CAT 1991 Actual Paper

Answer and Explanations

1	a	**21**	c	**41**	b	**61**	b	**81**	a	**101**	d	**121**	c	**141**	c	**161**	c
2	a	**22**	c	**42**	d	**62**	c	**82**	a	**102**	d	**122**	b	**142**	c	**162**	d
3	b	**23**	c	**43**	d	**63**	a	**83**	c	**103**	a	**123**	b	**143**	c	**163**	a
4	b	**24**	c	**44**	a	**64**	c	**84**	b	**104**	d	**124**	a	**144**	d	**164**	b
5	b	**25**	b	**45**	b	**65**	b	**85**	a	**105**	c	**125**	c	**145**	c	**165**	a
6	a	**26**	b	**46**	d	**66**	c	**86**	a	**106**	c	**126**	d	**146**	c	**166**	d
7	d	**27**	c	**47**	d	**67**	a	**87**	c	**107**	a	**127**	a	**147**	d	**167**	a
8	b	**28**	a	**48**	d	**68**	b	**88**	b	**108**	a	**128**	b	**148**	d	**168**	a
9	c	**29**	d	**49**	a	**69**	a	**89**	b	**109**	d	**129**	d	**149**	b	**169**	d
10	d	**30**	d	**50**	c	**70**	c	**90**	d	**110**	c	**130**	c	**150**	b	**170**	a
11	a	**31**	d	**51**	c	**71**	c	**91**	b	**111**	c	**131**	a	**151**	b	**171**	a
12	c	**32**	a	**52**	b	**72**	c	**92**	b	**112**	b	**132**	c	**152**	b	**172**	d
13	c	**33**	c	**53**	a	**73**	d	**93**	a	**113**	d	**133**	b	**153**	d	**173**	c
14	c	**34**	d	**54**	a	**74**	d	**94**	c	**114**	b	**134**	b	**154**	b	**174**	a
15	d	**35**	b	**55**	b	**75**	d	**95**	d	**115**	d	**135**	d	**155**	c	**175**	a
16	b	**36**	c	**56**	a	**76**	b	**96**	c	**116**	d	**136**	c	**156**	b	**176**	d
17	c	**37**	a	**57**	c	**77**	a	**97**	d	**117**	d	**137**	b	**157**	d	**177**	c
18	d	**38**	c	**58**	d	**78**	b	**98**	a	**118**	b	**138**	c	**158**	d	**178**	b
19	c	**39**	c	**59**	c	**79**	d	**99**	a	**119**	a	**139**	b	**159**	a	**179**	d
20	a	**40**	a	**60**	c	**80**	b	**100**	c	**120**	a	**140**	a	**160**	d	**180**	b

1. a   The subject here is 'the best part', which is singular and should therefore be followed by a singular verb.

2. a   When using 'as well as' to introduce a complex subject, the phrase should be set off by commas, and the verb agrees with the main subject, which in this case is 'the professor'.

3. b   As the first part of the sentence provides the reason for his being unwilling to testify, 'because' should be used to introduce it. Moreover a comma should always be used to separate two distinct phrases in a sentence.

4. b   The pronoun should remain consistent throughout the sentence.

5. b   When 'either' and 'neither' are followed by 'or' and 'nor' respectively, the verb depends on the noun following 'or' and 'nor'.

6. a   The sentence has three different clauses, which should be separated by semi colons.

7. d   When 'neither' is followed by 'nor', the verb depends on the noun following 'nor'. In this case it is singular, hence the verb should also be singular.

8. b   Before a gerund a noun should appear in the possessive form.

9. c   The sentence does not need any commas.

10. d   The sentence needs no commas.

11. a   We should use 'who' for subjects who do the action. In the given sentence 'who' is the subject of the verb 'were'.

12. c   The correct usage would be, 'a network to facilitate contacts'.

13. c   The correct phrase would be, 'to the perceived problems'.

14. c   'The Indian Government's choice' is a singular noun and should have a singular verb 'stems'.

15. d   The correct quantifier to be used here is 'most'.

16. b   Here we should use the verb in past participle, i.e. 'you would have' as we are talking about an unreal past condition.

17. c   'Requires' should be replaced with 'assumes'.

18. d   The noun 'choice' is singular and should be followed by a singular verb 'invites'.

19. c   We already have a subject 'who' for the verb 'decided', so 'he then' is wrongly used here.

20. a   'Of' should be replaced with 'off'.

21. c   Here minorities are being treated as a specific group and should therefore be preceded by 'the'.

22. c   'Aspiring' cannot be used as an adjective for students here, as those who are studying management are already students.

23. c   D. introduces the 'institutional truth of the financial world', B. elaborates the idea, A continues with B. and C. presents the conclusion.

24. c   B. introduces the subject of the passage, C. elaborates on the idea, and use of 'then' in A. shows that it should follow D.

