Brandy, Rum, Gin and Vodka. The cocktails are named A, B, C, D and E. Whisky and Vodka cannot be mixed together. Brandy cannot be mixed with Rum or Vodka. Amar takes drinks made only from among Brandy, Rum, Gin and Vodka. Akash's cocktail is made by mixing Whisky and Brandy. Ashok does not take anything containing Whisky, Rum or Vodka. Akash, Ashok and Anoop are having cocktails A, B and C respectively. Cocktails A and E have exactly one drink in common. Only cocktails C and D are made from the same two drinks. The cocktail of Akshay can contain

(1) Gin and Rum
(2) Rum and Vodkha
(3) Gin and Whisky
(4) Gin and Brandy
(5) None of these

DIRECTIONS *for questions 65 and 66:* Answer the questions on the basis of the information given below.

In a Hockey Tournament, exactly three teams participated. Each team played exactly one match with the other two teams. The total number of goals scored by the teams in the three matches played was 9, 7 and 5, not necessarily in any specific order. At the end of the tournament, the teams with the highest, second highest and least number of matches won are declared as the Winner, the Runner-up and the Loser, respectively.

In the tournament, the total number of goals scored by the Winner is distinctly the highest and the Loser scored three goals less than the Winner.

The average goal difference (the difference between the number of goals scored by the two teams in a match) in the tournament was 1.

58. What is the total number of goals scored by the Runner-up in the tournament?

(1) 8
(2) 7
(3) 6
(4) 4
(5) 5

59. If the 12th goal in the tournament, made during one of the matches, made one of the teams win that match, then it could have been scored by
I) The Winner over the Loser
II) The Runner-up over the Loser
III) The Winner over the Runner-up

(1) Only I or II
(2) Only II or III
(3) Only I or III
(4) Only I
(5) Cannot be determined

Verbal Ability

DIRECTIONS *for question 67:* **The following question has a set of five 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').**

- **Judgements, 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').**

Select the answer option that best describes the set of statements.

67. (A) The renewed corporate interest in power is welcome, given the huge investment backlog in the vexed sector and the routine revenue leakages.
(B) Reportedly, industrial houses like Reliance Industries and the Aditya Birla Group are keen to foray into power equipment manufacture.
(C) In tandem, we need proactive policy to wipe out continuing losses of state power utilities, and regular disclosure of SEB finances.
(D) Of late, the tendency has been to clamp up on the huge annual losses of power utilities - the latest Economic Survey like the previous one is mum on losses, subsidies and plain theft of power; instead we have some pious intentions to gather 'baseline data' and use information technology application for accounting and auditing power distribution.
(E) We do need to step up IT for meter reading, billing and collections, of course, but in parallel, what is essential indeed vital, is improved governance in power delivery and follow through.

(1) JFIFJ
(2) IJFJJ
(3) FJJIF
(4) JFJIJ

DIRECTIONS *for questions 68 and 69:* **In each question, four different ways of presenting an idea are given. Choose the one that conforms most closely to standard English usage.**

68. (A) The inflexibility of the laws, which prevent them from being adapted for emergencies, may in certain cases render them pernicious and thereby cause the ruin of the state in a time of crisis.

(B) The inflexibility of the laws, which prevents them from being adapted for emergencies may in certain cases render them pernicious, thereby causes the ruin of the state in a time of crisis.

(C) The inflexibility of the laws, which prevents them from being adapted to emergencies, may in certain cases render them pernicious, and thereby cause the ruin of the state in a time of crisis.

(D) The inflexibility of the laws, which prevents them from being adapted for emergencies may in certain cases render them pernicious, and thereby causing the ruin of the state in a time of crisis.

(1) A
(2) B
(3) C
(4) D

69. (A) Human talents vary considerably, within a fixed framework that is characteristic of the species, and that permits ample scope for creative work, including the creative work of appreciating the achievements of others.

(B) Human talents vary considerably within a fixed framework that is characteristic to the species, and which permits ample scope for creative work, including the creative work of appreciating the achievements of others.

(C) Human talents vary considerably, within a fixed framework that is characteristic for the species, and that permits ample scope for creative work, including the creative work of appreciating achievements of others.

