

CAT Diagnostic Test

Answer Key

(1)	1	(41)	4	(81)	3	(121)	4
(2)	3	(42)	4	(82)	2	(122)	1
(3)	1	(43)	1	(83)	2	(123)	1
(4)	2	(44)	4	(84)	1	(124)	3
(5)	1	(45)	3	(85)	4	(125)	1
(6)	4	(46)	1	(86)	3	(126)	3
(7)	3	(47)	2	(87)	1	(127)	3
(8)	3	(48)	2	(88)	2	(128)	3
(9)	2	(49)	3	(89)	3	(129)	1
(10)	1	(50)	3	(90)	1	(130)	2
(11)	3	(51)	1	(91)	2	(131)	4
(12)	2	(52)	3	(92)	1	(132)	1
(13)	4	(53)	2	(93)	4	(133)	3
(14)	2	(54)	1	(94)	1	(134)	3
(15)	4	(55)	4	(95)	3	(135)	3
(16)	3	(56)	3	(96)	1		
(17)	1	(57)	1	(97)	1		
(18)	2	(58)	4	(98)	2		
(19)	1	(59)	3	(99)	4		
(20)	3	(60)	1	(100)	2		
(21)	2	(61)	2	(101)	3		
(22)	3	(62)	4	(102)	1		
(23)	2	(63)	4	(103)	2		
(24)	4	(64)	3	(104)	4		
(25)	2	(65)	4	(105)	3		
(26)	3	(66)	4	(106)	2		
(27)	2	(67)	3	(107)	4		
(28)	4	(68)	3	(108)	3		
(29)	3	(69)	3	(109)	1		
(30)	4	(70)	3	(110)	3		
(31)	2	(71)	3	(111)	2		
(32)	4	(72)	2	(112)	4		
(33)	4	(73)	2	(113)	3		
(34)	4	(74)	1	(114)	2		
(35)	3	(75)	2	(115)	2		
(36)	4	(76)	2	(116)	2		
(37)	3	(77)	2	(117)	4		
(38)	3	(78)	3	(118)	3		
(39)	4	(79)	3	(119)	2		
(40)	4	(80)	1	(120)	3		

Score Sheet

Section No.	No. Attempted	No. Correct	Negative	Net Score
Section 1				
Section 2				
Section 3				
Total 185				