25. b   A. introduces the age of pragmatism as the topic of the passage, C. explains what has changed in the new age, B. explains the characteristic of the old world and D. comments on the position today.

26. b   D. shows that the passage is about cognitive age, B. explains what it implies, A. talks about a research related to the subject and C. explains the implications of the research.

27. c   The sentence C. introduces 'her eyes', and should be the first sentence. A. elaborates on the eyes, so A should follow C. No other option has CA as the mandatory pair. So, answer is (c).

28. a   B. shows that the topic is 'intelligence', D. uses 'these' to refer to the different abilities associated with intelligence, as presented in B. A. explains what intelligence actually is and C. talks about the true test of intelligence.

29. d   The passage is about difference in pronunciation of words in different situations. A. explains what the difference is. Use of 'further' and 'yet' in D. and B. respectively show the order in which they should occur.

30. d   Broad and powerful thinking is needed to solve the problems.

31. d   The funds are being 'raised' for the purpose of having money to spend on the search of alternative sources of energy.

32. a   If you look before you leap you will be forewarned and thus can be forearmed.

33. c   As the king, the fate of the economy and the subjects would be in the ruler's hands.

34. d   We should be prepared to 'break' something to 'reconstruct' it.

35. b   If the future is upon us before we realize it, it will shape us rather than the other way round.

36. c   Some nurses are qualified and all nurses are attendants. This implies that some of the attendants are qualified.

37. a   If Mary and John are wife and husband and the last waltz was danced by husbands and wives, it follows that John danced last with Mary.

38. c   If all roses are plants need all plants need air, then all roses will also need air.

39. c   Laxman is a man and no man is an island, so Laxman cannot be an island.

40. a   If college students are intelligent and Ram is a college student, it follows that Ram is intelligent.

41. b   If all cigarettes are hazardous to health and cham-cham is a brand of cigarette, then cham-cham would also be hazardous to health.

42. d   If all good bridge players play good chess, then Goran being a good bridge player should also play good chess.

43. d   If all snakes are reptiles and all reptiles are cold blooded, it implies that all snakes are cold blooded.

44. a   If all leaves have chlorophyll and all plants have leaves, it follows that all plants have chlorophyll.

45. b   If bald people are intelligent and Raman is bald, it follows that Raman is intelligent.

46. d   Some gentlemen are barbarians and no gentlemen are rude. Therefore the gentlemen who are barbarians are also not rude, implying that some barbarians are not rude.

47. d   Desks are made of metals. So if an object is a desk it should be made of metal.

48. d   Mathew and Paul are siblings and siblings are known to quarrel often. Therefore it follows that Mathew and Paul quarrel often.

49. a   Art is a symptom of culture and music is a form of art, therefore music also shows culture.

50. c   If primary colours give different hues, and red is a primary colour, it implies that red also gives different hues.

51. c The first statement only gives the comparison of the selling prices. You must realise that this information is itself won't be enough to answer the question as the profit also depends on cost. So we also need to analyze the second statement. And since there is no other constraint on production, we can solely compare the profitability of two products on the basis of labour. According to it, if 10 units of labour is available, it can produce 5 units of Q and 2 units of R. So, from 10 units of labourr, I can earn (5 x 1) = 5 units of sales revenue from Q and (2 x 4) = 8 units of sales revenue from R. So by taking both statements together we can determine which would be more profitable.

52. b In order to solve the question, we need to know two things : (a) the original speed of the train or the new speed of the train and (b) at what distance from A or after how much time after leaving A did the train breakdown. The second statement provides both of these data (viz. Original speed = 20 kmph and distance from A = 40 kms.) and hence only this is required to answer the question. For eg. If the distance between A & B is considered to be x, then time taken had he not broken down is x/20. The time taken now is [2 + (x – 40)/5] and we know that this time is 40 min. more than the original time. Hence our equation becomes : x/20 + 40/60 = [2 + (x – 40)/5], which can be easily solved to get value for x.

53. a The best way to answer this question is the method of simulation, where in you take a value of prime number and verify which one fits into that data For example, you should be in a position to figure out that the second data cannot give you a unique answer as there may be many prime numbers whose cubes will be a 3-digit number. Let us evaluate the first statement. One prime number which satisfies this condition is 7 as $7^2 + 7 = 56 > 50$. The next prime number after 7 is 11 and $11^2 + 11$ is not a 2-digit number. Hence we have a unique answer from the first statement itself.

54. a By knowing the average of 3 quotations, we can find the sum of the 3, which is 330. And knowing that the lowest one is 100, we can say that the sum of other two has to be 230. The only way in which one of the quotations would be more than 129 is when the other one is 100 or less than that. But this cannot be as the lowest one of Rs.100. Hence only with the help of the first statement we can answer the question.

