

CAT Diagnostic Test

Section I - 50 Questions

Questions 1 to 5: Use the information given in the passage below.

A joint project by the State and Central government is being undertaken in the state of TamilNadu. It is agreed that the representatives work in small committees of three, with two representatives of the Central government. It was also agreed that no committee be represented by members from the same department. The central government was represented by the following civil servants: J, who is Joint Secretary of Finance, K, who is the chairman of the Planning Commission, and L, who is Principal Secretary, Ministry of Education. The State appointed the following: M, who heads the State Planning Commission, N, who is the Accountant General, O and P who are under secretaries in the Department of Finance.

1. Which of the following represents a properly composed committee?
 (1) K, L, N (2) J, K, L (3) J, K, M (4) O, M, K
2. Which of the following may serve with P?
 (1) K and M (2) M and L (3) K and L (4) J and K
3. Which of the following must be true?
 I If J cannot serve on a committee, then M cannot be assigned to that committee.
 II If O does not serve on a committee, then J will be serving on that committee.
 (1) I only (2) II only (3) I and II (4) Neither I nor II
4. If L is not available for service, which of the following must be on the committee?
 (1) M and J (2) N and J (3) O and K (4) None of these
5. Which of the following must be true?
 I N and O never serve on the same committee.
 II When N serves in a committee, J will serve on the same committee.
 (1) I only (2) II only (3) I and II (4) Neither I nor II

Questions 6 to 9: Use the information provided in the table below.

State	Population ('000)	Area (1000 sq.km)
1	2500	35
2	3625	47
3	1725	28
4	6600	75
5	4213	42
6	2245	19
7	1675	25

6. The state with the highest population density is:
 (1) 1 (2) 4 (3) 5 (4) 6
7. The state with the lowest population density is:
 (1) 1 (2) 2 (3) 3 (4) 7
8. For the seven states, the average population density is:
 (1) 75 (2) 79 (3) 82 (4) 87
9. The average population of the seven states (in '000s) is:
 (1) 3750 (2) 3200 (3) 4100 (4) 3500

Questions 10 to 13: The table provides production data of various petrochemical products at three different plants for company A. All figures are in '000 tons, per month

Plant	Polyethylene	BoPP	Naphtha
1	753	385	1623
2	815	700	840
3	650	650	1000

10. The maximum total production of all three products (per month) was for which plant, and what was the amount? (In '000 tons)
 (1) Plant 1, 2761 (2) Plant 2, 2355 (3) Plant 1, 2661 (4) Plant 3, 2451
11. The ratio of polyethylene production to that of BoPP (per month) for plant 2 is:
 (1) 1.19 : 1 (2) 1.12 : 1 (3) 1.16 : 1 (4) 1.21 : 1
12. The total BoPP production for all 3 plants per month is: (in '000 tons)
 (1) 1635 (2) 1735 (3) 1835 (4) 1745
13. The ratio of naphtha production to that of BoPP production for plant 1 is:
 (1) 4.06 : 1 (2) 4.34 : 1 (3) 4.16 : 1 (4) 4.22 : 1

Questions 14 to 18: Use the information provided below.

- I> A is north of E and west of C. II> B is north of A and west of F.
 III> D is south and east of A. IV> E is north of F and east of D.
 V> F is north of D and west of A. VI> C is south of F and west of D.

14. Which of the towns mentioned is furthest in the northwest direction?
 (1) A (2) B (3) C (4) D
15. Which of the following must be both north and east of F?
 I A II C III E
 (1) I only (2) III only (3) I and II (4) I and III

16. Which of the following towns must be situated both south and west of at least one other town?
 (1) A and F (2) D and F (3) D, C and F (4) C, D and E
17. Which of the following statements, if true, would make the information in the numbered statements more specific?
 (1) C is north of D. (2) E is north of D (3) C is east of F (4) B is north of F
18. Which of the numbered statements gives information that can be deduced from one or more of the other statements?
 (1) I (2) III (3) VI (4) V

Questions 19 to 24: The price and sales data of 3 products for a company, for five years, are provided below

Year	Product A		Product B		Product C	
	Price(Rs)	Sales(in '00)	Price(Rs)	Sales(in '00)	Price(Rs)	Sales(in '00)
1994	25	16	32	20	52	40
1995	28	17	35	36	50	45
1996	30	17	40	11	45	50
1997	32	15	40	12	50	45
1998	30	25	45	10	52	40

19. The total revenue from the three products for the year 1997 was: (in Rs)
 (1) 3.21 lacs (2) 3.75 lacs (3) 3.32 lacs (4) 3.15 lacs
20. The total revenue from product A for all five years is:(in Rs)
 (1) 1.96 lacs (2) 2.75 lacs (3) 2.62 lacs (4) None of these
21. The revenue from product B was highest in the year:
 (1) 1994 (2) 1995 (3) 1996 (4) 1997
22. The revenue from product C was what % higher than that from product B for the year 1998?
 (1) 36.2% (2) 453% (3) 362% (4) 3620%
23. The total revenues from the three products was what % higher in 1997 than that in 1996?
 (1) 3% (2) 0.3% (3) 0.45% (4) 4.5%
24. The highest revenues from all 3 products for any of the five years was: (in Rs. Lacs)
 (1) 3.76 (2) 3.86 (3) 3.42 (4) 3.99

Questions 25 to 31: The following table provides the statistics of students admitted and the numbers who have passed from four departments of a college. For each year, the number of pass-outs in each department (and the total number who were admitted for that batch for that department originally) are provided.

25. The total number of students who graduated in computer science from years 1995 to 2000 was:
 (1) 205 (2) 195 (3) 185 (4) 175

Grad	Computer Science		Mechanical		Civil		Metallurgical	
Year	Admitted	Passed	Admitted	Passed	Admitted	Passed	Admitted	Passed
1995	35	32	57	55	42	42	45	43
1996	35	31	62	60	44	40	45	44
1997	37	29	65	58	45	42	47	45
1998	35	35	60	60	40	40	44	44
1999	38	35	71	66	44	43	47	40
2000	35	33	75	66	46	42	48	41

26. If the best year is the year in which the average % who passed (as a percentage of those who were admitted to all four courses) , is highest, the best year was:
- (1) 1995 (2) 1997 (3) 1998 (4) 2000
27. For all the six years, the percentage of those passed (as a percentage of those admitted) was how much for Civil?
- (1) 88.6 (2) 95.4 (3) 99.1 (4) 90.5
28. In all six years, how many more Mechanical students graduated than did Metallurgical?
- (1) 111 (2) 110 (3) 109 (4) 108
29. If each of the four is a four-year course, then what was the total number of students admitted to all four courses in 1995?
- (1) 179 (2) 182 (3) 200 (4) 205
30. What was the lowest ratio of “passed” to admits for any year for any department?
- (1) 0.83 (2) 0.72 (3) 0.75 (4) 0.78
31. For 1998, for all four departments together, what was the ratio of “passed” to admits?
- (1) 0.96 (2) 1.0 (3) 0.975 (4) 0.991