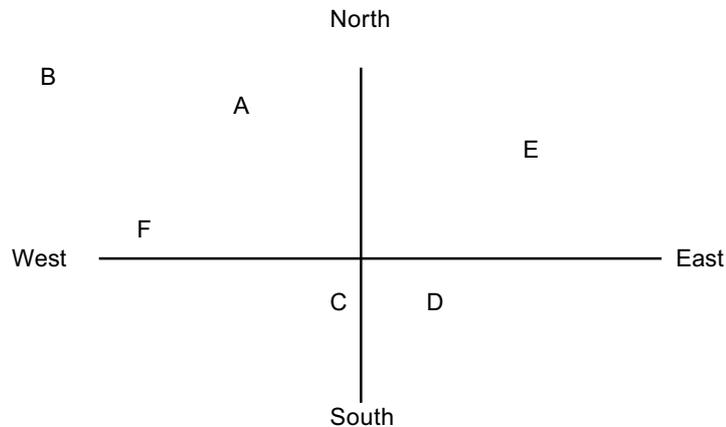
CAT Diagnostic Test

Explanatory Answers

- Go from the choices: Choice(1) K,L,N
 K - Chairman planning commission (Central government),
 L - Principal Secretary,Ministry of Education (Central government),
 N - Accountant General (State government)
 There are two representatives of Central government and one from State Government each from different departments. It satisfies the given condition and hence the answer.
- Choice(1) P, K, M here K and M are of the same department - Planning commission. Hence it is eliminated.
 Choice(2) P, M, L in this P and M are State Government employees. Hence it is eliminated.
 Choice(3) P, K, L all of them are from different departments and here K and L are from Central Government and P from State government. It satisfies the given condition. Hence choice(3) is the answer.
- From statement I, if J cannot serve on a committee then K and L should be present in the committee and K is from Planning commission and hence M (planning commission) cannot participate in the committee. Statement I is true.
 If O doesn't serve on the committee J can serve the committee with an exception that P should not serve on the committee. As P and J are of same department (Finance). Hence statement II may not be true. Hence choice(1) is the right answer.
- Choice(2) N and J is the right answer. Here L and J are from Central Government and N from State government. All of them are from different departments.
- Statement I: N and O never serve on the same committee because they both belong to state government. Hence it is true.
 Statement II: N and J in the same committee. This is not possible because they both belong to same department(Finance). Hence it is false.
- Go from the choices Highest population density = $\frac{\text{Population}}{\text{Area}}$.
 State 1 Population density = $2500/35 = 71.42$
 State 4 Population density = $6600/75 = 88$
 State 5 Population density = $4213/42 = 100.4$
 State 6 Population density = $2245/19 = 118.4$.
 State 6 has the highest population density and hence choice 4 is the right answer.
- State 3 has the lowest Population density of 61.61 than others [State 1 = 71.42, State 2 = 77.12, State 7 = 67.]
- Total population = 22583 and Total area = 271.
 \therefore Average population density = $\frac{22583}{271} = 83$ (approx) the nearest possible answer is 82.
- Average population of the seven states = $\frac{\text{Total. population}}{7} = 22583 / 7 = 3226$ (approx) the nearest answer is 3200.
- Total production of plant 1 = $753 + 385 + 1623 = 2761$
 Total production of plant 2 = $815 + 700 + 840 = 2355$.
 Total production of plant 3 = $650 + 650 + 1000 = 2300$.
 Hence the maximum total production of all the three products = 2761 and plant 1.
- Polyethylene / BoPP for plant 2 = $815/700 = 1.16$. Hence choice 3 is the answer.
- Total BoPP production for all 3 plants per month = $385 + 700 + 650 = 1735$ ('000 tons).

13. For plant 1 = $\frac{\text{Naptha}}{\text{BoPP}} = \frac{1623}{385} = 4.22(\text{approx})$.

14.



Refer the diagram given.

The town that is furthest in the Northwest direction is **B**. Answer is (2).

15. From the diagram, we can see that towns **A and E** are both north and east of F. Answer is (4).
16. Town F is situated both south and west of town A. Town D is situated both south and west of town E. Town C is situated both south and west of towns D and E.
Thus, towns **C, D and F** are situated both South and West of at least one other town. Answer is (3).
17. Refer diagram. We know that E is north of D, C is east of F and B is north of F.
The position of town C with respect to D is not clearly known. Thus, if the information C is north of D is given, then the information will be more specific. Answer is (1).
18. The information, D is south and east of A can be obtained by combining the other statements. Thus the information in statement III can be deduced from the other statements. Answer (2).
19. Revenue for Product A in 1994 = Price(25) * Sales(16).
Similarly, total revenue = Revenue calculated for all the products in all the years = 3.25 lacs.
20. Total revenue for product A for all five years = $[(25*16) + (28*17) + (30*17) + (32*15) + (30*25)] = 2.62$ lacs(approx).
21. It can be seen from the table that Product B revenue was highest in the year 1995 (35*36).
22. Revenue for product B in 1998 = $45 * 10 = 450$ and revenue for product C in 1998 = $52*40 = 2080$.
Hence, revenue for product C is $\left(\frac{2080-450}{450} \times 100\right) = 362\%(\text{approx})$ higher than product B.
23. Total revenues in 1996 for all 3 products = $30*17 + 40*11 + 45*50 = 510 + 440 + 2250 = 3200$
Total revenues in 1997 for all 3 products = $32*15 + 40*12 + 50*45 = 480 + 480 + 2250 = 3210$.
Hence, revenues in 1997 were higher by 10 and % increase in revenues = $\frac{10}{3200} \times 100 = 0.3\%$
24. Revenue from all three products in 1994 = 3.12 lacs, in 1995 = 3.98 lacs, in 1996 = 3.2 lacs, in 1997 = 3.12 lacs and in 1998 = 3.28 lacs. Hence the highest revenue from all 3 products was 3.98 lacs in 1995.
25. Summing the number of Computer Science passed students from the year 1995 to 2000 we get 195.
26. A quick glance at the table will help you to find the answer. It was in the year 1998 there was a 100% result.
27. Total admissions for Civil in all the five years = 261. Total number of students who graduated in civil = 249.
Hence, percentage of those passed in civil in all these 6 years = $249/261 = 95.4$.

