# CAT 2002 Answer Key

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| 1. | 2 | 41. | 2 | 81. | 4 | 121. | 1 |
| 2. | 2 | 42. | 2 | 82. | 4 | 122. | 4 |
| 3. | 2 | 43. | 4 | 83. | 4 | 123. | 1 |
| 4. | 4 | 44. | 4 | 84. | 3 | 124. | 3 |
| 5. | 3 | 45. | 2 | 85. | 2 | 125. | 1 |
| 6. | 2 | 46. | 3 | 86. | 4 | 126. | 3 |
| 7. | 2 | 47. | 2 | 87. | 4 | 127. | 2 |
| 8. | 4 | 48. | 1 | 88. | 2 | 128. | 3 |
| 9. | 3 | 49. | 4 | 89. | 1 | 129. | 4 |
| 10. | 1 | 50. | 2 | 90. | 1 | 130. | 1 |
| 11. | 3 | 51. | 4 | 91. | 4 | 131. | 1 |
| 12. | 3 | 52. | 4 | 92. | 2 | 132. | 4 |
| 13. | 1 | 53. | 3 | 93. | 4 | 133. | 4 |
| 14. | 1 | 54. | 2 | 94. | 4 | 134. | 4 |
| 15. | 3 | 55. | 2 | 95. | 1 | 135. | 2 |
| 16. | 1 | 56. | 3 | 96. | 3 | 136. | 4 |
| 17. | 3 | 57. | 2 | 97. | 3 | 137. | 2 |
| 18. | 4 | 58. | 3 | 98. | 3 | 138. | 2 |
| 19. | 1 | 59. | 4 | 99. | 1 | 139. | 4 |
| 20. | 1 | 60. | 4 | 100. | 3 | 140. | 2 |
| 21. | 3 | 61. | 3 | 101. | 3 | 141. | 4 |
| 22. | 4 | 62. | 2 | 102. | 2 | 142. | 1 |
| 23. | 3 | 63. | 2 | 103. | 4 | 143. | 1 |
| 24. | 3 | 64. | 3 | 104. | 2 | 144. | 2 |
| 25. | 3 | 65. | 2 | 105. | 4 | 145. | 1 |
| 26. | 3 | 66. | 4 | 106. | 3 | 146. | 3 |
| 27. | 4 | 67. | 2 | 107. | 1 | 147. | 4 |
| 28. | 1 | 68. | 3 | 108. | 3 | 148. | 3 |
| 29. | 3 | 69. | 4 | 109. | 4 | 149. | 1 |
| 30. | 2 | 70. | 4 | 110. | 2 | 150. | 3 |
| 31. | 4 | 71. | 1 | 111. | 3 | | |
| 32. | 1 | 72. | 2 | 112. | 1 | | |
| 33. | 3 | 73. | 1 | 113. | 4 | | |
| 34. | 4 | 74. | 2 | 114. | 3 | | |
| 35. | 1 | 75. | 3 | 115. | 1 | | |
| 36. | 4 | 76. | 2 | 116. | 4 | | |
| 37. | 3 | 77. | 1 | 117. | 3 | | |
| 38. | 2 | 78. | 4 | 118. | 2 | | |
| 39. | 2 | 79. | 3 | 119. | 3 | | |
| 40. | 2 | 80. | 2 | 120. | 2 | | |

# CAT 2002 Solutions

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| 1. | The price per kg for the 4 options will be prop to 17/15, 20/11, 16/15 and 20/26. It is the highest for the second option |
| 2. | = 0.16*5760 / 0.15 * 1055 = 5.6 |
| 3. | R9 is the crop that is common |
| 4. | Option (4) is correct. Eg R2,R6,R1,R4 etc. |
| 5. | R9, R10 and R11 are the crops |
| 6. | In this set, first write down the ranks on the paper itself. Then have a look at the questions WB, TN, MA, KA, and AP are such states. Hence answer is 5. |
| 7. | UP has changed 2 times. |
| 8. | A closer scrutiny makes it clear that only in the case of AP, the revenue has more than doubled where as others have increased at a rate which is lower than that of AP. So AP's share has definitely increased. |
| 9. | Check from figures given - it is between 98-99 and 99-00. |
| 10. | It was for KA between 00 and 99 and 01 and 00 increase of 574 cr |
| 11. | Check from data collated for first question of the set. |
| 12. | Check using the options. The age of the husband and wife come to be 24 and 21. So younger boy is 2 years old. There are two possible age of the two brothers. Either (2 and 4) or (3 and 9). Only 2 and 4 satisfies the case. Option (3) |
| 13. | There are a total of 180 people in the hall. Total capacity is 240. After flight A people embark, 80 people remain. Capcity of flight A is 120, so that of B is also 120. No of seats vacant in B is 40. No of airhostesses in A is 80/20 = 4. So ratio of vacancies to hostesses is 10:1 |
| 14. | The foll table will help: Signal Speed Distance Direction 0  20  10 km N 1  40  10 km W 2  40   20 km N 3  100 40 km E 4  40  10 km  N Total distance = 10 + 10 + 20 + 40 + 10 = 90 km Table  not visible in site. |
| 15. | The distance will be $(30^2 + 40^2)^{0.5}$ = 50 km - approx to the NE Square sign is coming as 302+402 |