Questions 32 to 36: Ajith, Bala, Chandran, Dinu and Easwar are running a 400m race. The statistics are as follows:

- Ajith can run the first 100 meters in 11 seconds, the second 100 metres at 13.5 seconds, the third at 14 seconds, and the last 100 metres at 15 seconds
- Bala can run the first 100 meters at 12 seconds, the second at 13 seconds, the third at 13.5 seconds, and the last 100 metres at 14.5 seconds
- Chandran can the first 100 metres at 11 seconds, the second at 12 seconds, the third at 13 seconds, and the fourth at 15.5 seconds
- Dinu can run the first 100 metres at 10.5 seconds, the second at 12.5 seconds, the third at 14 seconds, and the fourth at 15.5 seconds
- Easwar can run the first 100 metres at 11 seconds, second 100 at 12 seconds, the third at 13 seconds and the last at 14 seconds

32. Who wins the race?

- (1) Bala (2) Chandran (3) Dinu (4) Easwar

33. At the end of 200 meters, the person who is leading is:
 (1) Chandran (2) Dinu (3) Easwar (4) All three
34. At the end of 300 meters, the person who is leading is:
 (1) Dinu (2) Chandran (3) Easwar (4) (2) & (3)
35. If it is a 4*100 meters relay, and if each of the four runners run 100 meters each, the fastest combination is:
 (1) Ajith, Bala, Chandran and Dinu (2) Bala, Chandran, Dinu, Easwar
 (3) Ajith, Chandran, Dinu, Easwar (4) Ajith, Bala, Dinu, Easwar
36. If it is a 2*200 meters relay, in which each of the two runners run 200 meters each, the best combination is:
 (1) Chandran, Easwar (2) Chandran, Dinu (3) Dinu, Easwar (4) All three

Questions 37 to 39: 5 different currencies are considered, and their exchange rates on a particular day are as follows:

The numbers in cells in every horizontal row represent the number of units of currency of the column in consideration that are the equivalent of 1 unit of currency in the row in consideration. For example, in row 1, column 2, 1.55 denotes that 1.55 units of currency B are the equivalent of 1 unit of currency A

Currency	A	B	C	D	E
A	1	1.55	0.95	1.25	1.1
B	A1	1	A2	A3	A4
C	A5	A6	1	A7	A8
D	A9	A10	A11	1	A12
E	A13	A14	A15	A16	1

37. A1 = ?
 (1) 0.75 (2) 1.55 (3) 0.65 (4) None of these
38. A2 = ?
 (1) Can't be determined (2) 0.73 (3) 0.62 (4) 0.75
39. A12 = ?
 (1) 0.75 (2) 0.98 (3) 1.25 (4) 0.88
40. B is twice as old as A but twice younger than F. C is half the age of A but twice the age of D. Which two persons form the pair of the oldest and youngest?
 (1) F and A (2) B and F (3) F and C (4) F and D

Questions 41 to 45: Each of the questions is followed by two statements. You have to decide whether the information provided in the statements is sufficient for answering the question.

- Mark 1. If the question can be answered by using one of the statements alone, but cannot be answered by using the other statement alone.
- Mark 2. If the question can be answered by using either statement alone.
- Mark 3. If the question can be answered by using both statements together, but cannot be answered by using either statement alone.
- Mark 4. If the question cannot be answered even by using both the statements together.

41. How much more salary did Krish get over Bama?
 (A) Krish got a 25% increment on his salary at the end of last fiscal year.
 (B) Bama got a 8% hike on her salary at the end of last fiscal year.
42. Did the transport department suffer a greater loss than the water board on account of the hike in salary of their employees after the fifth pay commission revision at the beginning of this year.
 (A) The transport department which made a profit of Rs.12 crores last year made a loss of Rs.3 crores this year.
 (B) The water board which made a profit of Rs.11 crores last year made a lower profit of Rs.1.2 crores this year.
43. A trader offers a 25% discount on the marked price of a certain product at his shop. What is the usual selling price?
 (A) The amount of profit that he makes after the discount is 20%
 (B) The Rupee value of the discount would have been Rs.10 less if he had offered a discount of 20%.
44. How many quintals of oat will 4 horses and 2 oxen consume in 5 days?
 (A) The average quantity of oat consumed by a horse is a third more than that consumed by an oxen.
 (B) 16 horses consume 14.4 quintals of oat in a month.
45. What day of the week did Shiv join IIM Indore in 2001?
 (A) He joined in the month of July.
 (B) He took CAT on the same date eight months ago on the second Sunday of that month.

Questions 46 to 50: In each question, there are two statements: A and B, either of which can be true or false on the basis of the information given in the table about applicants for a job.

Choose 1 if only A is true

Choose 2 if only B is true

Choose 3 if both A and B are true

Choose 4 if neither A nor B is true

Year	Qualification	Number applied	Number Shortlisted	Number attended interview	Number selected for job
2002	Graduates	6450	5780	4250	415
	Post graduates	3140	2940	2520	520
2003	Graduates	7520	6460	5980	620
	Post graduates	4260	4080	3750	640

46. Statement A: The ratio of the number of graduates who were shortlisted to those who applied in 2002 was higher than the ratio of the graduates who attended the interview to those who were shortlisted in the same year.
- Statement B: The ratio of the graduates who applied for the job to those who attended the interview in 2002 is less than 0.7
47. Statement A: The proportion of post graduates who applied as a percentage of the total applicants (comprising only graduates and post graduates) in the given two years was less than a third.
- Statement B: The growth in the number of postgraduate applicants between 2002 and 2003 was higher than the growth in the number of graduate applicants.
48. Statement A: The ratio of post graduates shortlisted for interview as a percentage of those who applied has been more than 95% in both the years.
- Statement B: The ratio of graduates who attended interview as a percentage of those who were shortlisted in 2003 was more than 90%.
49. Statement A: The percentage of postgraduates who have been selected for the job as a percentage of the postgraduates who attended the interview has been decreasing between the two years.
- Statement B: The percentage growth in the number of graduates shortlisted for interview between the two years is less than the percentage growth in the number of postgraduates shortlisted between the two years.
50. Statement A: The percentage growth in the number of graduates selected between the two years is higher than the percentage growth in the number of postgraduates selected between the two years.
- Statement B: The percentage growth in the total number of applicants recruited between the two years has been in excess of 30%