28. Number of Mechanical students graduated in all these 6 years = 365 and number of Metallurgical students graduated = 257. Hence there are 108 more Mechanical students graduated than Metallurgical students.
29. The total number of students admitted to all the four course in 1995 = numbers corresponding to graduation year 1999 as it is a 4 year course = $38 + 71 + 44 + 47 = 200$.
30. This is a question that you should skip, at least, in the first round. It takes time, though there is no difficult concept involved.
31. The ratio of students passed to admits = $1.0(100\%)$
32. Bala takes 53.5 seconds, Chandran takes 53.0 secs, Dinu takes 52.5 secs and Easwar takes 50 secs. Hence Easwar wins the race.
33. Go from the choices, for the first 200m Chandran takes 23 secs; Dinu takes 23 secs and Easwar takes 23 secs. Hence all the three will be in the same position at the end of 200m.
34. Go from the choices, for the first 300m Dinu takes 37 secs, Chandran takes 36 secs and Easwar takes 36 secs. Hence, both Chandran and Easwar will be leading the race at the end of 300m.
35. Go from answer choices. In choice (3) - Ajith, Chandran, Dinu and Easwar will take $11 + 11 + 10.5 + 11 = 43.5$ seconds which will be lowest amongst the four combination given. Note, for each of the four this is their first 100m.
36. Choice (1) - Chandran + Easwar = $23 + 23 = 46$ seconds. Choice (2) - Chandran + Dinu = $23 + 23 = 46$ seconds. Choice (3) - Dinu + Easwar = $23 + 23 = 46$ seconds. All three choices give the same answer. Hence, choice (4) is correct. Note again that for each of them this will be their first 200 m.
37. $A_1 = A$'s A_1 is equal to B 's 1. But we know that B 's 1.55 is equal to A 's 1 unit (from R_1, C_2) and from these B 's 1 = $\frac{1}{1.55} \times 1 = 0.65$. Hence $A_1 = 0.65$.
38. C 's $A_2 = B$'s 1 unit. From the table C 's 0.95 unit = A 's 1 unit = B 's 1.55 unit. when B 's unit is 1 C 's unit is $\frac{1}{1.55} \times 0.95 = 0.61$. $A_2 = 0.61$.
39. D 's 1 unit = E 's 1.2 unit. From the table D 's 1.25 unit = E 's 1.1 unit from these D 's 1 unit = $\frac{1}{1.25} \times 1.1 = 0.88$ unit of E .
40. From statement I $F > B > A$. Statement II $A > C > D$. Combining both the statements we get $F > B > A > C > D$. Hence the oldest and youngest pair is F and D .
41. From statement A, we know that Krish got 25% more than what he got last year. Insufficient information to determine how much he got more than Bama. Statement B talks of Bama's salary between 2 years. Again cannot determine how much Bama got less than Krish. Data insufficient.
If we combine both the statements, we know that Krish got a higher increase than Bama - but we do not know how much was their respective salaries before the rise and hence cannot determine the difference in their current salaries.
42. From both the statements, we do not know if the hike in salary was responsible for the lowering of profits. Hence data insufficient.
43. Statement B alone is sufficient, while statement A alone is not sufficient. From statement A, we will be able to know the % markup and not the actual selling price.
44. Statement A talks about the average quantity consumed by a horse. We do not know if the 4 horses that we are talking about consume the amount equal to the average or more or less. Insufficient data. Statement B talks about 16 horses consuming 14.4 quintals - we do not know if all horses consume equal quantities or not. Hence data insufficient.