| 16. | It starts with 1 Green and then in the 1$^{st}$ signal it becomes 1 red and 2 green.The new distances become 10 N, 10 E, 20 S, 40 W and 10 S. So final position of 30 W and 20 S |
| 17. | Can be done on similar lines to above questions. |
| 18. | Using both the statements the score before the last 5 min started could be either 2-0 or 3-1. In the first case there is a draw, in the second case india wins. So option is (4). |
| 19. | If it is divisible by adding 12, then it will be divisible by adding 4 ( 12-4=8) |
| 20. | In first option we get x/y + y/x = 2, which is only possible if x=y. |

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| 21. | Only after combining both the statements the question can be answered. First will give cost relation with SP. Second will give SP. |
| 22. | There is no exact relationship between the median and the average. |
| 23. | From Stmt B we get 2 ranges ( $-1 < x < 3$ ) and from statement A we get ( $x < -1$ or $x > 1$). Individually both cannot answer , but when we combine we get ( $1 < x < 3$) which is sufficient to answer the questions. |
| 24. | No of people speaking French only is 300 -(196 + 58) - so 3 is the answer. |
| 25. | From the 2 equations we can find the value of J and P in terms of G. So we can find out who received the lowest ( although not the exact values) |
| 26. | The doctor got the most no. of admission offers i.e. 3 Ashish isn't engg. Sameer is an economist. Dhanraj isn't engg. Hence Felix is an engg.. Ashish can't be a doctor, since he didn't got the maximum no. of offers. Hence Dhanraj is a doctor, while Ashish is a  C.A. The person getting 2 offers is neither Dhanraj nor C.A. i.e. Ashish. Felix also didn't get 2 offers ,since he got less offers than Ashish. Hence Sameer got offers from 2 IIMs Hence, No of offers :    0        1        2        3 Student    :  Felix   Ashish   Sameer   Dhanraj Degree     :  Engg    C.A.    Econ.    Doctor. Hence (3). |
| 27. | 4$^{th}$ option. |
| 28. | 1$^{st}$ option |
| 29. | 3$^{rd}$ option |
| 30. | 1 out of 5 countries located within in 10E & 40E line lie in the southern Hemisphere. Hence 20%. |
| 31. | 4$^{th}$ option as there are 10 cities which begin with a consonant and lie in the northern hemisphere and 13 of the other kind. |
| 32. | Argentina, Australia, Equador and Ottawa, Accra. 3:2, 1$^{st}$ option. |
| 33. | Following are the worker nos. Who have earned more than 50 rupees per day in difficult operation. 2001151,2001158,2001164, 2001172,2001173 i.e. 5 hence 3$^{rd}$ option. |
| 34. | There are 7 workers who satisfy the given condition whose no. are given below. 2001147,2001151,2001172,2001173,2001174,2001 179,2001180. Hence 4$^{th}$ option. |
| 35. | Among the options given 2001180 satisfies the given condition. Hence 1$^{st}$ option. |
| 36. | There are 7 such workers  whose no. are given below.  2001148, 2001149, 2001150, 2001151,2001158, 2001171,2001172 |
| 37. | 3374*5/100 =168.7 .There are 4 such operation on Spain ,Latin America, North sea, Rest of world. Hence (3). |

| 38. | There are 2 such operation , Namely Spain ,Rest of Latin America. Hence (2). |
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| 39. | There are 4 such operations, namely, North Africa, Argentina, Rest of Latin America & Far East. Hence (2 ). |
| 40. | Average % increase = (1375  - 248) /248*100 = 454.43%. There are only one operation Argentina which shows more than average % increase in net income before taxes & charges from 1998-1999 ( 838-94) /94*100=791.48%.Hence ( 2 ). |
| 41. | Profitability of North Sea in 1998=21/51=.41. Profitability of North Sea In 1999 = 55/64=.85. Hence ( 2 ). |