End of Section I

Sub-section II-A: Number of Questions = 20

Note: Questions 51 to 70 carry one mark each

51. Swetha, a swimming and tennis coach, attended Euclid's class on geometry. There, the professor placed a big ball in the shape of a sphere on the table and alongside it placed a model of a conical tank built by his grandson for his school's project. He said that "the radius of the two objects being equal the relation between the radius of the sphere and the height of the cone is related as....?". Swetha gave a reply. The reply being
- (1) can't determine (2) $h = r$ (3) $h = 4/3r$ (4) $r = 4/3h$
52. $f_1(x) = -f_2(x)$, $f_2(x) = -f_3(x)$ $f_{(n-1)}(x) = -f_n(x)$. If $f_n(x)$ is negative, then $f_1(x)$ and $f_2(x)$ are:
- (1) Positive and negative respectively, if n is odd (2) Negative and positive respectively, if n is even
 (3) Positive and negative respectively, if n is even (4) None of these
53. $G1 = |a| \cdot b \cdot |c| \cdot d \cdot |e| \cdot f \cdot \dots \dots \dots |y| \cdot z$, and $G2 = a \cdot b \cdot c \cdot d \cdot e \cdot f \cdot \dots \dots \dots y \cdot z$
 If $a = (-1)^1$, $b = (-2)^2$, ..., $z = (-26)^{26}$, then
- (1) $G1 = G2$ (2) $G1 = -G2$
 (3) $G1 = (G2)^2$ (4) There is no relationship between $G1$ and $G2$
54. The smallest integer for which the inequality $\frac{(x-5)}{(x^2+5x-14)} > 0$ is satisfied is
- (1) -6 (2) -2 (3) 5 (4) -5
55. The sum of an arithmetic progression consisting of 12 terms is 354. The ratio of the sum of even terms to the sum of odd terms is 32 : 27. Find the common difference of the progression.
- (1) 2 (2) 3 (3) 7 (4) 5
56. The points A (2, 1), B (0, 3) and C (-2, -2) are the vertices of a triangle. What are the co-ordinates of the vertices A', B' and C' of a triangle formed by reflecting these points A, B and C in the x-axis?
- (1) (2, -1), (2, -2) and (0, -3) (2) (-2, 1), (0, 3) and (2, -2)
 (3) (2, -1), (0, -3) and (-2, 2) (4) (-2, -1), (0, -3) and (2, 2)
57. A right angled sector of a circle of radius 8 cm is rolled up into a cone in such a way that the two binding radii are joined together. What is the total surface area of the cone in sq cm?
- (1) 16π sq cm (2) 8π sq cm (3) 12π sq cm (4) 20π sq cm
58. For what value of m will the roots of the equation $x^2 + 2(m-4)x + m^2 + 6m = 0$ be real and distinct?
- (1) $(\frac{8}{7}, \infty)$ (2) $(\frac{7}{8}, \frac{8}{7})$ (3) $(-\infty, \frac{7}{8})$ (4) $(-\infty, \frac{8}{7})$
59. What is the perimeter of the triangle bounded by the line $8x - 15y = 120$ and the x and y intercepts?
- (1) 60 (2) 20 (3) 40 (4) 36
60. The value of $\frac{1}{\log_2 \pi} + \frac{1}{\log_{4.5} \pi}$ is
- (1) < 2 (2) > 2 but < 4 (3) > 2 (4) > 4

61. Tamiya asked a question to five of her classmates “In what shape can one arrange 24 balls such that there are 5 in each row?” Bareera replied “it is a pentagon”. Zuvariya said “it is tetrahedron”. Fahika replied “it is a octagon”. Shifaya replied “it is a hexagon”. Tabasum said “it is impossible to have such a combination”. Who is correct?
- (1) Zuvariya (2) Shifaya (3) Tabasum (4) Bareera
62. If $f\left(x - \frac{1}{x}\right) = x^2 + \frac{1}{x^2}$, then $f(z) =$
- (1) z^2 (2) $\frac{1}{z}$ (3) $z^2 - 2$ (4) $z^2 + 2$
63. a_1, a_2, \dots, a_n are n negative integers, and b_1, b_2, \dots, b_n are n positive integers. If $G = (a_1)^{b_1} \cdot (a_2)^{b_2} \dots (a_n)^{b_n}$ is positive, then which of the following is not possible?
- (1) All $b_i, i = 1, \dots, n$ are even (2) All $b_i, i = 1, \dots, n$ are odd
 (3) All $b_i, i = 1, \dots, n$ are odd and n is even (4) All $b_i, i = 1, \dots, n$ are odd and n is odd
64. If $ax + by > cx + dy$, and $y, x, a, b, c, d > 0$, and if $x < y$, then
- (1) $a + b < c + d$ (2) $a - b > c - d$ (3) $a + b > c + d$ (4) $\frac{a}{b} > \frac{c}{d}$
65. There are four balls, each with a distinct integer label, in a bag. It is known that the product of the integers on the labels is 24. If a ball is picked at random, the probability that the label is an even natural number is:
- (1) $\frac{1}{4}$ (2) $\frac{3}{4}$ (3) $\frac{1}{2}$ (4) None of these
66. An inventor asked for one grain of wheat for the first square on the chessboard, 2 for the second, four for the third and so on... How many would he have asked for the 20th square?
- (1) 1048576 (2) 131072 (3) 262144 (4) 524288
67. If the area of a right triangle whose height is equal to its base (a) plus two units, is the same as the area of an equilateral triangle whose side is “ $2a$ ”, then $a = ?$
- (1) Can't be determined (2) 0.75 (3) 0.81 (4) 0.92
68. If 75% of a class of 40 can sing, and only 20% cannot dance, the maximum number of students who can either not sing or not dance is:
- (1) 0 (2) 2 (3) 18 (4) Cannot be determined
69. $|a| * |-b| * |c| * \dots * |-z|$ is the same as:
- (1) $a \cdot b \cdot c \cdot d \dots z$ (2) $a \cdot |b| \cdot c \cdot |d| \cdot e \dots |z|$
 (3) $|a| \cdot |b| \cdot |c| \dots |z|$ (4) None of these
70. If $2f(x) = f(2x)$, $3f(x) = f(3x)$, $4f(x) = f(4x)$, $nf(x) = f(nx)$, then $f(1) + f(2) + \dots + f(n) = ?$
- (1) n (2) $\frac{n}{2}$ (3) $\frac{n(n+1)}{2}$ (4) $\frac{n(n-1)}{2}$

Sub-section II-B: Number of Questions = 15

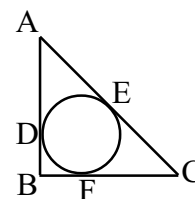
Note: Questions 71 to 85 carry two marks each

71. Bhaskaram, the buzz kid, Sanghamam, the whiz kid and Depam, the tech kid went on a shopping spree at DESCENT PLAZA to purchase such number of articles as equal to the number of letters in their respective names. The buzz kid bought four BCs, two CDs and three BDs costing Rs.450. The whiz kid bought three BCs, two CDs and four BDs costing Rs.450. Depam bought one CD, one BD and thrice as many BCs as CDs for Rs.250. Mangalam wants to purchase a CD from the same PLAZA. What would be her outflow?

(1) 30 (2) 40 (3) 50 (4) Cannot be determined

72. In the adjoining figure, the inradius of the right angled triangle, with hypoteneuse of 53cms, is 10 cms. The value of AE could be

(1) 8cms (2) 18
(3) 28cms (4) Cannot be determined



73. Mathematicians Babu and Ibrahim were entrenched in their research work when Raghavan another research scholar, suggested that they take a short break from their work and try solving a problem posed by PT, a scholar in Maths, which went this way; "There are two natural numbers whose sum is a two digit number which is six times the sum of its digits and their product is 378. The sum of its reciprocals is?"