45. We can find out the date of the second Sunday of December 2000 (8 months before) from statement B. From statement A, we know it was the same date he joined in July of 2001. So we can determine the day of the week.

46. **Statement A:** The ratio of graduates who were shortlisted to those who applied in 2002 was $\frac{5780}{6450} = 0.89$.

The ratio of graduates who attended interview to those who were shortlisted in 2002 was $\frac{4250}{5780} = 0.74$. Hence, statement A is true

Statement B: The ratio of graduates who applied to those who attended the interview in 2002 was $\frac{6450}{4250}$ which is surely greater than 1. Hence, statement B is false. Correct answer (1)

47. **Statement A:** Total applicants in 2002 = $6450 + 3140 = 9590$. % of postgraduates = $\frac{3140}{9590} \times 100 = 32.75\%$

Total applicants in 2003 = $7520 + 4260 = 11780$. % of postgraduates = $\frac{4260}{11780} \times 100 = 36.16\%$.

As the percentage in 2003 is 36.16% which is greater than a third, statement A is false.

Statement B: The growth in postgraduate applicants = $4260 - 3140 = 1120$. The growth in the number of graduate applicants = $7520 - 6450 = 1070$. Hence, statement B is true. Answer (2)

48. **Statement A:** The ratio of post graduates shortlisted for interview in 2002 as a percentage of those who applied = $\frac{2940}{3140} \times 100 = 93.63\%$. Hence, this statement is false.

Statement B: The ratio of graduates who attended interview as a percentage of those who were shortlisted in 2003 was more than 90% Hence, this statement is true. Hence (2).

49. **Statement A:** In 2002, the percentage of postgraduates who have been selected for the job as a percentage of the postgraduates who attended the interview = $\frac{520}{2520} \times 100 = 20.63\%$

In 2003, the percentage of postgraduates who have been selected for the job as a percentage of the post-graduates who attended the interview = $\frac{640}{3750} \times 100 = 17.07\%$. **Hence, this statement is true.**

Statement B: Number of graduates shortlisted for interview in 2002 is 5780.
Number of graduates shortlisted for interview in 2003 is 6460.

Therefore, the % growth in the number of graduates shortlisted for interview is $\frac{6460 - 5780}{5780} \times 100 = 11.76\%$

Number of post graduates shortlisted for interview in 2002 is 2940.
Number of post graduates shortlisted for interview in 2003 is 4080.

Therefore, the % growth in number of postgraduates shortlisted for interview is $\frac{4080 - 2940}{2940} \times 100 = 38.77\%$

Hence, this statement is true.

50. **Statement A:**
Number of graduates selected in 2002 is 415.
Number of graduates selected in 2003 is 620.

Therefore, the % growth in the number of graduates selected in the 2 years is $\frac{620 - 415}{415} \times 100 = 49.4\%$

Number of post graduates selected in 2002 is 520.
Number of post graduates selected in 2003 is 640.

Therefore, the % growth in the number of post graduates selected in the 2 years is $\frac{640 - 520}{520} \times 100 = 23.08\%$

Hence, this statement is true.

Statement B:

Total number of applicants recruited in 2002 is $415 + 520 = 935$.

Total number of applicants recruited in 2003 is $620 + 640 = 1260$.

The % growth in the total number of applicants recruited between the two years is $\frac{1260-935}{935} \times 100 = 34.76\%$.

This is in excess of 30%. **Hence, this statement is true.**

51. As no information is given about the dimensions (volume) of the cone we cannot answer the questions. Hence, cannot be determined.

52. $f_n(x)$ is negative.
From the four answer choices we know that the answer has to be either (2) or (3) as it talks about the two possibilities when n is even. If n is even, let us take an example of n being = 2.
Then $f_2(x)$ is negative and therefore $f_1(x) = -f_2(x)$ will be positive. Therefore, correct answer is 3.