| 42. | Spain shows the best Profitability in 2000 as income after tax and charges is greater than expenditure. For all other countries expenditure is greater than income after tax & charges . Hence (2). |
| 43. | Rest of world operation in Rest of the world is least efficient . All other values are more than 1. Hence (4 ). |
| 44. | In year 1998, The operation has least efficiency as its value is significantly less than one, followed by Rest of Latin America. Hence,(4 ). |
| 45. | Least cost of sending one unit from factory to any district is zero, this is done through  BC-AC-AAC. Hence (2 ). |
| 46. | Least cost of sending one unit from any factory to the district AAB is 95.2 which is possible through AAB-AE-BD. Hence (3). |
| 47. | Least cost of sending one unit from factory BB to any district is a 311.1 which is possible through BB-AB-AAG. Hence (2). |
| 48. | Least cost of sending one unit from factory BB to city AAA is 451.1+314.5=765.6 which is possible through BB-AC-AAA. Hence (1). |
| 49. | Number of possible ways of sending one unit from any city is 6*7*9=378.Hence,(4 ). |
| 50. | The largest cost of sending 1 unit from any factory to any city is 1035.3 + 1157.7 = 2193.0 which is possible through BF-AE-AAH. Hence (2). |
| 51. | Putting $n = 1$, we get $7^6 - 6^6$ which can be written as $(7^3)^2 - (6^3)^2 \Rightarrow (7^3 + 6^3)(7^3 - 6^3) \Rightarrow 559 \times 127$. Also $7^6 - 6^6$ is divisible by 13. So it is divisible by 13, 127 and 559. So answer is $4^{th}$ option. |
| 52. | The white square can be chosen in 64/2 = 32 ways. The black square can be chosen in $32 - 8 = 24$. So total number of ways = $32 \times 24 = 768$. |
| 53. | This relationship is satisfied for $u = 3$, $v = 4$, $w = 5$ & $m = 2$. So m is less than min of $u$, $v$ and $w$. |
| 54. | Now AB = 25. Now $½ \times 15 \times 20 = ½ \times 25 \times CD \Rightarrow$ CD = 12. So AD = 9 and BD = 16. So inradius of $\triangle ACD = (½ \times 9 \times 12) / 18 = 3$. Also inradius of $\triangle$ CDB = $(½ \times 16 \times 12) / 24 = 4$. So horizontal distance PQ = 3 + 4 = 7. Vertical distance is 4-3= 1. PQ = $\sqrt{(7^2+1^2)} = \sqrt{50}$. Hence answer is $2^{nd}$ option. |
| 55. | Each eats (5 + 3)/3 = 8/3 loaves. Ratio of money that they should share is (5 - 8/3) : (3 - 8/3) = 7/3 : 1/3 or 7:1. So first should receive 7. |
| 56. | Let the middle string be $x$. So $x + 3x + 3x - 23 = 40$. Solving we get $x = 9$. And shortest string is 27 – 23 = 4. |

| 57. | Let the speed of cat = 1 kmph and let the total distance = 8 km. So cat is at 3 km from entrance and 5 km from exit. In the first case, when the train and the cat are meeting at the entrance, we say that cat is covering 3 kms in 3 hrs. In the $2^{nd}$ case, cat is covering 5 kms in 5 hrs as it catches the train at the exit which further means that the train has covered (3 + 5) i.e 8 kms in (5 − 3) i.e 2 hrs. So speed of train is 4 kmph. Hence the ratio of their speeds is 4 : 1. So answer is $2^{nd}$ option. |
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| 58. | The original arrangement is S -D -A- R- P- Y- S. Now make the substitutions and get the answer. |
| 59. | Total of 60 manhours are required. At 5 pm, $6 \times 6 =$ 36 manhours have already been put in. Balance = 60 -36 = 24. In 3 hours, 7 + 8 + 9 = 24 more manhours would have been added. So the work gets over at 8 pm. |
| 60. | If KL = 1, then IG = 1 and FI = 2 Hence, tan θ= 2/1  = 2 Thus, θ is none of 30, 45 and 60°. |
| 61. | Area of ABCD = $½ (2x + 4x)4x = 12x^2$. Area of DEFG = $½(5x + 2x)2x = 7x^2$. So the ratio of the areas is 12 : 7. |
| 62. | M = ½ (60- M). So M = 20. Similarly we get Z = 15 and L = 12. So M + Z + L = 47. And J = 60 – 47 = 13. |