(1) $\frac{1}{5}$ (2) $\frac{1}{7}$ (3) $\frac{1}{6}$ (4) $\frac{1}{4}$

74. There are five statements:

I - If two corresponding sides and a corresponding angle of two triangles are same, then they are congruent to each other.

II - $2^{2^n} + 1$ is prime for every n

III - In an equilateral triangle of side 6 cm, the area of circumcircle is twice that of incircle

IV - Perpendicular distance is the shortest distance between two points.

V - There are 22 prime numbers between 100 and 200

How many of the above are true?

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

75. Umer Sherif, a loquacious talker, picks up a conversation with people whom he comes across when he regularly visits five places, viz, his office, his friend's home, his uncle's home, pool parlour and his multimedia class. On average he meets, on a day, 12, 8, 15, 10, 13 people at the abovementioned places respectively. He is also notorious for hurting the feelings of some persons. On average, he quarrels with two people when he plays pool, he fights with three people when he is in classroom, engages in heated arguments with three people in his office, is in good terms with people when he visits his uncle's home and quarrels with three of his friends when he visits his friends home. If one were to pick a notorious activity of Umer, what is the probability that he has quarreled with a person when he plays pool?

(1) 0.29 (2) 0.19 (3) 0.39 (4) 0.34

76. How many values can “x” take so that $\frac{(4x+7)^2}{x+5}$ is an integer?
- (1) 1 (2) 2 (3) 3 (4) 4
77. Sridevi goes daily to the pond in the Kanchi temple to fetch the roses that flower there. She decides to count the number of roses she had taken from the pond. To her astonishment she finds that the sum of flowers fetched on the 49th and 99th day is twice that of the number fetched on the 74th day and the number of flowers collected till 149th day and 211th day are 187889 and 377268 roses respectively. How many more flowers did she collect on the 313th day as compared to the previous day?
- (1) 7 (2) 17 (3) 9 (4) 19
78. Let $K = 2^{n^2 - 2n + 3}$ where K is a natural number defined for $1 < n < 5$
Let $L = 7n + 1$, where L is a natural number defined for $5 < n < 27$
Let Z be a set containing elements equal to the number at which L equals K for different values of n.
Let X be a set which contains elements equal to one more than thrice the number in Z of which Z number of elements are identical. If a person were to choose a maximum of Z number of elements from the set X, she would choose them in how many ways?
- (1) 2^{32} (2) 2^{64} (3) 2^{128} (4) 2^{256}
79. A teacher asked her students to find out the number of custard apples(g) that she has and gives two clues for the students to find out the same. **Clue 1:** The number satisfies the equation $\log_2 g = \sqrt{g}$. **Clue 2:** The number lies between 5 and 500. Student 1 says that Clue 2 is redundant. Student 2 says that Clue 1 is unnecessary. Student 3 says that he can get the answer using both the clues. Student 4 is of the view that both the clues will not help anyone in determining an unique answer. Who is correct?
- (1) Student 1 (2) Student 2 (3) Student 3 (4) Student 4
80. Let P be a set containing prime numbers upto 300. Let Q be a subset of P containing those prime numbers which become composite when any digit is prefixed. The number of elements in Q is
- (1) 3 (2) 4 (3) 8 (4) 7
81. PQRSTU represents a six digit number. It permutes within itself by retaining the same six digits, not necessarily in the given order, when it gets multiplied by first six natural numbers. Which is the six digit number and what is the sum of six such permuted numbers?
- (1) 142857, 3666663 (2) 428571, 2999997 (3) 142857, 2999997 (4) 428571, 3666663
82. There are seven circles. The area of the second circle is thrice that of the first; the area of the fourth circle is thrice that of the third, and so on till the seventh circle whose area is thrice that of the sixth. The ratio of the radii of the seventh and first circle is:
- (1) 81 : 1 (2) 27 : 1 (3) 729 : 1 (4) 9 : 1
83. Sushma cleared the entrance test of JPS Sain school of management and was called for a personal interview. The interview panel vetted her application and found that she was strong in her mathematical calculations. In order to test her number crunching abilities they asked “How many times ‘ZERO’(0) is written from 1 to 1000?”. She replied “192”. Again they asked “How many times ‘ZERO’(0) is written one to one lakh?”. The panel was really amazed when she answered. What is the answer?
- (1) 58892 (2) 38894 (3) 28893 (4) 48895

84. Jacques, with his three children, went for a picnic to the Angel Falls. He wanted to use the given time quite usefully. So he placed on the ground three glass tumblers of capacities 3 litres, 5 litres and 8 litres with the last one having water to its fullest capacity and the other two being empty. He then asked his children a question “What is the minimum number of steps needed to make at least one glass tumbler hold exactly 4 litres by pouring water from one glass tumbler to another such that in each step you should transfer as much water as is required that will either empty the tumbler from which water is being poured out or cause to fill up the tumbler into which water is being poured into?”. The children were unable to figure out. Can you help them?
- (1) 6 (2) 7 (3) 8 (4) Impossible
85. In a survey about the popularity of magazines A, B and C among 200 pupils, 78 pupils like A, 72 like B, 90 like C, 28 like A and B only, 22 like B and C only, 10 like A and C only. Find the maximum number of pupils who do not like any of the magazines.
- (1) 20 (2) 24 (3) 16 (4) None of these

End of Section II

Section III - 50 Questions

Questions 86 to 90: For the word given at the top of each table, match the dictionary definitions on the left (A, B, C, D) with their corresponding usage on the right (E, F, G, H). Out of the four possibilities given in the boxes below the table, select the one that has all the definitions and their usages correctly matched.

86. BIND

Dictionary definition		Usage	
A.	To tie someone's hands or feet together so they cannot move	E.	The rape victim was bound and gagged in the boot of the car
B.	To make two people or groups feel as if they are connected to each other in a very close way	F.	The warring countries were forced to relinquish animosity and sign a binding non-invasion treaty.
C.	To limit what someone is allowed to do by making them obey a rule or agreement	G.	Add some more oil to bind the dough
D.	Sticking or mixing together of two or more substances so that they become one	H.	The cultural similarity between the two tribes helped bind them closer together.

(1)	
A	E
B	G
C	H
D	F

(2)	
A	G
B	F
C	E
D	H

(3)	
A	E
B	H
C	F
D	G

(4)	
A	G
B	E
C	H
D	F

87. FRONT

Dictionary definition		Usage	
A.	The surface of something that faces forwards	E.	Paste a recent passport size photograph on the front page of your docket
B.	The part of something that is nearest the direction it faces	F.	There's some good news on the investment front
C.	A particular aspect of a situation	G.	Don't try to fool us – we know that you are putting a brave front, while you are actually very worried about the results
D.	A behaviour that is not sincere because you want to hide your real feelings.	H.	Reema bore the brunt of the injury as she was sitting at the front of the bus.