(D) Human talents vary considerably, within a fixed framework that is characteristic of the species, and which permits ample scope for creative work, including the creative work of appreciating achievements of others.

(1) A
(2) B
(3) C
(4) D

DIRECTIONS *for question 70:* In the following question, there are five sentences/paragraphs. The sentence/ paragraph labelled A is in its correct place. The four that follow are labelled B, C, D and E, and need to be arranged in the logical order to form a coherent paragraph/ passage. From the given options, choose the most appropriate option.

71. (A) The driving force of the 'nuclear renaissance' is a claim that nuclear power, once up and running, is a carbon-free energy source. The assertion is that a functioning nuclear reactor creates no greenhouse gases and thus contributes nothing to global warming or chaotic weather.

(B) The frequently repeated notion that nuclear power is a carbon-free energy source is simply untrue.

(C) At every stage of the cycle greenhouse gases are released into the atmosphere from burning diesel, manufacturing steel and cement and, in the circumpolar regions of the planet, by disturbance of the tundra which releases large amounts of methane, a particularly potent greenhouse gas.

(D) That part is almost true, but the claim ignores the total environmental impact of nuclear energy, which includes a long and complicated chain of events known in the industry as the 'nuclear cycle' which begins with finding, mining, milling and enriching uranium, then spans through plant construction and power generation to the reprocessing and eventual storage of nuclear

waste, all of which creates tons of CO_2.

(E) Even the claim that a functioning nuclear power facility is co2-free is challenged by the fact that operating plant requires an external power source to run, and that electricity is almost certain to come from a fossil-fuelled plant.

(1) DCEB
(2) EBCD
(3) DEBC
(4) EDCB

DIRECTIONS *for questions 72 and 73:* Each of the following questions has a paragraph from which the last sentence has been deleted. From the given options, choose the one that completes the paragraph in the most <u>appropriate</u> way.

72. Jawaharlal Nehru seemed an unlikely candidate to lead India towards its vision. Under the cotton Khadi he wore in deference to the dictates of Congress, he remained the quintessential English gentleman. In a land of mysteries, he was a cool rationalist. The mind that had exulted in the discovery of science at Cambridge never ceased to be appalled by his fellow Indians who refused to stir from their homes on days proclaimed inauspicious by their favourite astrologers. He was a publicly declared agnostic in the most intensely spiritual area in the world, and he never ceased to proclaim the horror the word 'religion' inspired in him. Nehru despised India's priests, her sadhus, her chanting monks and pious 'skerkhs'.

(1) And yet, the India of those sadhus and the superstition-haunted masses had accepted Nehru.
(2) They had only served, he felt, to impede her progress.
(3) The Mahatma had made it clear that it was on his shoulders that he wished his mantle to fall.

(4) Nehru's heart told him to follow the Mahatma and his heart, he would later admit, had been right.

73. Birth rates have fallen dramatically - and voluntarily. Coercive birth control, including paying people not to have babies, was discredited and abandoned decades ago. Nearly two-thirds of the couples in poor countries now use birth control, and not because some patriarchal westerner told them to. In the 1970s, the government of Bangladesh offered people in the Matlals region low-cost contraceptive supplies and advice. Birth rates promptly fell well below those of neighbouring regions. So Bangladesh extended the service nationally and its birth rate plummeted from six children per woman to three.

(1) The 'population bomb' has already gone off.

(2) Given the choice, people want fewer children.

(3) Governments want fewer children since their own life expectancy falls with rising numbers.

(4) Even when birth rates fall, there is a lag which means population keeps growing far decades until birth and death rates even out.

DIRECTIONS *for questions 74 and 75:* In each question, there are five sentences. Each sentence has pairs of words/phrases that are italicised and highlighted. From the italicised and highlighted word(s)/phrase(s), select the most appropriate word(s)/phrase(s) to form correct sentences. Then, from the options given, choose the best one.

74. (i) The municipal *councillor* (A) / *counsellor* (B) promised to improve civic amenities in the suburbs.
(ii) Jean's *adopted* (A) / *adoptive* (B) patents dote on her and cater to her every whim.
(iii) The *venal* (A) / *venial* (B) official was caught red - handed accepting bribe.
(iv) We have now shifted our residence *farther* (A) / *further* (B) away from the main city.
(v) She claims to be of aristocratic *dissent* (A) / *descent* (B).