55. b From the first statement we have the following Venn diagram :
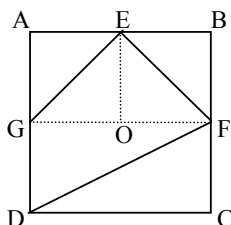Using this we cannot find the answer.

TOI (120)

Hindu (50)   IE (100)
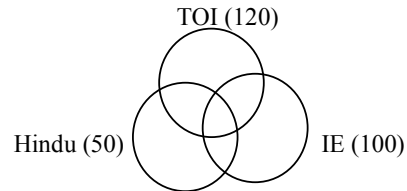
From the second statement however we can find the answer, as we get the following Venn diagram.

IE (100)   70   TOI (120)
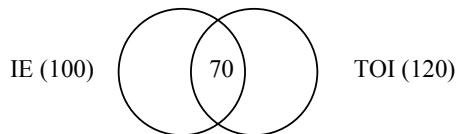
56. a If the ages of X and Y are considered as x and y respectively, then from the question it is very clear that x = 3(y – 3). From the first data we can find that x = y + 17. Since both of them are distinct equations, we can solve them simultaneously and get value for x. The second data gives : (x + 9) = 3y , which you would realise is the same as the first equation. Hence only the first data is required to answer the question.

57. c If the side of small square is x, we can find that the length of line ABCDEQ would be 10x. So from the first statement, we would get $10x \geq 60$ or $x \geq 6$. The length of the bigger square would now be 7x and the breadth would be 6x. Hence from the second statement we have $42x^2 \leq 1512$ or $x \leq 6$. Hence from the two statements we can find that x = 6. Knowing this we can find the area of 1 small square and hence answer the desired question.

58. d Ratio of the area to circumference of any circle is r/2, which from the first statement is > 7, hence r > 14. From the second statement we get $r \leq 16$. Hence even if we take both the statements together, we will not be able to find out the exact value of radius (we can only know the range).

59. c It is very clear that both the statements are required to answer the question. A flight that leaves at 9.00 am from New York should reach at 2.00 pm (according to New York time). This according to London time is 10.00 am. Hence we can find the distance between the two times.

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60. c   It can be easily figured out that the first statement doesn't give any information that could aid us. However with the help of the second statement the first statement becomes meaningful. Since Mr.Thomas has no segment common with Mr.Rahman it is obvious that as Mr.Thomas alights from the train, Mr.Rahman gets into it. So this station has to be D. Since Mr.Thomas travels between C & D and since he has two segments common with Mr. Murthy, the right order of the station is CED.

61. b   For each of the given expressions, you may have to simplify and express x in terms of y and hence verify for which one does the form & structure remain the same. In general, any function of the form $y = (ax + b)/(bx - a)$, reflects on to itself as we arrange it can be found that $x = (ay + b)/(by - a)$. Hence our answer is (b).

62. c   We know that for a system of two equations : $a1x + b1y = c1$ and $a2x + b2y = c2$ to have no solution, the following condition should be satisfied : $a1/a2 = b1/b2 \neq c1/c2$.
Hence, in our equations $2/k = -8/4 \neq 3/10$. So, $k = -1$.

63. a   There could be two possibilities. (i) The number ends is 57 (in which case the number would not be even) and (ii) the number begins with 57 (in which case we have only 5 even numbers viz. 570, 572, 574, 576, 578).

64. c   The best way to solve this question is the method of reverse substitution i.e. check out for the answer choices. We find that the option (c) is the most appropriate one. Thus if he had appointed 10 tailors earlier, each one would have had to do 48 shirts. Now if 4 of them don't report to the duty, each one of them would have to do 80, which is 32 more than originally planned per head.

65. b   Let Mushtaq have m cards, and let Iqbal have l cards. If Mushtaq gives Iqbal x cards, then we the equation : $l + x = 4(M - x)$ i.e. $4M - I = 5x$. Conversely if Iqbal gives Mushtaq x cards, then we have the equation : $I - x = 3(M + x)$ i.e. $I - 3M = 4x$. Solving the two equations we get, $M = 9x$ and $I = 31x$. In a pack of 52 cards the only possible value for I could be 31.

66. c   We know that $x + y + z = T$ and $x + 2y + 3z = R_T$, where
x = number of members belonging to exactly 1 set
y = number of members belonging to exactly 2 sets = 9
z = number of members belonging to exactly 3 sets = 1
T = Total number of members
R_T = Repeated total of all the members = (22+15+14) = 51
Thus we have two equations and two unknowns. Solving this we get T = 40.
In other words, the number of teachers owing at least 1 out of the three items = 40. Hence the number of teachers owing none = 50 - 40 = 10.

67. a   Let the 3 odd numbers be $(x - 2)$, x and $(x + 2)$. It is given that $3(x - 2) = 3 + 2(x + 2)$.
Hence x = 13. So the third integer is $(x + 2) = 15$.