(1)	
A	E
B	H
C	F
D	G

(2)	
A	E
B	G
C	F
D	H

(3)	
A	G
B	H
C	F
D	E

(4)	
A	F
B	H
C	E
D	G

88. MARGIN

Dictionary definition		Usage	
A.	The space at the left or right side of a page	E.	Engineers tend to pad their designs with a wide margin of safety – forgetting the need to be cost efficient
B.	The amount by which a competition or election is won	F.	Bush won the US Presidential election with a wafer thin margin.
C.	Additional time, space, money that is included in order to be certain	G.	It is a high risk proposition to trade on margin in a volatile market like this
D.	Money given to pay for possible losses on investment	H.	Do all your calculations in the margin. You will not be provided extra scratch sheets.

(1)	
A	E
B	F
C	H
D	G

(2)	
A	H
B	F
C	E
D	G

(3)	
A	G
B	F
C	E
D	H

(4)	
A	H
B	E
C	F
D	G

89. FRAME

Dictionary definition		Usage	
A.	To put a picture or photograph in a frame	E.	Sheela headed the team that framed the proposal to ban use of throw away plastics
B.	To form a border around something	F.	The judge took exception to the way the prosecution lawyer conducted his investigation of the witness and asked the lawyer to frame his questions differently
C.	To develop or make up something such as a plan or law	G.	We had gone out to get the painting framed.
D.	To express something carefully in a particular way	H.	Long red hair framed her cherubic face

(1)	
A	G
B	F
C	E
D	H

(2)	
A	F
B	H
C	G
D	E

(3)	
A	G
B	H
C	E
D	F

(4)	
A	H
B	E
C	G
D	F

90. CONNECT

Dictionary definition		Usage	
A.	To join two things together	E.	Take care while connecting the red and white wires. High voltage current passes through these wires.
B.	Allow communication	F.	A modem allows you to connect to the internet or to send a fax.
C.	To show a relationship between one person or thing and another.	G.	There is no way to connect Shiv with this project.
D.	To manage to hit someone or something	H.	Her first punch did not connect

(1)	
A	E
B	F
C	G
D	H

(2)	
A	H
B	F
C	G
D	E

(3)	
A	E
B	H
C	G
D	F

(4)	
A	H
B	G
C	F
D	E

Questions 91 to 96: For each of the words below, a contextual usage is provided. Pick the word from the alternatives given that is closest in the given context.

91. DOCILE - It was a rude shock to see Prem, who is usually docile, fighting ferociously.
(1) Impudent (2) Obedient (3) Indignant (4) Brittle
92. NEOPHYTE – CAT has remained an exam that challenges experts as well as neophytes.
(1) Tyro (2) Clairvoyant (3) Intelligent (4) Inane
93. RETINUE – The chief weapon's inspector with his retinue searched the palaces of Saddam Hussein
(1) Opponents (2) Superiors (3) Pall bearers (4) Attendants
94. GAINSAY – Harish, known for his honesty, is not likely to gainsay the facts of the report.
(1) Deny (2) Lie (3) Prevaricate (4) Exaggerate
95. ACCOMPLICE – The international community has learnt that it is more important to stop the accomplices who abet crime than the terrorists themselves.
(1) Informers (2) Bootleggers (3) Partners in crime (4) Secret services
96. CONUNDRUM – She invented new conundrums on their way to Kanyakumari and entertained the children in the process.
(1) Puzzle (2) Songs (3) Rhymes (4) Stories

Questions 97 to 101: Sentences given in each question, when properly sequenced form a coherent paragraph. Each sentence is labelled with a letter. Choose the most logical order of sentences from among the four given choices to construct a coherent paragraph.

97. A. The French High Command hoped they would be able to close the gap, and the Armies of the north were under their orders.
B. Therefore, when the force and scope of the German penetration were realized and when a new French Generalissimo, General Weygand, assumed command in place of General Gamelin, an effort was made by the French and British Armies in Belgium to keep on holding the right hand of the Belgians and to give their own right hand to a newly created French Army which was to have advanced across the Somme in great strength to grasp it.
C. From the moment that the French defenses at Sedan and on the Meuse were broken at the end of the second week of May, only a rapid retreat to Amiens and the south could have saved the British and French Armies who had entered Belgium at the appeal of the Belgian King; but this strategic fact was not immediately realized.
D. Moreover, a retirement of this kind would have involved almost certainly the destruction of the fine Belgian Army of over 20 divisions and the abandonment of the whole of Belgium.
- (1) CADB (2) ABCD (3) CDBA (4) ADBC

98. A. I felt somehow for many years that George Washington and Alexander Hamilton just left me out by mistake.
B. Earlier today we heard the beginning of the Preamble to the Constitution of the United States, "We, the people".
C. But through the process of amendment, interpretation, and court decision I have finally been included in "We, the people".
D. It is a very eloquent beginning. But when that document was completed, on the seventeenth of September in 1787, I was not included in that "We, the people."
(1) BCAD (2) BDAC (3) ACBD (4) ADCB
99. A. Students came forward to offer their services; now there is a teacher in the most remote area of the country.
B. When the revolution came to power it found 22,000 teachers, and nearly one million children without schools.
C. It has been easy to give teachers to the people, but it has been difficult to solve the problem in the mountains, so we asked for volunteers to teach in distant corners of the country.
D. Today our country has 33,000 teachers, not a single area of Cuba is without teachers.
(1) ACDB (2) CDBA (3) DABC (4) BDCA
100. A. Let us see where we are as a people; how we act here and what we think we are.
B. If woman's suffrage is wrong, it is a great wrong.
C. The difficulty with the men of this country is that they are so consistent in their inconsistency that they are not aware of having been inconsistent.
D. If it is right, it is a profound and fundamental principle, and we all know, if we know what a Republic is, that it is the fundamental principle upon which a Republic must rise.
(1) ADBC (2) BDAC (3) CBAD (4) CDAB
101. A. It is called the Red-Scholes theory — named after Myron Schole's red pen, which was found buried in a Big-Black hole just north of Manhattan.
B. One of the greatest limitations of the Black-Scholes approach, as Eurico has recently discovered, is that it does not include the crucial higher-order terms required to model ego-driven, speculative positions of the kind frequently employed by Long Term Capital Management.
C. This new model, which draws from a branch of mathematics known as Crony-Numbers, promises to provide a much better representation of the problem involving sophisticated tricks by superstar investors such as Eurico and the likes.
D. For those going into trading or contemplating a PhD in pricing theory, I recommend looking into a new theoretical framework currently being developed among the Nobel laureates of higher finance.
(1) ACDB (2) BDAC (3) DACB (4) BACD

Questions 102 to 106: In each of the following sentences, a part of the sentence is left unfinished. Beneath each sentence four different ways in which the sentence can be completed are indicated. Choose the best alternative among the four.