(1) AAABB

(2) BBABB

(3) ABBAB

(4) ABAAB

75. (i) While evacuating people from the flood ravaged areas *precedence* (A) / *precedent* (B) was given to women and children.
(ii) The best way to reach the summit is by trekking up the hill, *alternately* (A) / *alternatively* (B) you can go on horse back
(iii) His impeccable manners perfectly *complimented* (A) / *complemented* (B) his polished looks and fashionable attire.
(iv) There has been a *noticeable* (A) / *notable* (B) improvement in Tarun's academic performance lately.

(v) You must be *discreet* (A) / *discrete* (B) about your plans

  (1) AABAB
  (2) ABBBB
  (3) BABAA
  (4) ABBAA

DIRECTIONS *for questions 76 and 77:* In each of the following questions, the word at the top is used in four different ways, numbered 1 to 4. Choose the option in which the usage of the word is INCORRECT or INAPPROPRIATE.

76. PULL

(1) Pull aside the curtains and let in some fresh air.
(2) I decided to pull away from the venture due to differences of opinion with my partners.
(3) Being a charismatic leader that he is, he can certainly pull the crowds.
(4) The municipal corporation has decided to pull down all illegal constructions in the city.

77. SHADE

(1) Nina's bedroom was painted in a soft shade of pink.
(2) Abdul is a dubious character who is suspected of being involved in
(3) several shady deals.
(4) The weary traveller rested for a while in the shade of a tree.
(5) The people in the strife torn region have been living in the shade of fear for several years.

DIRECTIONS *for questions 78 to 80:* Each question presents a paragraph followed by 5 statements marked A to E. Read all and identify the individual statements as:

  L - if the statement can be logically concluded from the paragraph.
(5)- if the statement presents a thought or idea contrary to that presented in the paragraph.
F - if the statement is a far-fetched conclusion or inference from the paragraph.
I - if the statement is irrelevant to the context of the para or is not L,
(6)   or F.

Select the answer option that best describes the set of 5 statements.

78. Decision makers tend to have distinctive styles. One such style is for the decision maker to seek the widest possible input from advisers and to explore alternatives while making up his or her mind. In fact, decision makers of this sort will often argue vigorously for a particular idea, emphasizing its strong points and downplaying its weaknesses, not because they actually believe in the idea but because they want to see if their real reservations about it are idiosyncratic or are held independently by their advisers.

(5) If certain decision makers' statements are quoted accurately and at length, the content of the quote could nonetheless be greatly at variance with the decision eventually made.

(6) Certain decision makers do not know which ideas they should believe in until after they have presented a variety of ideas to their advisers.

(7) If certain decision makers dismiss an idea out of hand, it must be because its weaknesses are more pronounced than any strong points it may have.

(8) Certain decision makers proceed in a way that makes it likely that they will frequently decide in favour of those ideas that they convince their advisors of.

(9) If certain decision makers' advisers know the actual beliefs of those they advise, those advisers will give better advice than they would if they did not know those beliefs.

(1) FFICI
(2) FIICI
(3) LFCCI
(4) LFICI
(5) FFCCI

79. Some flowering plant species, entirely dependent on bees for pollination, lure their pollinators with abundant nectar and pollen, which are the only source of food for bees. Often the pollinating species is so highly adapted that it can feed from-and thus pollinate-only a single species of plant. Similarly, some plant species have evolved flowers that only a single species of bee can pollinate-an arrangement that places the plant species at great risk of extinction. If careless applications of pesticides destroy the pollinating bee species, the plant species itself can no longer reproduce.

(v) The total extinction of some plants would force certain bees to mutate so as to adapt to plants that remain.

(vi) If the sole pollinator of a certain plant species is in no danger of extinction, the plant species it pollinates is also unlikely to become extinct.

(vii) Some bees are able to gather pollen and nectar from any species of plant.

(viii) The blossoms of most species of flowering plants attract some species of bees and do not attract others.