68. b   There are four ways to go from A to the first level of nodes. Each of these 4 nodes in turn leads into two more ways to go to the second level nodes. Each of the second level nodes leads into two more ways to go to the third level nodes. And from here we have only one way each to go to B. Hence by simple calculation, total number of ways = 4 x 2 x 2 x 1 = 16 ways.

69. a   The diagram will as given below. Let us join the mid points using an imaginary line. Now, it is apparent that the quadrilateral EFDG is made up of 3 triangles viz. FDG, EOF and GOE. Also it is very apparent that
A ΔFDG = A Δ DFC. Also A Δ EOF = A Δ EBF &
A Δ GOE = AΔ GAE.
This proves that the area of the quadrilateral EFDG = area of the square not covered by the quadrilateral. Hence the ratio of the area of quadrilateral EFDG to that of the square = ½.

70. c $2^{73} - 2^{72} - 2^{71} = 2^{71}(2^2 - 2 - 1) = 2^{71}(4 - 2 - 1) = 2^{71}$.

71. c   The two equations can be simplified into $n \leq 2$ and $n \geq 2$. The only values that satisfies both these conditions is n = 2.

72. c   The best to solve this question is the method of reverse substitution. Hence we that the answer is (c), since $1/4 + 1/6 = 5/12$. HINT : Students please note that since the sum of the two numbers is 10 and you are required to find the larger of them, your answer has to be more than 5. So only verify for answers (c) & (d).

73. d   As it is apparent from the following diagram, the diameter of the inscribed circle is equal to the side of the square, while the diameter of the circumscribed square is equal to the diagonal of the square. Since the ratio of any two circles is equal to the ratio of the squares of their diameters, in our case the required ratio is equal to $(side)^2 : (diagonal)^2$.
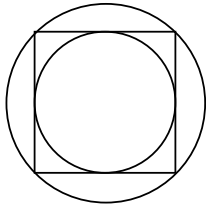
Now, the ratio of the side to the diagonal of a square = $1 : \sqrt{2}$, the ratio of their squares will be 1 : 2.

74. d   This can be best solved by the method of simulation. Let x = 2. Hence $f(2) = (1 - 2)/(1 + 2) = -1/3 = y$. Now let us verify each of the answer choices. We find that only option (d) satisfies the condition. $f(y) = (-1/3) = (1 + 1/3)/(1 - 1/3) = 2 = x$.

75 to 76:

It is given that $x + 2x + x/2 = 35$.
Hence x =10.
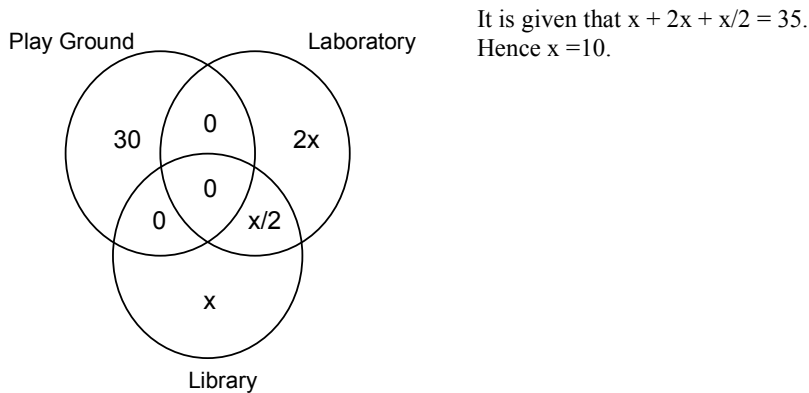
75. d   Total number of schools that had at least one of the three = 30 + 10 + 20 + 5 = 65. Hence the number of schools having none of them = 35.

76. b   Number of schools having library = 15. And number of schools having laboratory = 25.
Hence the ratio = 25 : 15 = 5 : 3.

77. a   Since in the long run the probability of each number appearing is the same, we can say in 'n' throws one can get 1, 2, 3, 4, 5 and 6, n/6 times each. Hence he would earn $(1+2+3+4+5+6)n/6 = Rs.7n/2$. In order to make a profit of 1 Re. per throw he has to totally earn a profit of Rs.n. Hence his cost for the n throws should be $(7n/2 - n)$. So his cost per throw should be $(7/2 - 1) = 5/2 = Rs.2.50$.

78. b   Since Machine C takes the same amount of time as A & B running together, we can say that $1/C = 1/A + 1/B$ or $1/A + 1/B + 1/C = 2/A + 2/B$. Machine A takes 60 hours, while machine B takes 30 hours. So if all 3 machines are used simultaneously time taken can be expressed as $2/60 + 2/30 = 1/10$. Hence it will take 10 hours.