53. $G_1 = |a| \cdot b \cdot |c| \cdot d \dots |y| \cdot z$. i.e. every odd term is within modulus.
 $G_2 = a \cdot b \cdot c \cdot d \dots y \cdot z$
If $a = (-1)^1$, then the value of 'a' is negative and that of |a| is positive.
Similarly, $c = (-3)^3$ which is negative and |c| is positive.
 $b = (2)^2$ which is positive and |b| is also positive.
 $G_1 = |a| \cdot b \cdot |c| \cdot d \dots |y| \cdot z =$ product of all positive terms and is, therefore, positive.
 $G_2 = a \cdot b \cdot c \cdot d \dots y \cdot z =$ product of 13 negative terms viz. a, c, e, g, ..., y and 13 positive terms b, d, f, ..., z.
Hence G_2 is negative. Therefore, $G_1 = -G_2$

54. $\frac{x-5}{x^2+5x-14} > 0$
 $\Rightarrow \frac{x-5}{(x+7)(x-2)} > 0$

Substitute the different answer choices. When $x = -6$, (the smallest of the 4 answer choices)

$$\frac{x-5}{(x+7)(x-2)} = \frac{-6-5}{(-6+7)(-6-2)} = \frac{-11}{1(-8)} = \frac{11}{8}$$

55. Term 2 = Term 1 + Common difference (d)
Term 4 = Term 3 + Common difference (d) & so on and so forth.
Therefore, Term 2 + Term 4 + Term 6 + Term 8 + Term 10 + Term 12
= Term 1 + Term 3 + Term 5 + Term 7 + Term 9 + Term 11 + (6 x d)
Sum of even terms : Sum of odd terms = 32 : 27 and total sum = 354

Therefore, Sum of even terms = $354 \times \frac{32}{59} = 192$

Sum of odd terms = $354 \times \frac{27}{59} = 162$

We know, sum of even terms = sum of odd terms + 6d $\Rightarrow 192 = 162 + 6d \Rightarrow 6d = 30 \Rightarrow d = 5$

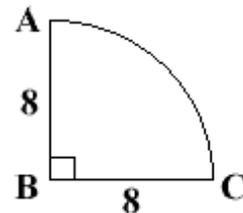
56. When a point is reflected on the x-axis the value of the 'x' co-ordinate remains same, while the sign of the 'y' co-ordinate changes. Hence, the reflection of A(2, 1) is A'(2, -1), B(0, 3) is B'(0, -3) and C(-2, -2) is C'(-2, 2).

57. Total surface area = curved surface area + base area.
The curved surface area of cone = area of the right angled sector

$$= \frac{1}{4} \pi r^2 = \frac{1}{4} \times \pi \times 64 = 16\pi$$

Here base area = 0. Since, it is not a solid cone.

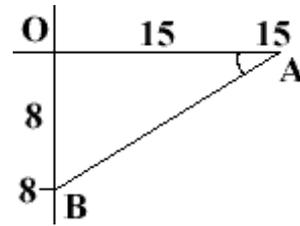
\therefore T. S. A = $16\pi + 0 = 16\pi$ sqcm.



58. $b^2 - 4ac > 0$
 $\Rightarrow 4(m-4)^2 - 4 \cdot 1 \cdot (m^2 + 6m) > 0$
 $\Rightarrow (m-4)^2 - m^2 - 6m > 0$
 $m^2 - 8m + 16 - m^2 - 6m > 0$
 $-14m + 16 > 0 \Rightarrow 16 > 14m$

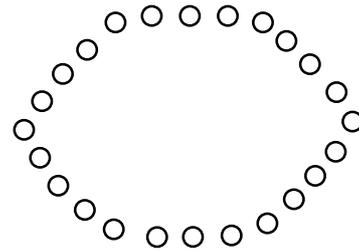
$$\frac{8}{7} > m \Rightarrow \left(-\infty, \frac{8}{7}\right)$$

59. x intercept is when $y = 0$ in $8x - 15y = 120$
 $8x = 120 \Rightarrow x = 15$ i.e. (15, 0)
 y intercept is when $x = 0$ i.e. $-15y = 120$ or $y = -8$ i.e. (0, -8)
 $AB = \sqrt{15^2 + 8^2} = \sqrt{289} = 17$
 \therefore Perimeter = $15 + 8 + 17 = 40$ cm