(ix) The total destruction of the habitat of some plant species could cause some bee species to become extinct.

(1) FLCFL
(2) CLIIL
(3) FLCIL
(4) CLCFL
(5) ILCFL

80. If the regulation of computer networks is to be modelled on past legislation, then its model must be either legislation regulating a telephone system or else legislation regulating a public broadcasting service. If the telephone model is used, computer networks will be held responsible only for ensuring that messages

get transmitted. If the public broadcast model is used, computer networks will additionally be responsible for the content of those messages. Yet a computer network serves both these sorts of functions: it can serve as a private message service or as a publicly accessible information service. Thus neither of these models can, through replication, be appropriate for computer networks.

(5) Regulation of computer networks is required in order to ensure the privacy of the messages transmitted through such networks.

(6) The regulation of computer networks should not be modelled on any past legislation.

(7) Computer networks were developed by being modelled on both telephone systems and television networks.

(8) Legislators who do not have extensive experience with computers should not attempt to write legislation regulating computer networks.

(9) Legislation to regulate computer networks merely needs to duplicate those that regulate telephone systems and public broadcasting systems, read together.

(1) LFIFF
(2) LLIFF
(3) LFIFC
(4) FLCLF
(5) IFIFC

DIRECTIONS *for questions 81 to 83:* Each statement has a part missing. Choose the best option, from those given below the statement, to make up the missing part.

81. Our misapprehension _____ has been afflicted.

(1) about the nature of language has occasioned a greater waste of time, effort and genius, than the other mistakes and delusions with which humanity
(2) of the nature of language has occasioned a greater waste of time, effort, and genius than all the other mistakes and delusions with which humanity
(3) with the nature of language occasioned a greater waste of time, effort and genius, than all the other mistakes and delusions with which humanity
(4) of the nature of language had occasioned a greater waste of time and genius, than all the other mistakes and delusions through which humanity
(5) with the nature of language has occasioned a greater waste of time, and effort, and genius, than the other mistakes and delusions with which humanity

82. The sheer grandeur of the colosseum - the iconic face of Rome today - even in a ruined state _____, the favourite blood sport of the Roman nobility
(1) might have taken one's breath away would it not be for the knowledge that this was the venue to many a gruesome gladiatorial fights
(2) might take one's breath away had it not been for the knowledge that this was the venue of many a gruesome gladiatorial fights
(3) might have taken one's breath away had it not been for the knowledge that this was the venue of many a gruesome gladiatorial fight

(4) might take one's breath away has it not been for the knowledge that this was the venue of many a gruesome gladiatorial fight

(5) might have taken one's breath away would it not be for the knowledge that this was the venue to many a gruesome gladiatorial fight

83. Evolutionary game theory is _____ about why human cognitive and emotional traits developed as they did.

(1) is not just useful in providing an explanation for how social instincts may have developed in primates and man but also in telling something

(2) is useful not just in providing an explanation of how social instincts may have developed in primates and man but also in telling something

(3) is useful not in just providing an explanation for how social instincts may have developed in primates and man but also in telling us something

(4) is useful not just in providing an explanation for how social instincts may have developed in primates and man but also in telling us something

(5) is useful not just in providing an explanation on how social instincts may have developed in primates and man but also in telling something

Directions for questions 84 and 85: In the following questions, a word is given at the top. From the given answer choices, select an appropriate synonym for this word

84. Prolong
(1) Protract
(2) Inquire
(3) Relax
(4) Wait

85. Solemn
(1) Hilarious
(2) Detrimental
(3) Naive
(4) Sombre

Directions for questions 86 and 87: In the following questions, a word is given at the top. From the given answer choices, select an appropriate antonym for this word

86. Valor
(1) Impuissance
(2) Counterfeit
(3) Plunge
(4) Profound

87. Measly
(1) Rapidly
(2) Liberal
(3) Likely
(4) Gorgeously

DIRECTIONS *for questions 88 to 90:* Read the following passage and answer the questions that follow it.

Organic food is a two-billion pound industry grown fat on the back of celebrity endorsement and a well-heeled middle class seduced by claims that it is good for health. Prince Charles is one of its most enthusiastic and pro-active promoters. Not content with simply consuming it, he has his own lucrative line in overpriced organic products including biscuits which taste more like chalk.