79. d   If $0 \leq x \leq 1$, then $2 \leq (x+2) \leq 3$ and $3 \geq (3-x) \geq 2$. So the minimum value among them should also lie between 2 & 3. The only option that gives you this is (d).

80. b   We know that $x + y + z = T$ and $x + 2y + 3z = R_T$, where
x = number of members belonging to exactly 1 set = 70
y = number of members belonging to exactly 2 sets
z = number of members belonging to exactly 3 sets = 10
T = Total number of members
R_T = Repeated total of all the members = (40+50+60) = 150
Thus we have two equations and two unknowns. Solving this we get y = 25

81. a   If x = 1, then for the rectangular box : l = 8, b = 8 and h = 1, so volume = 64.

If x = 2, l = 6, b = 6 and h = 2 and volume = 72.
If x = 3, l = 4, b = 4 and h = 3 and volume = 48.
Hence we can see that for a value of x between 2 & 3, the volume of box decreases and will go on decreasing further as x increases.
Hence the maximum volume that the box can have is 72 sq. inches.
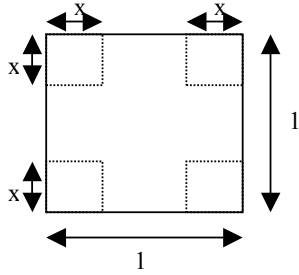
82. a   The best way to solve this question is the method of simulation, where in we assume some values for x, y and z and verify the result. Let x = 4, y = 3 and z = 2. The product of these number is 24. Hence if we substitute these values in the answer choices we find that option (a), which is 3 x 3 x 2 = 18, is the closest.

83. c   number of powers of 5 in 80! = $(80/5 = 16) + (80/5^2 = 3) = 19$.

84. b   This can best be done by reverse substitution. And the hint is that you may not verify the entire answer but only that last digits. For eg. the last digits obtained by multiplying the the units place digits should be the same as that obtained by multiplying the tens place digit. Hence we find that only option (b) is the valid answer.

85. a   As 55 does not have factor common to 124, for 55n to be exactly divisible by 124, n should be a multiple of 124. Hence the minimum value that n can have is 124 itself.

86. a   The best way to solve this question is again the method of simulation. For eg. Since (k+4) is divisible by choose an appropriate value for k, viz. k = 3. Now if (k+2n) is also divisible by 7, then (k + 2n) could be 7, 14 , 21 ….If it is 7 then n = 2, if it is 14 then n = 5.5 and if it is 21, n = 9. Since n is a positive integer greater than 2, the smallest value that satisfies this is 9.

87. c

	A	B	Step I (B + 1)	Step II (A x B)	Step III A	Step III B
Beginning	1	1				
1st Time	1	1	B =2	(1 x 2) = 2	2	2
2nd Time	2	2	B = 3	(2 x 3) = 6	6	3
3rd Time	6	3	B = 4	(6 x 4) = 24	24	4
4th Time	24	4	B = 5	(24 x 5) = 120	120	5
5th Time	120	5	B = 6	(120 x 6) = 720	**720**	6

88. b   It can be seen that if we place 3 coins touching each other, their centers form an equilateral triangle. Hence the angle made by the centers of the coins around the central coin is 60°. Since the total angle to be covered is 360°, there has to be 6 coins surrounding the central coin.
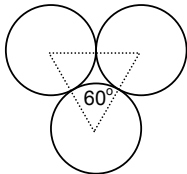

89. b   Let Gopal have Rs. 400. The price of an orange is then Rs. 8 and that of a mango is Rs.10. If he keeps 10% of the money for taxi fare, he is left with Rs.360. Now if he buys 20 mangoes i.e. if he spends 200 Rs., he is left with Rs.160, in which he can buy 20 oranges.

90. d   Since her husband meets her mid way, the total time saved by him can be equally divided into time saved while going to station and that saved while returning home. In other words, he saved 5 min. while going and 5 min. while coming. So instead of usual time of 6.00 pm he must have met her at 5.55 pm. So she must have walked for 55 min.

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91. b Let x be the total number of sticks assigned to each boy and let y be the number of boxes in which he has to fill them. If he reduces number of sticks per box by 25, he would fill $(x/y - 25)$ in each box and hence he would now fill $(y + 3)$ boxes. So we can write :
$x = (x/y - 25)(y + 3) = x + 3x/y - 25y - 75$. Rearranging we get $3x = (25y + 75)y$ or
$x = (25y^2 + 75y)/3$. For x to have an integer value, x has to be a multiple of 3. The only answer choice that supports this is 150.

92. b For a difference of 1 year, CI can be computed as SI. Hence, from the 2nd year to the 3rd year interest earned = $(675 - 650)$ = Rs.50 on Rs.625. Hence the Rate of interest = $50/625$ = 8% p.a.