102. Each state is divided into territorial _____ in such a manner that the ratio between the population of each constituency and the number of seats allotted to it is, so far as _____, the same throughout the state.
(1) constituencies; practicable (2) districts; amenable
(3) units; required (4) boundaries; auditable

103. _____, French for 'citizen class', is a term used by Marxist Socialists to denote the class of proprietors, capitalists, merchants, and members of liberal professions, as opposed to the _____.
(1) Aristocrat; Royalty (2) Bourgeoisie; proletariat
(3) Cretins; Simpletons (4) None of these
104. The government had brought in a number of private buses from the districts to _____ over the crisis that had gripped the city in the _____ of the strike.
(1) help; onslaught (2) take; view
(3) crush; aftermath (4) tide; wake
105. The use of mixed media captures the artistic _____ of the visual medium, however, the treatment of colours limits their use to a tool rather than a symbolic _____.
(1) creativity; dream (2) contours; passion
(3) splendour; expression (4) vagaries; palette
106. Life is a/an _____ of experiences with its mystic underplays waiting to be explored. The profundity of the inner self is juxtaposed with the _____ of the outside world in the journey towards discovering the eternal truth.
(1) vicissitude; distractions (2) labyrinth; vagaries
(3) agglomeration; distortions (4) mystery; profoundness

Questions 107 to 111: In each of the following questions, four different ways of phrasing the sentence is used. Choose the best among the four choices.

107. (1) Unafraid of neither lightning nor thunder during a storm, Mr. Jones enjoyed walking in the park during heavy downpours.
(2) Unafraid of neither lightning or thunder during a storm, Mr. Jones enjoyed walking in the park during heavy downpours.
(3) Afraid of both lightning and thunder during a storm, Mr. Jones enjoyed walking in the park during heavy downpours.
(4) Unafraid of either lightning or thunder during a storm, Mr. Jones enjoyed walking in the park during heavy downpours.
108. (1) Should we be told that our recommendations pertinent to the kind of use made of our vehicles have been accepted, we will gladly cooperate with the ultimate plan.
(2) Should we be told that our recommendations for the use of our vehicles have been accepted, we will gladly cooperate with the ultimate plan.
(3) If we are told that recommendations about use of our vehicles has been accepted, we will gladly cooperate with the ultimate plan.
(4) Our being told of the acceptance of our recommendations pertinent to use made of our vehicles should cause us to gladly cooperate with the ultimate plan.
109. (1) Seventeenth-century authors used alliteration both to refine their writing and to increase a listener's pleasure.
(2) Authors of the 'seventeenth century used alliteration to both refine their writing and increase a listener's pleasure.
(3) Seventeenth-century authors utilized alliteration both to refine their writing and to increase a listener's pleasure.
(4) Authors of the seventeenth century used alliteration to both refine their writing and increase a listener's pleasure.

110. (1) Married women raising young children do not respond to social stresses as poorly like unmarried women do.
(2) Married women raising young children do not respond to social stresses as poorly as unmarried women.
(3) Married women raising young children do not respond to social stresses as poorly as unmarried women do.
(4) Married women raising young children do not respond to social stresses as much as unmarried women have.
111. (1) Your incessant meddling in my affairs, your obnoxious ridiculing of my suggestions and sudden departure prevented our conference yielding significant results.
(2) Your incessant meddling in my affairs, your obnoxious ridiculing of my suggestions and your sudden departing prevented our conference yielding significant results.
(3) Your incessant meddling in my affairs, your obnoxious ridiculing of my suggestions and your sudden departing caused the prevention of our conference yielding significant results.
(4) Your incessant meddling in my affairs, your obnoxious ridiculing of my suggestions plus your sudden departure prevented our conference yielding significant results.

Questions 112 to 135: Each of the seven passages given below is followed by questions. Choose the best answer for each question.

Passage 1

On a Saturday afternoon in late May 1993, I flew north from Ho Chi Minh City - the former Saigon - to Hanoi on a Vietnam Airlines Tupolev 134B-3. A Soviet-built mid-range jetliner, the airplane had a proletarian blue and white exterior, but the cabin hinted of something different. Hand carved, darkly varnished cabinets in the forward bulkhead and circular portholes beside the seats created the illusion of an Art Deco sky-going yacht. It would have been the perfect setting for the opening scene in a remake of *Lost Horizon*, updated to jet but retaining an austere, 1930s panache.

That brief echo from one of the great survival classics was the first clue to what lay just ahead. A twice-recycled boarding pass directed me to Seat 1A. In the Tupolev, all four positions in the first row allow a scant five inches between the seat and the polished wall. This was going to be a problem.

The cabin was stifling. When at long last all the passengers were seated and the boarding ladder had been rolled away, the air conditioning system erupted. Billows of frosty air blew down diagonally from spigots in the ceiling and crisscrossed in the aisle. In moments the windows were opaque and the walls ran with condensed moisture. Shangri-la had vanished in the vapour.

But the flight attendants were beautiful, dressed in powder blue skirts, stylized neckties, and impeccably white blouses. It was a minor matter that not one of them knew a word of English, or that when a friendly translator in the next seat asked about the type of airplane, they told him they didn't know. All the smoking and seatbelt signs, at least, were in Vietnamese and English; until a few months before, the second language had been Russian. One of the smiling attendants emerged from the mist with Saigon Coke. It tasted like the old soft drink Moxie.

Ten minutes into the flight, the vapour dispersed, the porthole cleared, and far below the airplane, smoke from farms and factories rose up to join the general haze. To the left, the mountains drifted off toward Cambodia in folds of green and purple velvet. Here and there, patches of more brilliant green suggested rainforest, and one imagined tigers. The landscape was so vast and serene it was hard to reconcile it with the labour that took place there building and traversing the Ho Chi Minh Trail. From 25,000 feet there were no signs of the war, nothing to connect this land to remembered images of the long-ago struggle, the noise, the suffering, the

terrible assault on the earth that made a moonscape of the DMZ. Now it all appeared to be washed over with new growth and salved by the haze of heat and altitude and time.

The Tupolev flew over the long barrier beaches north of Hue, where the river waters flowing down from the Annam Cordillera are filtered in the tidal marshes before they mix with the South China Sea. Then the shore bends inward toward the west, nearing the narrowest section of this hourglass country, and the jetliner headed out over the Tonkin Gulf.

I visited Hanoi two and a half years ago to observe discussions between Vietnam Airlines and Continental, one of several U.S. airlines then exploring business opportunities with the Vietnamese flag carrier. Even before President Clinton lifted the trade embargo in February 1994, Continental, Northwest, Delta, United, and American had all sent representatives to Vietnam, each hoping to share with VNA the traffic that would be possible between the two countries once diplomatic relations were normalized. Which of the U.S. carriers will prevail, however, depends not only on VNA's preference but on a tangle of bureaucratic procedures.

First, the number of routes available must be determined by negotiations between the Vietnamese aviation authority and the U.S. departments of state and transportation. Once that number has been announced, the airlines will file applications with the DOT, and the department will either make a ruling or send the case to an administrative law judge for a recommendation. The process is long and complicated, but so is the establishment of a business relationship with a state-owned institution in a communist country. So the American executives started laying the groundwork for cooperation in 1992, and they found through the course of their negotiations that both sides had a lot to learn.