60. $\frac{1}{\log_2 \pi} + \frac{1}{\log_{4.5} \pi} = \log_{\pi} 2 + \log_{\pi} 4.5 = \log_{\pi} 9$
 $\pi^x = 9 \quad (3.14)^x = 9 \quad 3^2 = 9$
 $\therefore x < 2$ for $(3.14)^x = 9$

61. Shifaya's answer is correct. Refer the adjoining figure



62. $f\left(x - \frac{1}{x}\right) = x^2 + \frac{1}{x^2}$. Go from answer choice
 Let us assume $f(z) = z^2$ ---- Choice (1)

then $f\left(x - \frac{1}{x}\right) = \left(x - \frac{1}{x}\right)^2 = x^2 + \frac{1}{x^2} - 2$. But the question states that $f\left(x - \frac{1}{x}\right) = x^2 + \frac{1}{x^2}$.
 $\therefore f(z) = z^2 + 2$

63. a_1, a_2, a_3 are all negative.
 The product of even number of negative numbers will be positive and therefore, the even power of a negative number will be positive.
 Choice (1) - When all b_i are even $(a_i)^{b_i}$ will all be positive. Hence G will be positive. (possible)
 Choice (2) - All b_i $i = 1, \dots, n$ are odd \Rightarrow all $(a_i)^{b_i}$ are negative. If n happens to be even, then G will be positive (possible)
 Choice (3) - All b_i are odd and n is even then G will be positive (possible)
 Choice (4) - All b_i are odd and n is odd. Then all $(a_i)^{b_i}$ are negative and there will be odd number of negative numbers, whose product will be negative. (Not possible)

64. $ax + by > cx + dy$
 as all the numbers are positive and $x < y$ $a + b > c + d$. Alternatively, substitute some values for a, b, c, d and x and y which adhere to the above inequality and deduce the answer.

65. If there are four balls in a bag each with an integer label and the product = 24, then the labels have to be 1, 2, 3, 4 or (-1, -2, -3, -4) or (1, 2, -3, -4) or (1, -2, -3, 4) and so on. As the product of the 4 integers is positive either two or four of the integers have to be positive. Taking conditional probabilities, the answer obtained is none of the choices (1) to (3).

66. 2^0 for the 1st square. 2^1 for the second.
 \Rightarrow for the 20th square = 2^{19}
 $2^1 = 2, 2^2 = 4, 2^3 = 8, 2^4 = 16, 2^5 = 32, \dots$
 The powers of '2' follow a pattern as far as their unit digits go. Every 4th power has the same unit digit. 2^{19} will have the same unit digit as $2^3 = 8$. Hence the answer is (4)

67. Area of equilateral triangle = $\frac{\sqrt{3}}{4}(2a)^2 = \sqrt{3}a^2$
 Area of right angled triangle = $\frac{1}{2} * (a+2)(a) = \frac{a^2 + 2a}{2}$

$$\Rightarrow \sqrt{3}a^2 = \frac{a^2 + 2a}{2} \Rightarrow 2\sqrt{3}a^2 = a^2 + 2a \Rightarrow (2\sqrt{3} - 1)a^2 = 2a \Rightarrow (2\sqrt{3} - 1)a = 2$$

$$\Rightarrow a = \frac{2}{2\sqrt{3} - 1} = \frac{2(2\sqrt{3} + 1)}{12 - 1} = \frac{4\sqrt{3} + 2}{11} = 0.81$$