93. a You find that the total number of links in the network is 13. (Note : In the diagram given below, the top two nodes are connected to all the other nodes, while the remaining four are connected to only four other nodes).
Students be careful and do not forget to count the actual sides of the hexagon as well, as they also form links.
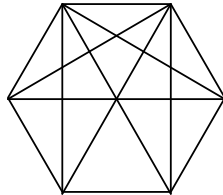
94. c If $(2x + 12)$ is perfectly divisible by x, then $(2x + 12)/x$ has to be an integer as x is an integer. Now if we divide, the expression simplifies to $(2 + 12/x)$. The only way in which this expression would be an integer is when $12/x$ is an integer or if 12 is perfectly divisible by x. This is possible if x takes either of these values : 1, 2, 3, 4, 6, 12. Hence the answer is 6 values.

95. d We can see that overall he has travelled 3 kms. towards east and 4 kms. towards north. Hence the shortest distance between them has to be 5 kms (Pythgorean Triplet).
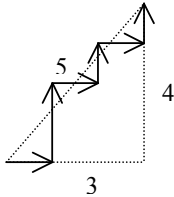
96. c The ratios of the share of students : teachers : benefactor = 1 : 1.5 : 4.5. So the proportion of teachers share is 1.5/7. So teachers would donate : $(1.5 \times 4200) / 7$ = Rs.900.

97. d Take any prime number greater than 5, eg.7. So $(7^2 - 1) = 48$. So this is divisible by 6, 12 and 24. Let us hence choose the next prime number 11. So $(11^2 - 1) = 120$. This again is divisible by 6, 12 and 24. The next prime number is 13 and $(13^2 - 1) = 120$. Also divisible by 6, 12 and 24. Hence we can safely conclude that it is always divisible by 24. Although because of this it will also be always divisible by 6 & 12, no other answer choices provide us a better answer. Hence the answer is (d).

98. a $203 = 2.3^2 + 0.3^1 + 3.3^2 = 18 + 0 + 1 = 21$
$21 = 2.3^1 + 1.3^0 = 6 + 1 = 7$. Therefore we can reduce 203 to 7 in 2 steps.

99. a The logic can be easily cracked as : $A + B = (A + B) - 18$. Hence $10 + 18 = (10 + 18) - 18 = 10$.

100. c the distance between two points (x_1, y_1) and (x_2, y_2) is given as $\sqrt{(x_2 - x_1)^2 + (y_2 - y_1)^2}$
Hence in our case distance = $\sqrt{(-2 - 3)^2 + (-7 - 8)^2} = 5\sqrt{10}$

101. d A traditional kinship group provides security, identity as well as an entire scheme of things.

102. d Both the examples have been cited in the passage to show the extent of disintegration of kinship.

103. a The passage states that farming led to kinship becoming more important.

104. d The rise in individual self consciousness has led to the loss of sanity, supportiveness as well as warmth.

105. c The passage deals with the changes in kinship patterns over time and their effect on the individuals.

106. c   The author says that serial monogamy is a series of marriages and divorces.

107. a   According to the passage, smaller families are less influential.

108. a   'Genealogy refers to family history.

109. d   The most distressing trend is the decline in the ability to form long term intimate bonding.

110. c   The passage states that the political and economic benefits of the rise of the individuals have been positive.

111. c   'The marauder within' refers to the criminal class.

112. b   The intellectual patrons of Australia in its first colonial years were Hobbes and Sade.

113. d   The English did not regard Australia as a new frontier. It was settled to defend the English property from the criminal class.

114. b   The late 18th century abounded in schemes of social goodness.

115. d   'Sanguine' means confident or hopeful.

116. d   The passage primarily deals with the settlement of Australia as a penal colony to defend the English property from the criminal class.

117. d   The existence of the criminal class was one of the prime sociological beliefs of late Georgian and early Victorian England.

118. b   "Penology' is the study of punishment in relation to crime.

119. a   For seventeen years no observation was made on the island.

120. a   Sydney Harbor is the new name for Port Jackson.

121. c   The author says that man's emotions are the product of his rational faculty; his emotions cannot be understood without reference to the conceptual power of his consciousness.

122. b   The biological basis of choosing efficacy has been said to be the relationship of efficacy to survival.

123. b   Nature has left man free in choosing values.

124. a   The passage clearly states that man chooses his own values, irrespective of their actual effect on his life.

125. c   The passage states that man first acquires preferences through pleasure and pain as well as through efficacy and inefficacy.

126. d   Reason serves the dual function of cognition as well as of evaluation.

127. a   As a child a human being experiences issues relating to values through physical sensations of pleasure and pain.

128. b   Since man must act to live, he is actually forced to select values.

129. d   The passage clearly states that man experiences efficacy as well as pleasure as primary, hence the question is not debatable.

130. c   As a being of volitional consciousness, man is not biologically programmed to make right value choices automatically.