112. The author of the passage could be any of the following except:

- (1) A professional belonging to the airline industry
- (2) A bureaucrat belonging to the aviation and transportation ministry
- (3) An executive belonging to an airline company
- (4) An aircraft engineer

113. The Tupolev aircraft was built by:

- (1) The Vietnamese (2) Continental (3) The Soviets (4) None of these

114. It can be inferred from the passage that "Lost Horizon" was a/an:

- (1) Name of World War II aircraft (2) Movie
- (3) Yacht (4) None of these

115. It can be inferred from the passage that the author's opinion about the Tupolev aircraft was:

- (1) Appreciative (2) Negative (3) Disinterested (4) Uninterested

116. The journey mentioned in the passage was undertaken in the year:

- (1) 1930 (2) 1993 (3) 1994 (4) 1992

Passage 2

Although nerves can be thought of as wires of telegraph cables carrying messages in the form of bursts of energy, a nerve impulse is more complicated than a surge of electrons travelling along a copper wire. The transmission of an impulse through a living cell involves the movement of electrically charged particles-ions-across, not along, a membrane; in this case the wall of the axon. Axons are tiny tubes which grow from the neuron and range in length from a few millimetres to several meters long.

Nerve cells are remarkable because they can “communicate” with each other. A stimulated neuron sends messages in the form of the tiny rapid pulses of electricity along its axon, the synapses linking it to other neurons. The electrical impulses themselves cannot jump across the synapses, but the signal is passed by causing the release of a chemical transmitter substance that makes the surface of the next neuron develop an impulse. Studying nerve communication is difficult because the synapses are usually so small that there can be many linking nerve cells. Each may receive thousands of synaptic contacts from other neurons and, in turn, may send the same number of axon branches. Another complication is the sheer number of nerve cells. The human nervous system contains billions of neurons-more than 10 billion in the brain alone, and so scientists have an incredibly difficult job in determining how the whole “wiring” system works.

117. What is the main idea of this passage?

- | | |
|-----------------------------------|---|
| (1) How ions move. | (2) How nerves are like telegraph cables. |
| (3) How electrical impulses move. | (4) How nerves send messages. |

118. What is so special about nerve cells?

- | | |
|--|---|
| (1) That they contain ions. | (2) That they are so complex. |
| (3) That they communicate with each other. | (4) That they are linked to each other. |

119. What does the electrical impulse cause?

- | | |
|----------------------------------|---------------------------------------|
| (1) Ions to jump across the axon | (2) Release of a chemical transmitter |
| (3) A burst of stimulation | (4) Linking of neurons |

Passage 3

Recently, a bizarre experiment in the United States showed that psychiatrists cannot always distinguish between people who are mentally disturbed and those who are sane.

Eight perfectly normal people, by shamming mild symptoms, gained admission to psychiatric wards. Everything they told the doctors about themselves and their past experiences was true, except their names and symptoms. They all complained of hearing strange voices. Once inside the hospitals, they behaved as normally as they could. Amazingly, none of the staff or doctors discovered the fraud, though many of the real patients in the hospital did. “You’re not crazy. You’re a journalist checking up on the hospital,” they were told by their inmates.

Critics of conventional psychiatry have argued that diagnostic terms for mental disease are often no more than convenient labels designed to make life easier for doctors. This experiment would seem to support that notion.

120. The experiment proved that

- (1) Many sane people are wrongly hospitalized
- (2) Psychiatrists are poorly trained
- (3) Some psychiatrists cannot make accurate diagnoses
- (4) Psychiatrists should not label their patients

121. The eight people got admitted into the wards by

- | | |
|-------------------------------------|---|
| (1) Pretending to be totally insane | (2) Lying about their experiences |
| (3) Paying an admission fee | (4) Faking minor psychological problems |

122. According to the passage,

- (1) Only real patients suspected that the eight were normal
- (2) Some real patients helped in the experiment
- (3) The eight participants all heard strange voices
- (4) The eight could not escape from the hospitals once they got in

Passage 4

It's hard to imagine our world without plastics, a large group of synthetic materials based on the chemistry of carbon. The term derives from the Greek *plastikos*, meaning 'mouldable' or 'formable', and it is flexibility that underlies the success of plastics. The first synthetic plastic was made in 1869 from plant cellulose, hence its name celluloid. Celluloid was used to make many things, including movie film, and it is used even today by button makers. New plastics were rapidly developed starting in the 1930s. Nylon, introduced in 1938, was the first plastic widely used in clothing. Later plastics like polyester surpass such natural fibres as cotton and wool in retaining warmth when wet. Teflon, unusual because of its resistance to high heat, was created the same year and is now common on non-stick cookware. Polyethylene has been commercially produced since the late 1940s and is the most widely used plastic. Newer plastics are miracle materials. Acrylic can stand rough outdoor conditions and is used in lighting fixtures, airplane windows, and car taillights. Some plastics are excellent for electrical insulation and appear in wall switches and other electrical hardware; others are the opposite and have excellent conducting properties, and these are likely to become very important in the electronics industry. While many plastics are soft and brittle, new creations have strengths equivalent to metals. Wherever you look from space shuttles in outer space, artificial hearts inside our bodies, to the garden hose, you find plastics.

123. The word "synthetic" in line 3 is closest in meaning to which of the following?

- | | | | |
|----------------|--------------|------------|--------------|
| (1) Artificial | (2) Flexible | (3) Strong | (4) Hardened |
|----------------|--------------|------------|--------------|

124. According to the passage, what is the meaning of the Greek word "*plastikos*"?

- | | |
|--------------------------------------|-----------------------------|
| (1) That which can be quickly heated | (2) That which is visual |
| (3) That which is easily shaped | (4) That which is unnatural |

125. Which of the following plastics is used to make airplane windows?

- | | | | |
|-------------|---------------|------------------|------------|
| (1) Acrylic | (2) Celluloid | (3) Polyethylene | (4) Teflon |
|-------------|---------------|------------------|------------|

126. It can be concluded from the passage that plastic

- (1) Will completely replace natural fibres in the clothing industry
- (2) Do not have the water resistance to be used outdoors
- (3) May even begin to replace metals
- (4) Are cheaper than copper when used in electrical wiring

Passage 5

I would like to share an encounter that shakes me up each time I think of it even though it actually took place more than 30 years ago. I was young and newly married. Martha, a cousin of my husband's came to visit from England. She was an elegant aristocratic woman who was ordinarily very formal and reserved in her behaviour. I was, therefore, surprised to find her in my kitchen one morning. She began to tell me about Harold, her late husband. He was a wonderful, gentle, and kindly man. She was the "strong" one in the family and he always deferred to her. She ran the show and he never demanded anything from her. She went about, day-to-day busily attending to the "important" things in her life, fully expecting that some day she would focus and spend more time with Harold, who she assumed would always be there. There didn't seem to be any urgency. Then, without warning and totally unexpectedly, one day he collapsed and died. I can still hear her sobs these many years later. "Feigele," she cried, "I can perhaps come to terms with the fact that he died prematurely and left me alone, but I am haunted and inconsolable that I took him and his presence for granted. I will never forgive myself for not taking the time to tell him how much he meant to me."