68. 30 out of 40 can sing. 8 out of 40 cannot dance \Rightarrow 32 out of 40 can dance
The maximum number that can either not sing or not dance = $8 + 10 = 18$
69. $|a| * |-b| * |c| * \dots * |-z| = |a| * |b| * |c| * \dots * |z|$. Modulus of a quantity means the sign is converted from -ve to the +ve
i.e $|-3| = |3|$.
70. For $f(2) = 2f(1)$, $f(3) = 3f(1)$, the function will have to be such that $f(1) = 1$, $f(2) = 2$, $f(3) = 3 \dots$
 $f(1) + f(2) + \dots + f(n) = 1 + 2 + 3 + \dots + n = \frac{n(n+1)}{2}$
71. Choice (3).
 $4BC + 2CD + 3BD = 450$ --- (1)
 $3BC + 2CD + 4BD = 450$ --- (2)
 $3BC + 1CD + 1BD = 250$ --- (3)
 $9*(1) - 5*(2) - 7*(3) = \text{Rs.} 50$
72. 28, 45, 53 is a pythagorean triplet. The value of $AE = \text{Semi-perimeter} - BC$. $\text{Semi-perimeter} = \frac{28+45+53}{2} = 63$. Therefore, AE can take two values (ie) $63 - 45 = 18$ (or) $63 - 53 = 10$. Since we have only 18 choice (2) is the correct answer.
73. Choice (2).
The two digit number which is six times the sum of its digit is 54. Let the two numbers be a and b .
 $\frac{1}{a} + \frac{1}{b} = \frac{a+b}{ab} = \frac{54}{378} = \frac{1}{7}$
74. Choice (1)
I - true
II- $2^{2^n} + 1$ is not prime for $n=5$
III - Area of circumcircle is 4 times that of the incircle
IV - true
V - There are 21 numbers.
75. Choice (2)
By dividing the probability of picking a quarrel in the pool parlour by the probability of his notorious activities at other places we get the answer $\frac{\frac{2}{10}}{\frac{3}{12} + \frac{3}{8} + \frac{0}{15} + \frac{2}{10} + \frac{3}{13}} \approx 0.19$.
76. $\frac{(4x+7)^2}{x+5} = \frac{(x+5)(16x-24)+169}{x+5}$. For the equation to have integer value 169 should be divisible by $x+5$. So x can take two values (ie) 8 and 164. Hence choice (2)
77. Choice (2)
The number of roses fetched forms an arithmetic progression. The question asks you to find out the common difference (ie) $\frac{377268}{211} - \frac{187889}{149} = \frac{(211-149)*d}{2}$. So $d = 17$. So she collected 17 more flowers.
78. Choice (3)
 K & L will be equal to 64 for $n=3$ & $n=9$ respectively which in turn equals Z . $X = 3Z+1$. No. of ways of selecting Z elements out of $3Z+1$ elements of which Z are identical is 2^{2Z} . So ans is 2^{128} .
79. Choice (3). Student 1 & 2 will get two answers viz 4 and 16. But when both the clues are used we can say that the number is 16. So student 3 is correct.

80. Choice (1)
2, 5, 149 are the numbers.
81. Choice (3)
 $142857 \times 1 = 142857$
 $142857 \times 2 = 285714$
 $142857 \times 3 = 428571$
 $142857 \times 4 = 571428$
 $142857 \times 5 = 714285$
 $142857 \times 6 = 857142$
-
- 2999997
-
82. Area of 2nd circle = 3(area of 1st circle)
Area of 3rd circle = 3(area of 2nd circle) = 3 (3(area of 1st circle))
∴ Area of 7th circle = 3⁶(area of 1st circle)
=> radius of 7th circle = $\sqrt{3^6}$ (area of 1st circle) = 3³ = 27
83. To find out the number of zeroes apply the following: $n(10^{n-1} + 1) - 10^n - 1/9$ where 'n' is the number raised to the power of 10. As one lakh equals 10⁵ substitute n = 5 to get the answer (ie) 38894. Choice (2)
84. Minimum number of steps involved is six (6). The sequence is as below:
- | START | I | II | III | IV | V | VI |
|-------|-------|-------|-------|-------|-------|-------|
| 0 0 8 | 0 5 3 | 3 2 3 | 0 2 6 | 2 0 6 | 2 5 1 | 3 4 1 |
85. Choice (4). Pupil who like at least one of the three magazines = $A \cup B \cup C$
= $78 + 72 + 90 - \{28 + x + 22 + x + 10 + x\} + x$, where x is those who like all three magazines.
 $A \cup B \cup C = 180 - 2x$.
The maximum number of pupil who do not like any of the three magazines = 200 - minimum number of pupil who like at least one of the three magazines.
The minimum value that $A \cup B \cup C$ can take will be dependant on the maximum value that x can take.
X can take a maximum value of 22 (as when x = 22, we get B taking a value of 72). Therefore, $A \cup B \cup C$ will take a minimum value of 180 - 44 = 136. Therefore, the maximum number of students who do not like any of the magazines = 200 - 136 = 64.
91. Docile means "submissive" therefore obedient is the closest meaning and hence 3.
92. Neophyte means a novice or beginner , Tyro also means the same and hence 1.
93. Retinue means a group of attendants. Therefore 4 is the right choice.
94. Gainsay means to oppose or to deny . Hence 1.
95. Accomplice means an associate in wrong doing. Hence 3.
97. Conundrum means a riddle or a difficult problem . Among the given choices only 1 is suitable.
98. The paragraph clearly begins with B and has an AC link
99. The volunteers mentioned in C are the students as described in A. Hence A follows C. Note that only option4 has this and others can be eliminated.
100. Sentence D says, " if it is right" which refers to woman's suffrage in B. Hence D follows B and the only suitable choice is 2.
101. The pricing theory mentioned in D is the Red-Scholes theory and hence the DA link. Also, D clearly is the opening sentence. Therefore 3 is the right choice.
102. Here, if you look at the second blank, practicable is most appropriate and therefore other choices can be eliminated.