But now questions are being raised about some of the basic assumptions that have contributed to the popularity of organic food and the phenomenal growth of this sector in the past decade. People are asking: is organic food really worth the price which is often three times more than that of normal food?

This follows new research by a group of British scientists who found that organic food offered no extra benefit over the ordinary cheaper foodstuff. In a controversial report, experts from the London School of Hygiene and Tropical Medicine say there is no evidence that organic food is more nutritional or healthier than food produced using fertilizers. For example, the expensive free-range chicken (sold as a "premium" product) has the same nutritional value as the factory-farmed chicken; and similarly, there is no difference between organic and non-organic vegetables or dairy produce.

The research, based on data published over the past 50 years and said to be the most comprehensive review ever of the relative benefits of organic food, strikes at the very heart of what has been portrayed by campaigners as its USP - that it is healthier than conventional food and therefore worth paying a "bit "extra.

Dr. Alan Dangour, who led the study, was unambiguous in rejecting claims made for organic food. "Looking at all of the studies published in the last 50 years, we have concluded that there's no good evidence that consumption of organic food is beneficial to health based on the nutrient content," he said.

The report, commissioned by the government's Food Standards Agency and published in the *American Journal of Clinical Nutrition*, concluded that "organically and conventionally produced crops and livestock products are broadly comparable in their nutrient content." A "small number of differences" were noted but these were "unlikely to be of any public health relevance."

In a pointed reference to the hype over the supposed benefits of organic food, the FSA said the research was aimed at helping people make "informed choices" about what they ate. In other words, it was concerned that the high-profile campaign for organic food, dressed up as an ethical issue, was preventing people from making "informed choices" and they were being sold things on false premises.

"Ensuring people have accurate information is absolutely essential in allowing us all to more informed choices about the food we eat. This study does not mean that people should not eat organic food. What it shows is that there is little, if any, nutritional difference

between organic and conventionally produced food and that there is no evidence of additional health benefits from eating organic food," said Gill Fine, FSA's Director of Consumer Choice and Dietary Health.

In the organic food circles, the report has caused fury with campaigners alleging that it is all part of a "cancerous conspiracy" to defame the organic food movement. Newspapers have been full of angry letters denouncing the report as "selective," "misleading" and "limited."

The Soil Association, which campaigns for "planet-friendly organic food and farming," is furious that the research crucially ignored the presence of higher pesticide residues in conventional food. Some have defended organic food arguing that it is not about health alone but also involves wider environmental and social issues.

However, even those who agree that the report may be "flawed" in some respects believe that it is an important contribution to the debate on organic food.

"Yet the report - for all its alleged flaws - is an important one. For a start, it is certainly not the work of dogmatic and intractably hostile opponents of the causeD In fact, it raises key global issuesD After all, if organic food is no more beneficial in terms of nutrition than other, standard foodstuffs, why should we pay excessive price to eat the stuff? Why devote more land to its production," asked Robin McKie, Science Editor of *The Observer*.

There is also a view that the fad for organic food is a bit of a class thing - something to do with the idea that if something is expensive it is also good. So, a Marks & Spencer cheese sandwich is supposed to taste better than a similar sandwich at Subway next door; *everything* at Harrods is out of this world; and similarly you don't know what you are missing if organic food is not your preferred choice. There is said to be a whiff of snobbery about buying into an expensive lifestyle choice. Will science bring them down to earth?

88.   All of the following are the author's views on organic food EXCEPT

(1)   It is insipid
(2)   It is very costly
(3)   It is not more nutritious than conventional food
(4)   It is patronized by the rich.

89. Which of the following factors/aspects, related to organic food, has the result of the FSA study primarily called into question?

(1) The nutritional value
(2) The health benefits
(3) The celebrity endorsement
(4) The presence of pesticides

90. According to the passage, defenders of organic food are of the opinion that the FSA study

(1) is not representative and scientific.
(2) has been promoted by those who have vested interest in conventional food.
(3) is flawed and has been projected as an ethical issue.
(4) is not balanced and has not taken a comprehensive view of the issue.