| 63. | From options, check with 36. To first guard he gives 18 + 2 = 20 and balance = 16. To the second he gives 8 + 2 = 10 and is left with 6. Finally he gives 5 to the last and is left with 1. |
| 64. | Area covered in the first round is 10+19+39+18 = 116. In subsequent round the area covered decreases by 8. In three rounds 116+108+100 = 324 area has been covered. Balance for covering half is 400-324 = 76. So it will take 76/92 = 0.8 rounds more approx |
| 65. | We know that $(x + y + z)^2 = x^2 + y^2 + z^2 + 2xy + 2yz + 2zx$. So $25 = x^2 + y^2 + z^2 + 6$. So $x^2 + y^2 + z^2 = 19$. If $y = z = 0$, then $x^2 = 19$ or $x = \sqrt{19}$ . For all other values, $x^2 < 19$. So maximum value for $x$ is $\sqrt{19}$ . |
| 66. | $X_0$ is positive. $X_1$ & $X_2$ are negative, $X_3$ & $X_4$ are positive, $X_5$ & $X_6$ are negative and so on. |
| 67. | Check from options, the sum of 25 and 16 is 41. Difference of 54 and 41 is 13 |
| 68. | The distance of the first gutter from A is 2.5 km (also that of gutter 3 from B). Using this we can find distance between gutters 1 and 3 as 20 - (2.5 + 2.5) = 15 km. Now time taken to reach gutter 1 is 5 min. To travel the balance 15 + 17.5 = 32.5 km, it will take 32.5 minutes. It will take 1 min for loading. So total time is 5 + 32.5 + 1 = 38.5. So 1.5 minutes is balance. |
| 69. | Now $½ BE \times AB = 7$. Area (ABCD) = AB × BC. Now BC = 4 BE. So AB × BC = 4 × BE × AB = 56 |
| 70. | Total distance travelled is (100 + 98) + (98 + 96) + (96 + 94) + (94 + 92) + 92 = 860 m. |
| 71. | Area of square is 14 ×14 = 196sq.m. Area of 4 quadrants at the edges = 1 circle of radius 7 = 22/7 × 49 = 154. Ungrazed area is 196 – 154 – 20 = 22 sq.m. |
| 72. | Substitute for each of the options - it fits for option 2. |
| 73. | We will get a right triangle joining the centres and half the common chord. The altitude is the common |

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| | chord = 15 × 20/25 = 12. So total length of common chord will be 12 × 2 = 24. |
| 74. | The bisector needs to have a value which lies between the lengths of its corresponding sides, which are 3 & 4. Thus the length of AD has to lie between 3 & 4. Options 2 and 4 are less than 3 and so cannot be the answers. Option 3 is more than 4. Thus 1$^{st}$ option is the answer. |
| 75. | We can have 8 + 7 +……1 = 36 ways in which $n_1$ is the first of the triplet. 28 ways with $n_2$, 21 with $n_3$, 15 with $n_4$, 10 with $n_5$, 6 with $n_6$, 3 with $n_7$ and 1 with $n_8$. Total these values and we get 120. |
| 76. | Let big pump have capacity 3$x$ lpm. (Big pump alone will take time proportional to 1/3$x$). Small pump will have capacity 2$x$. All together have capacity = 3 × 2$x$ + 3$x$ = 9$x$. Time taken will be proportional to 1/9x. So ratio of times will be 1:3. |
| 77. | Revenue for 240 is 1.8 × 240 = 432. For 300 it is 1.5 × 300 =450. For 400 it is 1 × 400 =400. So max is at 300. |
| 78. | Number of 2s – Number of 4s = Number of oranges = 6 - 4 = 2. |
| 79. | Similarly 19 – 4 × 2 = 11. |
| 80. | Line joining ($a$, $a$) & ($a$ + 2, a) is parallel to $x$-axis . This distance between the two points ($a$, $a$) & ($a$ + 2,$a$) is 2. The distance of point ($a$ + 1, $a$ + 1) from base (x-axis) is 1. So area of the triangle is ½ × 1 × 2 = 1. |
| 81. | checking with standard triangle 3,4,5. While travelling through sides one travels 3+4=7 and the diagonal is 5, so saving is half of longer side 4. Hence option (4 ). |