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103. One has to be aware of the synonyms for the words Bourgeoisie and proletariat to answer this .
104. "Tide Over" the crisis is the right usage and hence 4.
105. Artistic splendour and symbolic expression best complete the sentence. The best way to answer these type of questions is by elimination of other choices.
106. labyrinth means something extremely complex in structure or arrangement and vagaries means unpredictable actions. Hence 2 is the right choice.
107. In standard written english, Neither - Nor and Either- Or have to be used in sync. Though one might argue that 1 or 4 would suit, 1 is incorrect as it changes the meaning of the sentence.
108. 3 is the right as in this context should we be told is not appropriate as mentioned in choices 1 and 3.
109. Paralellism. Right usage is to refine and to increase. Hence 1.
110. Note that the sentence says about the response of both married and unmarried woman to social stress. Only option 3 gives the correct usage.
111. Parallel construct. option 2 is more concise and clear.
112. The authors style and ideas present indicate that he is very unlikely to be an aircraft engineer.
113. Refer line 2 of the first paragraph.
114. The last sentence in para 1 says that it would be a perfect opening scene for the remake of last horizon. It can, therefore, be inferred that it was a movie.
115. The tone of the author in the first 3 paras suggest that the author had a negative opinion.
116. Refer first line of the passage. Hence 2.
117. The author clearly tries to convey how nerves send messages along with other supporting details. Hence 4.
118. Refer line 1 of the 2nd para where the author states that Nerve cells are remarkable as they communicate with each other.
119. Refer line 3 of the 2nd para.
120. Choices 2 and 4 seem to be categorical statements and hence eliminated. Choice 3 is the right answer.
121. Refer line 1 of the 2nd para.
122. Only choice 1 is within the scope of the passage.
123. Synthetic means Artificial. Hence 1.
124. Refer line 2 of the passage.
125. This is a specific detail question and the answer can be directly obtained from line 9 of the passage.
126. Remember, categorical statements like 1 and 2 will not be answers, unless stated explicitly in the passage. There is no mention of it being cheaper than copper too. Hence 3.
127. The overall idea is to tell people to live and enjoy life. 3 limits its scope to married women as per the passage.
128. Refer line 2 of the 1st para.
129. Refer line 2 of the second para. Martha is talking to the author of the passage.
130. First sentence of the 3rd para states that telomerase is an enzyme.
131. From the passage , none of the results are unlikely.
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132. 1 as passage only says that Maclean distributes the newsletter. Nothing is mentioned about who produces it.
133. Para 1 suggests that 3 is the right choice.
134. Line 3 of the 3rd para says that such criticisms hence 3.
135. Only choice 3 is appropriate.