DIRECTIONS *for questions 91 to 93:* **Read the following passage and answer the questions that follow it. Some artists go out in a blaze of glory. Pierre-Auguste Renior went out in a blaze of kitsch. At least, that's the received opinion about the work of his final decades: all those pillowy nudes, sunning their abundant selves in dappled glades; all those peachy girls, strumming guitars and idling in bourgeois parlors; all that pink. In the long twilight of his career, the old man found his way to a kissable classicism that modern eyes can find awfully hard to take.**

All the same, the Renoir of this period - the three very productive decades before his death in 1919 at the age of 78 - fascinated some of the chief figures of modernism. Picasso was on board; his thick - limbed 'neoclassical' women from the 1920 are indebted to Renior. So was Matisse, who had one eye on Renoir's Orientalist dress-up fantasies like the Concert, with its flattened space and overall patterning, when he produced his odalisques. Given that so much of late Renior seems saccharine and semi comical to us, is it still possible to see what made it modern to them?

Yes and no. To understand the Renoir in the 20th Century you have to remember that before he became a semiclassicist, he was a consummate Impressionist. You need to picture him in 1874, 33 years old, painting side by side with Monet in Argenteuil, teasing out the new possibilities of sketchy brushwork to capture fleeting light as it fell across people and things in an indisputably modern world.

But in the decade that followed, Renoir became one of the movement's first apostates. Impressionism affected many people in the 19th century in much the way the internet does now. It both charmed and unnerved them. It brought to painting a novel immediacy, but it also gave back a world that felt weightless and unstable. What we now call post - Impressionism was the inevitable by-product of that anxiety. Artists like Seurat and Gauguin searched for an art that owed nothing to the stale models of academicism but possessed the substance and authority that Impressionism had let fall away.

For Renoir, a turning point came during his honeymoon to Rome and Naples in 1881. Face to face with the firm outlines of Raphael and the musculature of Michelangelo, he lost faith in his flickering sunbeams. He returned to France determined to find his way to lucid, distinct forms in an art that reached for the eternal, not the momentary. By the later years of that decade, Renoir had lost his taste for the modern world anyway. As for modern women, in 1888 he could write, "I consider that women who are authors, lawyers

and politicians are monsters". ("The woman who is an artist," he added graciously, "is merely ridiculous.") Ah, but the woman who is a goddess - or at least harks back to one - that's different matter. It would be Renoir's aim to reconfigure the female nude in a way that would convey the spirit of the classical world without classical trappings. Set in "timeless" outdoor settings, these women by their weight and scale and serenity alone - along with their often recognizably classical poses - would point back to antiquity.

For a time, Renior worked with figures so strongly outlined that they could have been put down by Ingres with a jackhammer. By 1892, he had drifted back toward a fluctuating impressionist brushstroke. Firmly contoured or flickering, his softly scalped women are as full-bodied as Doric columns. This was one of the qualities that caught Picasso's eye, especially after his first trip to Italy, in 1917. He would assimilate Renoir along-side his own sources in Iberian sculpture and elsewhere to come up with a frankly more powerful, even haunting, amalgam of the antique and the modern in paintings like Woman in a White Hat.

Renior was most valuable as a stepping - stone for artists making more potent use of the ideas he was developing. The heart of the problem is the challenge. Renoir set for himself: to reconcile classical and Renaissance models with the 18th century French painters he loved. To synthesize the force and clarity of classicism with the intimacy and charm of the Rococo is a nearly impossible trick. How do you cross the power of Phidias with the delicacy of Fragonard? The answer: at your own risk - especially the risk of admitting into your work the weaknesses of the Rococo. It's fine line between charming and insipid, and 18th century French painters crossed it all the time. So did Renoir.

91. All of the following are true in light of the passage EXCEPT.

(1) Fragonard is an 18th century artist.

(2) Picasso combined classicism and modernism in 'Woman in a white Hat".

(3) Renoir was a semi - Classicist, who became an Impressionist.

(4) Gauguin suffered from post - Impressionism anxiety.