| 82. | Let the normal speed of the train S be $x$ km / hr. ∴the normal speed of train N is 4$x$ km / hr. Let the train N leave station A at 1 pm. It is late – so it leaves at 1.20 pm By doubling its speed, it reaches B in time. When train N doubles its speed its new speed is 8$x$ km / hr. So the distance AB in terms of $x$ can be calculated as below: D / 4$x$ is initial time D / 8$x$ is time taken when it starts late. The difference between the two is 20 minutes = 1 / 3 hours Equating we get D/4$x$ – 1 / 3 = D/8$x$. So D = 8$x$ / 3 Meeting point of the trains – is important – since there is only a single line. To travel a distance of 8$x$ / 3, the slow train requires to start (8$x$ / 3) / $x$ hours before 1 pm. So it should start at 8 / 3 hours before 1 pm – Or at 11.20 am. At 1 pm, it will have covered 5$x$/3 km. So the distance it will require to cover to reach A will be 8$x$/3 – 5$x$/3 = $x$. The relative speed at which the two trains move each other normally is 4$x$ + $x$ = 5$x$ So they will meet at a time = $x$ / 5$x$ = 1/5 hours after 1 pm. Or at 1.12 pm At this time train S is 4$x$/5 km from A. Now the train S is delayed and starts at 1.20 pm. Travelling at a speed of 8$x$, it will take 4$x$ / 5 / 8$x$ = 1 / 10 hours to reach the meeting point. So it will reach the meeting point at 1.20 + 6 = 1.26 pm. The slow train has been waiting at the meeting point for the fast train to pass. It starts at 1.26 pm, but it has to cover the balance distance of 4$x$ / 5 km in 2.00 – 1.26 = 34 minutes. So its new speed will |

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| | be (4$x$/5)/(34/60) km/h. Ratio of its speed to superfast speed will be (4$x$ / 5) / (34 /60) : 8$x$ or (4$x$ * 60) / ( 5 * 34 * 8 ) : 1 = 1 : 17 / 3 = approximately = 1 : 6. |
| 83. | Let the unequal parts be $x$ and $y$ out of which $x > y$. So total number of coins = $x$ + $y$. Now, as per the question, 48($x$ - $y$) = $x^2 - y^2 \Rightarrow x + y$ = 48. So answer is 4$^{th}$ option. |
| 84. | Let the number of days he stayed there be $x$. The number of days he go for yoga be $c$. The number of days he played tennis be $d$. So $c + d$ = 22-------(1), ($x - c$) = 24--------(2) & ($x - d$ )=14---------(3) adding (2) & (3) we get 2 × $x$ - ($c + d$) = 38. 2 × $x$ – 22 = 38 $\Rightarrow$ 2 × $x$ = 60, so $x$ = 30. Hence (3). |
| 85. | (10$b$ + $a$) - (10$a$ + $b$) = 1.8 × 10. So $b – a$ =2.Hence (2). |
| 86. | Sushil either paid as per km tariff or as per hour tariff. If he had paid as per km tariff, the per km charge should be 350/30 = Rs11.66 per km. But the per km tariff is either Rs12 per km or Rs7.50 per km. Hence he must have paid as per hour tariff. Upto 5 hrs., rent would be 5 × 60 = Rs.300. For rent more than 300,number of hours=350/50 = 7hrs. So he rented the car for 6 hrs. Hence (4 ). |
| 87. | We need to find the sum of the natural numbers which is just greater than575. By hit & trial method, we find that sum of 1$^{st}$ 34 natural numbers is 34 × 35/2 = 595. He found the sum as 575. So he must have missed 595 – 575 =20. Hence (4). |
| 88. | If $x$ & $y$ are integers, then R($x$, $y$) =L($x$, $y$). Taking x=1 & y=1 L(x,y) = R(x,y) = 4 .So option 1 is possible. Suppose $x$ =1.6 & $y$ =2.5 ,then L($x$, $y$) = 1+ 2 + 4 =7. R($x$, $y$) = 3 + 5 = 8. Again L($x$, $y$) < R($x$, $y$). We find that there are no real values of $x$, $y$ for which L(x,y) > R(x,y) Hence (2 ). |
| 89. | Two intersecting lines gives 4 such regions. 3 lines gives 4+3=7 regions.4 such lines gives,7 + 4 = 11 regions & so on. We find that for $n$ lines, number of regions = ($n$)($n$+1)/2 + 1. So 10 lines will give 10 × 11/2 +1=56 regions. Hence (1). |
| 90. | $2^4$=16. So remainder when $2^4$ is divided by 17 is 16. So $(2^4)^2$ when divided by 17 leaves remainder as 1. So $2^{256}$ also leaves remainder as 1. |