131. a   A heightened roller coaster effect, and not an opportunity for a roller coaster ride, is a characteristic of the stage of small victories.

132. c Entering a new culture involves an appreciative process, to help members of different cultures value the differences.

133. b Opening a bank account is an example of a small victory as it is preceded by anxiety and information collection.

134. b Entering a new culture is a learning process that results in valuing and affirming the best in a culture, while at the same time seeing it as a whole.

135. d The passage states that appreciative inquiry must precede cultural changes in an organization.

136. c The passage emphasizes that affirmation of a new culture involves viewing the whole, including the points that are less desirable.

137. b The author does not approve of legal limits on interest charged on money lent to people. The last paragraph shows his support for the free market operations.

138. c The author states that though the law precludes the man from borrowing, upon terms, which it deems too disadvantageous, it does not preclude him from selling, upon any terms, howsoever disadvantageous.

139. b The author states that he knows of no economist of any standing who has favoured a legal limit on the rate of interest on borrowed money.

140. a 'Usury' is defined as charging rates on money that are in excess of the legal limits.

141. c Bentham was primarily concerned with loans to individuals or business enterprises.

142. c The author laments that 'it is an oppression for a man to claim his money, but not to keep it from him.' Thus he implies that a man becomes an oppressor only because the borrower does not return the money.

143. c The passage states that no man of sound mind and with his eyes open should be hindered from obtaining money.

144. d

145. c The author states that the working class that may be the lender for the first time in history, will be the hardest hit by the legal regulations.

146. c The bickering illustrated that Eagle constituted a collective effort, and now they were having a hard time deciding on the contribution of each individual.

147. d The author seems to suggest that with the launch of the machine everything that preceded it becomes past. Even the team started losing its glue and instead bickering started.

148. d The word 'after birth' was used for 'the team that was losing its glue', that is the Eclipse Group.

149. b During the conversation West said that none of it had come out the way he had expected and that he was glad it was all over.

150. b The telegram was described as a 'classy gesture' by all.

151. b One of the 'Microkids' exclaimed that he had a 'great talk with West', showing that it as an honour for him.

152. b The machine had crashed during the programme but no one except the company engineers noticed and the problem was fast corrected. The event was written up at length in both the Wall Street Journal and the New York Times, the next day.

153. d Some of the engineers seemed to the author to be out of place, being untutored in that sort of a performance.

154. b It refers to the fact that in front of the Press even those who had not been around when Eagle was conceived were described as having had the responsibility for it.

155. c The author states that ego and money motivates people and clearly the machine no longer belonged to the makers.

Q156 – 160 :

156. b

Year	Per Capita Income	increase over previous year
1984-85	3097.62	-
1985-86	3482.32	384.70
1986-87	3786.44	304.12
1987-88	4202.98	416.54
1988-89	4856.73	653.75
1989-90	5319.01	462.28

As it can be clearly seen, the increase is lowest for the year 1986 – 87 = Rs. 304 .12

157. d Per Capita Income $= \dfrac{(\text{National Income})}{(\text{Population})}$

Year	National Income (in Rs. Crore)	Population (in crore)	Per Capita Income
1984-85	229,225	74.0	3097.63
1985-86	261,174	75.0	3482.32
1986-87	291,556	77.0	3786.44
1987-88	329,934	78.5	4202.98
1988-89	388,539	80.0	4856.73
1989-90	433,500	81.5	5319.01

It can hence be found that Per Capita Income is highest for the year 1989 – 90 = (433,500/81.5)=5319

158. d

Year	Population (in crore)	% increase over the previous year	Per Capita Income	% increase over the previous year	Difference in %
1984-85	74.0	-	3097.63	-	-
1985-86	75.0	1.35%	3482.32	12.43%	11.08
1986-87	77.0	2.66%	3786.44	8.73%	6.07
1987-88	78.5	1.94%	4202.98	11.01%	9.07
1988-89	80.0	1.91%	4856.73	15.56%	13.65
1989-90	81.5	1.87%	5319.01	9.51%	7.64

Hence it is highest for the year 1988-89 viz.13.65

159. a From the table given for Q158, it is apparent that the rate of increase of population is lowest for the year 1985-86 viz.1.35%

160. d As it is apparent from the table given for Q.158, among the years given in the answer choices, the increase in per capita income compared to previous year is highest for the year 1989-90.

Q161 – 165 :

161. c Let us assume that Ghosh Babu had deposited Rs.100 initially.

Year	Opening Balance	Interest Earned	Withdrawn by Ghosh Babu	Closing Balance
1986	100	10	10 + 20 = 30	80
1987	80	8	8 + 40 = 48	40
1988	40	4	4 + 20 = 24	20
1989	20	2	22	0

Hence, had he deposited Rs.100 initially, he should have withdrawn Rs.22 at the end to close the account. Since he withdrew Rs.11000, at the end he should have initially deposited Rs.50000.