92. We can infer from the passage that the word 'odalisques' means

(1) pillars
(2) landscapes
(3) figures
(4) women

93. The passage suggests that

(1) Renoir was greatly misunderstood in his lifetime.
(2) Classicism and modernism don't go together.
(3) Renoir's later work appealed to modern tastes.
(4) Renoir's artistic appeal waned in the twilight of his career.

DIRECTIONS *for questions 94 to 96:* **Read the following passage and answer the questions that follow it.**

Humans have a basic need to perceive themselves as part of a grand scheme, of a natural order that has a deeper significance and greater endurance than the petty affairs of daily life. The incongruous mismatch between the futility of the human condition and the brooding majesty of the cosmos compels people to seek a transcendent meaning to underpin their fragile existence.

For thousands of years this broader context was provided by tribal mythology and storytelling. The transporting qualities of those narratives gave human beings a crucial spiritual anchor. All cultures lay claim to haunting myths of other-worldliness: from the dreaming of the Australian Aborigines or the Chronicles of Narnia, from the Nirvana of Buddhism to the Christian Kingdom of Heaven. Over time, the humble campfire stories morphed into the splendour and ritual of organized religion and the great works of drama and literature.

Even in our secular age, where many societies have evolved to a post-religious phase, people still have unfulfilled spiritual yearnings. A project with the scope and profundity of SETI (search for extra-terrestrial intelligence) cannot be divorced from this wider cultural context, for it too offers us the compelling promise that this could happen any day soon. As writer David Brin has pointed out, 'contact with advanced alien civilizations may carry much the same transcendental or hopeful significance as any more traditional notion of "salvation from above". I have argued that if we did make contact with an advanced extraterrestrial community, the entities with which we would be dealing would approach godlike status in our eyes. Certainly they would be more godlike than humanlike; indeed, their powers would be greater than those attributed to most gods in human history.'

So is SETI itself in danger of becoming a latter day religion? Science fiction writer Michael Crichton thought so. He said: "Faith is defined as the firm belief in something for which there is no proof," he explained. "The belief that there are other life forms in the universe

is a matter of faith. There is not a single shred of evidence for any other life forms, and in forty years of searching, none has been discovered." Writer Margaret Wertheim has studied how the concept of space and its inhabitants has evolved over several centuries. She traces the modern notion of aliens to Renaissance writers such as the Roman Catholic Cardinal Nichols of Cusa, who considered the status of man in the universe in relation to celestial beings such as angels.

With the arrival of the scientific age, speculations about alien beings passed from theologians to science fiction writers, but the spiritual dimension remained just below the surface. Occasionally it is made explicit, as in Olaf Stapledon's Star Maker, David Lindsay's A Voyage to Arcturus, or Steven Spielberg's Close Encounters of the Third Kind, which is strongly reminiscent of John Bunyan's A Pilgrim's Progress. These are iconic images that resonate deeply with the human psyche, and shadow the scientific quest to discover intelligent life beyond EarthD

94. It can be inferred from the passage that, 'Close Encounters of the Third Kind'

(1) is a modern, scientific version of John Bunyan's Pilgrim's Progress.

(2) explores the spiritual unknown in the scientific quest to discover the extraterrestrial.

(3) is the work of a theologian-turned science fictionist.

(4) speculates on intelligent life in outer space and reflects vivid spiritual overtones.

95. Which of the following statements reflects or captures the author's view on the search for extraterrestrial intelligence?

(1) It is a vain attempt by man to underpin his fragile existence.

(2) It is in danger of becoming a latter day religion.

(3) Were the search to yield positive results, man would accord those creatures super god status.

(4) The belief that there are aliens in the universe springs from enormous faith and the pursuit reflects man's spiritual urge.

96. Great literary works, according to the passage

(1) had their origins in the spiritual age.

(2) evolved from tribal tales.

(3) were a product of the Renaissance.

(4) Dwelt on the spiritual

DIRECTIONS *for questions 97 to 100:* Read the following passage and answer the questions that follow it.

Last evening, on the longest day of the year, I took a walk in a meadow near my home. At the edge of the meadow a path opened in to the woods, and I followed it perhaps a hundred yards to the bank of a small stream where I rested on a rock and watched the brook flow. Then I walked back.