| 91. | If both A & B are not zero, then a quadratic equation results & we get 2 roots. For example, if A = B = 1, 1/$x$ +1/($x$ -1) =1 $\Rightarrow$ 2$x$– 1=$x^2 –x \Rightarrow x^2$- 3$x$ + 1 = 0 $\Rightarrow$ $x$ = 3 ± sqrt(5/2). if any one of A & B is zero, we get only one root of $x$. Hence (4). |
| 92. | Since the three words appeared for 5/2,17/4,41/8 seconds, each word stay for next 1 seconds. The time after which a person can completely see all the letters is equal to the L.C.M. of (5/2 +1), (17/4 + 1), (41/8 + 1); i.e. L.C.M. of 7/2, 21/4, 49/8 = L.C.M. of 7, 21, 49/H.C.F. of 2, 4, 8 = 147/2 = 73.5 seconds. Hence (2). |
| 93. | We need to find H.C.F. of 4.5, 6.75, 7.2. Now 450 = $3^2$ × $5^2$ × 2, 675 = $3^3$ × $5^2$, 720 = $2^4$ × $3^2$ ×5. H.C.F. = $3^2$ × 5 = 45. Hence the parts will be of size 0.45m. Hence number of guests is 10 + 15 + 16 i.e. 41. Hence (4) |
| 94. | This problem is best solved by checking options. In option (4), 84 + 53 = 137.This when divided by 3, 4 & 7 leaves respectively 2, 1&4 as remainder. No other option satisfies this. Hence (4). |

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| 95. | There are 11 symmetric letters. Number of 4 letters words with all prime letters is 11P4 = 11 × 10× 9 × 8 = 7920. Hence (1). | 118. | The subjects as to what happens, should come together, which happens in B. |
| 96. | 26P3 is the number of ways in which any 3 letters can be arranged without repetition. (26 – 11)P3 is the number of ways in which any 3 asymmetric letters can be arranged. Hence the number of ways in which the letters can be arranged with at least one symmetric letter is 26P3 - (26 – 11)P3 = 12870. Hence (3). | 119. | "create a difference" is the correct usage. |
| | | 120. | If risk goes down, gambling will be encouraged. |
| | | 121. | Opprobrium – harsh criticism |
| | | 122. | Portend – bode |
| | | 123. | Prevaricate – speak evasively |
| | | 124. | Restive – restless |
| | | 125. | Ostensible – apparent |
| 97. | This can be best solved by substitution method. Try different combinations. For example put $p = 1; q = r = -1$, We get the value of the expression as equal to 1. Only option (3) satisfies this. Hence (3). | 126. | The Indian historians started writing history from there perspective rather than that of British officials. |
| | | 127. | Evident from the line – break new ground means starting something new and deepen a furrow means establish a perspective. |
| 98. | We can make upto 6 digit numbers, using digits 0, 7, 8. So total number of six digit number so formed is $3^5$. But one of these numbers is zero which is not possible. $3^5$ -1. Hence option (3). | 128. | "But when the raj was settled down, glamour departed from politics, and they turned to the less glorious…" |
| | | 129. | Can be inferred from the last few lines. |
| | | 130. | Orme is given in the first paragraph, Dodwell in the second and Dutt in the third. |
| 99. | $S = 2 + 5x + 9x^2 + 14x^3 + ...$ <br> $xS = 2x + 5x^2 + ...$ <br> $S(1- x) = 2 + 3x + 4x^2 + 5x^3 + ...$ <br> Let $S_1 = S(1- x) \Rightarrow S_1 = 2 + 3x + 4x^2 + ...$ <br> $xS = 2x + 3x^2 + ...$ <br> $S_1 (1- x) = 2 + x + x^2 + ...$ <br> But $x + x^2 + x^3 + .... = x/(1-x)$ <br> So, $S_1(1 - x) = 2 + x/(1 - x)$ <br> $S (1 - x)^2 = 2 + x/(1 - x)$ <br> $\Rightarrow S = 2 - x/(1-x)^3$ | 131. | "men have "given" women the right to contraceptive use and abortion access when their countries were perceived to have an overpopulation problem" – from this line we can infer that the author is referring to India and China as both have an over population problem. |
| | | 132. | The matriarchal approach is mentioned in a different context. |