I would remind the reader that while having a husband around 24-7 can be trying, that she not lose sight of the bigger picture. Many interests in life appear to be terribly significant, but the greatest gift by far is the presence and companionship of a spouse. Indeed, we must confront our issues, but at the same time we must work hard not to allow our "busy" schedules to obscure our greatest blessing.

127. The objective of the passage is:

- (1) Narrating how sad the author feels about losing her husband
- (2) Advising widows how to best spend their lives
- (3) Suggesting to married women to enjoy life continuously
- (4) None of these

128. Martha is:

- | | |
|-----------------------------------|--------------------------------|
| (1) The author of the passage | (2) The author's cousin |
| (3) The author's husband's cousin | (4) The author's cousin's wife |

129. Fiegele is:

- | | |
|--------------------------------|-----------------------------------|
| (1) The author of the passage | (2) The author's husband's cousin |
| (3) The author's cousin's wife | (4) Cannot be determined |

Passage 6

Wow, first cloning and now immortality? Okay, we're jumping the gun a bit. But seriously, scientists announced that they have succeeded in producing cells that divide many times over their normal limit. In normal cells, division takes place a certain number of times and then the cell stops dividing. Likewise, cells in vitro usually divide about 50 times or so before they cease dividing. Scientists succeeded in producing cells that divided over 90 times with no signs of slowing down! But how?

In the nucleus of a cell, each chromosome contains the genetic information, also known as DNA, for the individual. When cells divide, DNA is replicated. On the end of chromosomes is a protective "cap" of sorts, called a telomere. As cells divide, the telomere becomes shorter and shorter until the cell ages and stops dividing. Scientists have known that telomere shortening is associated with the aging process, but it wasn't known whether shortening is an exact cause or a by-product of aging.

Recently, scientists at Geron Corporation and the University of Texas Southwestern Medical Center added an enzyme called telomerase to the cell's chromosomes. Telomerase caused the telomeres to grow longer, thus

circumventing the normal shortening process. From this experiment, scientists were able to conclude that telomeres do act as a biological clock in the aging process.

This could have interesting implications. Theoretically, scientists would be able to treat a variety of genetic defects and/or diseases by removing a group of cells from a person, rejuvenating them, and returning them.

There are several unanswered questions. Because cancerous cells have telomeres that do not shorten, there is some debate whether or not the natural shortening of telomeres is an evolutionary adaptation to ward off cancer. By circumventing this natural process, we may in fact be destroying a natural defense mechanism of the body. As additional experiments and investigations are performed, we will be better able to see if this process is indeed an “immortality” breakthrough.

130. Telomerase is:

- (1) A protective “cap” on the end of chromosomes
- (2) An enzyme
- (3) Another name for a chromosome
- (4) None of these

131. With the available knowledge and from the contents in the passage, an artificial lengthening of the telomere is unlikely to result in which of the following?

- (1) An advent of cancer
- (2) Enhanced cell division
- (3) Better treatment for some diseases
- (4) None of these

Passage 7

The dismal science of economics lies at the heart of many public policy debates, but the range and quality of economic opinion appearing in Canada’s news media has never been more dismal. Not that long ago, editors seeking expert advice on economic policy would canvass a wide range of opinion in the nation’s universities. Their sources would be scholarly economists whose research appeared in peer-reviewed economics journals. Today news coverage of economic issues ignores academic voices in favour of business-supported study mills flogging neo-conservative nostrums for the nation’s economic ills.

Cloaked in pseudo-academic garb by virtue of their self-designation as “institutes,” the Fraser Institute, the C.D. Howe Institute, the Atlantic Institute for Market Studies seek to influence news coverage and public policy toward a consistent agenda: less government, lower and less progressive taxes, fewer social programs, more freedom for the owners of capital, and less power for the purveyors of labour. Their “studies,” often penned by junior-varsity economists, are assiduously promoted to key journalists and influential bureaucrats with news releases and executive summaries that distil complex topics into easily digested simplicities.

Lars Osberg, a distinguished emeritus professor of economics at Dalhousie, recently compared his relationship to the Atlantic Institute for Market Studies as that of a geographer to the Flat Earth Society. Economist Michael Bradfield refers to AIMS’s Ontario counterpart as the “Seedy” Howe Institute. Such criticism hasn’t blunted the success of these organizations, which has been astonishing. Newspapers eat them up. A host of policy issues, the shift from income taxes to consumption taxes, the crippling of Canada’s generic drug industry and the consequent stratospheric rise in drug prices, the pursuit of international trade unhampered by environmental safeguards or worker rights were all promoted heavily by these study mills. The left has responded haltingly with counter-institutions like the Canadian Centre for Policy Alternatives, publisher of the Alternative Budget, but its effectiveness has been hindered by the stigma of union financing in a way that business financing has not impeded the right-wing institutes.

Readers with Internet access can find a useful antidote to the tendentiousness of media economic coverage in the work of Brian MacLean, an economist at Laurentian University. Every few weeks, MacLean distributes an e-mail newsletter called Canada's Economy in the Newspapers. Each issue reviews several recent articles on economics, pointing out questionable assumptions, faulty interpretations, and logical contradictions. His style is engaging and easy to follow without sacrificing academic credibility. In one recent example, a pair of AIMS papers portrayed Canada's system of equalization as a millstone that, far from assisting have-not provinces, had imprisoned them in a welfare trap. The gist of the argument is that increased provincial revenues from economic development, particularly resource based developments, are largely offset by reductions in equalization payments, with the result that provincial governments have little or no incentive to promote economic development. Readers probably don't need MacLean's help to detect the real -world absurdity of this conclusion.

Since the Second World War; and likely for decades before that, economic development has been a nearly universal obsession for provincial and federal governments alike. In the logic of AIMS's researchers, attempts by provincial governments to wheedle better royalty deals out of oil companies and mining corporations are misguided policies that could be eliminated if only the equalization program were gutted. MacLean points out other distortions in the AIMS analysis, such as the fundamental misconception that equalization is somehow supposed to be a tool for economic development, and Atlantic Canada's continued lack of prosperity is proof of its failure. But equalization has nothing to do with economic development; its purpose is to ensure reasonable comparable levels of critical government services like health, education, and welfare, without wildly different levels of taxation.

132. Brian MacLean is:

- (1) An economist
- (2) Director of AIMS
- (3) Producer of the newsletter "Canada's Economy in the Newspapers"
- (4) Both (1) and (3)

133. According to the passage, the quality of economic reporting and analysis in Canadian media till some time back was:

- (1) Deplorable
- (2) Academic
- (3) Well researched
- (4) The best in the world

134. Lars Osberg's opinion about AIMS, according to the passage is:

- (1) Excellent
- (2) Unimpressed
- (3) Critical
- (4) Unbiased

135. AIMS is most likely to agree with which of the following economic opinions?

- (1) The government should increase the expenditure on social reforms
- (2) The government should increase the tax rates
- (3) The government should interfere less with the market
- (4) The educational system in Canada should be completely revamped

End of Section III