Nothing spectacular happened. No large animal jumped out to demonstrate its majesty. The flora was beautiful but unremarkable: buttercups, Queen Anne's lace, daisies, lupins. The sky didn't crackle with summer lightning; the sunset was only streaks of purples, some rosy glow on the underbellies of the clouds. A few mosquitoes made their presence known. It was simply a lovely night.

And simply the sort of scene that we have evolved with for hundreds of thousands of years, that has made us who we are, that we can't be fully human, or at least fully sane, without. The sort of scene whose absence in our lives is now making us slowly crazy. If there is a pertinent modern question, it is "How much is enough?" The consumer societies we have created posit that the only possible answer is "More". And so in pursuit of more we have turned ourselves into tubby folk, raised the temperature of the planet one degree with a further five degrees in prospect, countenanced the ever deeper gulfs between rich and poor, and so on. And in the process made ourselves == happy?

But say you're in a meadow, surrounded by wild flowers. Do you find yourself thinking, "They could do with some more wild flowers over there"? Do you glance up at the mountains on the horizon and think, "Some more mountains would be nice"? Do you lie on the rock by the brook thinking, "This brook needs more rocks"? Does the robin in that tree chide herself for not tripling the size of her nest? I think not. Nature schools us in sufficiency - its aesthetics and its economy demonstrate 'enoughness' at every turn. Time moves circularly through the natural world - next spring there will be wild flowers again. Not more wild flowers: second quarter output for 2010 will show no year-on-year gain. Growth only replaces, since the planet is already accomplishing all the photosynthesis that's possible. It offers the great lesson of being simultaneously abundant and finite and Interdependent, too. The emergent science of ecology is easily summed up: everything's connected. Field biologists using sensitive detectors have discovered that the needles of trees near Alaskan rivers owe their nitrogen to the carcasses of salmon that die along the banks, the same salmon that feed the bears whose pawing aerates the soil
We know now that this is true, but interconnection is anathema to a consumer notion of the world, where each of us is useful precisely to the degree that we consider ourselves the centre of everything.
We believe that pleasure comes from being big, outsized, immortal; now our zealots imagine genetically engineering us for greater greatness. But the testimony of the rest of creation is that there's something to be said for fitting in.

And because of that, the natural world offers us a way to think about dying, the chief craziness for the only species that can anticipate its

own demise. If one is a small part of something large, if that something goes on forever, and if it is full of beauty and meaning, then dying seems less shocking. Which undermines about half the reason for being a dutiful consumer, for holding ageing forever at bay. Six months from now, on the shortest night of the year, this field will be under two feet of snow. Most of what I can see will be dead or dormant. And six months after that it will be here again as it is tonight.

Advertising, hyper consumerism, ultra-individualism - these are designed to make you crazy. Nature, like close-knit human community, is designed to help you stay sane. You needn't be in the wilderness to feel in balm: a park, a container garden on the patio, a pet dog, a night sky, a rainstorm will do. For free.

97. In this passage, the author primarily

(5) reminisces of the times when Nature guided our way of life.

(6) criticises man for exploiting Nature and ruining the environment.

(7) underlines the need for man to adopt Nature's way of life.

(8) warns mankind that hyper consumerism and ultra-individualism will wreck peace on earth.

(9) advises man to slow down his pace of activity and follow Nature's path.

98. What does the author want to convey when he says "second quarter output for 2010 will show no year-on-year gain"?

(1) There is a limit to what Nature can do.
(2) Man can't match Nature in any activity.
(3) Comparisons have no place in the world of Nature.
(4) Growth in Nature is relative and not a certainty.
(5) Nature's bounty is immeasurable.

99. According to the passage, nature teaches us to be

(1) self-sufficient.
(2) contented.
(3) empathetic.
(4) generous.
(5) useful.

100. Which of the following options is a possible conclusion to the unfinished sentence in the fifth para?

(1) /. fixes the nitrogen content.
(2) /. supplies the required nitrogen to the vegetation in the Alaskan region.
(3) /. nurtures the needles of trees.
(4) /. enriches the flora and fauna in the Alaskan plains.
(5) /. controls the levels of nitrogen used by trees in the Alaskan region.