| | | 133. | "They view the foetus as a human life rather than as an unformed complex of cells; therefore, they hold to the belief that abortion is essentially murder of an unborn child" – hence a pro-life person will never advocate abortion. |
| 100. | This can be done by checking options. Since (A) relates only two of the three variables, this alone can't be true. Taking (B) & (C), we get $x = 4x$, so $x = z = 0$. This is not true. Taking (A) & (B), $x = 2 × y$ & $z = y$. So L.H.S. $= 4 × y × 2 + 5 × y × 2 + y × 2 = 10y × 2$. And R.H.S.$= 2y (4y + y) = 10y × 2 =$ L.H.S. Hence (3). | 134. | Can be inferred from the second last paragraph. |
| | | 135. | "These tragedies …led a number of stales to pass abortion permitting legislation." Hence we infer that the abortion laws were changed. |
| 101. | Note that size matches with cricket pitch and vessel matches with measuring oil. | 136. | The support came from Middle and Upper class Protestants. |
| 102. | A matches with E, B with G, and so on. | 137. | Refer to the third paragraph – "…'No Man's Land' is philosophy" hence it is an area where things are not certain. |
| 103. | Note that capture matches with Husain capturing the spirit, grasp matches with I could not catch you, and soon. | 138. | Philosophy is "is something intermediate between theology and science" hence it is complimentary |
| 104. | A matches with H, B with G, and so on. | 139. | As the passage is a discussion about philosophy, the author is probably a philosopher. |
| 105. | A matches with G, B matches F, and so on. | 140. | The author does not discuss the nature of the universe. He only asks some questions. |
| 106. | D matches with A and E matches with C. | 141. | First paragraph – "may also be helpful for treating diseases…" |
| 107. | The logical choice is A-C-E and note that F must follow C, which talks of unique value. | 142. | Note that trams and vehicular traffic are used to explain cell biology. |
| 108. | The matching sentences are B-E-A, and then C should follow D | 143. | The first three statements can be derived from the passage, but not the last two. |
| 109. | C "between the two" must come after Centre and states in E, and B is linked to D, with A as conclusion. | 144. | (a) and (c) can be directly inferred. |
| | | 145. | Only (a) and (b) are derived from the passage, (c) our muscles would not move without proteins and the Ronald is stated to be in University of California. |
| 110. | B introduces the subject, while E supports it, followed by D-C-A. | |
| 111. | The best option is "obviously" as it matches the sentence. | 146. | Can be derived from the first and third paragraphs. |
| 112. | The best word to match is quantitatively as it goes with the sens of the sentence. | 147. | Read the line, "The paying of attention to one's audience is called "rhetoric" – in the first three choices this is applicable, not in the last. The answer can also be inferred from the meaning of rhetoric as explained in the passage. |
| 113. | The sentence talks of alternatives, hence (4) | |
| 114. | Note that 'firing' goes with using the sun | |
| 115. | Arguments are resolved, hence (1) | |
| 116. | The sentence is best completed if we say allowed such a process to take place. | |
| 117. | C uses the sentence correctly and sums up the main idea. | |

| 148. | Economists use unfamiliar terms, hence we can infer (3). |
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| 149. | Arcane – something mysterious. |

| 150. | It is clear that rhetoric is used to persuade people (the example of elections etc make this clear). |
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