162. d   He withdrew the smallest amount after the 4th year viz.Rs.11000.

163. a   He collected the maximum interest after the 1st year viz. 0.1 x 50000 = Rs.5000.

164. b   Ghosh Babu withdrew the maximum amount after the 2nd year viz. 0.48 x 50000 = Rs.24000

165. a   As seen from the above table, the total interest collected by Ghosh Babu is Rs.24 on Rs.100. Hence on Rs.50000, it would be Rs.12000.

166 – 170:

The values of the graph can be tabulated as given below:

	A	% Change	B	% Change	C	% Change	D	% Change
Jan	100	-	70	-	60	-	40	-
Feb	95	-5%	72	2.85%	55	-8.33%	50	25%
Mar	115	21%	74	2.77%	60	9.09%	50	-
Apr	105	-8.70%	76	2.70%	69	15%	41	-18%
May	100	-4.70%	78	2.63%	60	-13%	44	7.31%
Jun	110	10%	80	2.56%	55	-8.33%	45	2.27%

166. d   As it is seen the highest % increase is for D in Feb. viz.25%

167. a   The greatest absolute change in the market value for any share recorded is 20 i.e. for share 'A" for month of March = 115 – 95 = 20

168. a   The greatest percentage change in any share was recorded for share D for the month of February viz. 25%

169. d

	C	D	Total Earning	A	Gain/ Loss
Jan	60	40	100	100	-
Feb	55	50	105	95	+5
Mar	60	50	110	115	-5
Apr	69	41	110	105	+5
May	60	44	104	100	+4
Jun	55	45	100	110	-10

Hence, the maximum loss due to share value changes is 10 for the month of Jun. Hence the answer is (d).

170. a   Again referring to the above table it can be seen that the individual's highest gain is Rs.5.

Q171-175 :

171. a   Let the total number of bad widgets be x and hence the total number of good ones will be (1000 –x).
If he takes test I his total cost will be : Rs.2(1000) + 25 X 0.8x + 50 X 0.2x
If he takes test II his total cost will be : Rs. 3(1000) + 25 X x
Now, it will be worth testing if the cost of testing is less than the cost of penalty levied on the defective pieces.
Let us now test of all the values mentioned in all the questions & answer choices.

No. of defectives	Cost of Test I	Cost of Test II	Penalty if not tested
100	Rs.5000	Rs.5500	Rs.5000
120	Rs.5600	Rs.6000	Rs.6000
160	Rs.6800	Rs.7000	Rs.8000
190	Rs.7700	Rs.7750	Rs.9500
200	Rs.8000	Rs.8000	Rs.10000
400	Rs.14000	Rs.13000	Rs.20000

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It is obvious that for number of defectives above 100 cost of any testing is cheaper than the penalty. But for 100 defectives the cost of penalty is the same as that for testing. Hence below 100 defectives, the penalty will be less than the cost of testing and hence it is not worth testing.

172. d   If there are 120 widgets, he should go for test I as it is cheaper.

173. c   It is clear from the table that if the number of defectives is between 200 & 400, he should go for Test II as it is cheaper.

174. a   In case of 160 defectives he should use test I as it is cheaper.

175. a   If there are 200 defective widgets in the lot, Prakash may use either Test I or Test II as the cost of both the Tests is same = Rs.8000.

176 – 180:

Students please note that the values on the Y-axis are not given. But you may observe that none of the questions require you to have these values. We can very well solve all questions by assigning arbitrary values to them. For the sake of convenience let us start the values from 0 and make an increment to 2 at each grid lines (dotted lines). So the values in the graph can be compiled as given below :

Years	Food production	Fertilizer production
83	13	5
84	10	7
85	10	7
86	13	4
87	13	4
88	10	7
89	10	2
90	14	2
91	14	2

176. d   If you see, the sum of the food and the fertilizer values is 17 between 1984 and 1988. Hence it is constant for 5 years.

177. c   According to our values, the fertilizer production in 1988 is 7 and the food production is 10, i.e. they add up to 17. If this corresponds to 170 million tonnes, then the food production should correspond to 100 million tonnes.

178. b   The graph of food production shows an alternate increase and decrease in every 1 to 2 years. Hence looking at the trend of the graph in 1990 and 1991, it can be expected that the graph will go down in 1992.

179. d   It is clear that the graph for fertilizer production remains constant for two consecutive years. But it breaks this trend in 1989 as it has a value of 2 instead of 7 in this year.

180. b   If the fertilizer production in 1989 had been the same as that in 1988, its value for 1989 would have been 7. Hence total fertilizer production according to our values would have been (5+7+7+4+4+7+7+2+2) = 45. If this corresponds to 450 million tonnes then our 1 unit will correspond to 10 million ton. The food production in 1983 as per our scale is 13, which will correspond to 130 million tonnes.

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