NIACL/DCCB Preliminary Grand Test –NIACL/DCCB-190107

ANSWER KEY

1.(3)	21.(4)	41.(2)	61.(3)	81.(3)
2. (1)	22.(2)	42.(3)	62.(5)	82.(4)
3. (3)	23.(4)	43.(1)	63.(2)	83.(2)
4. (4)	24.(5)	44.(5)	64.(5)	84.(5)
5. (1)	25.(5)	45.(4)	65.(3)	85.(3)
6.(4)	26.(4)	46.(1)	66.(1)	86.(2)
7. (3)	27.(5)	47.(2)	67.(3)	87.(3)
8. (1)	28.(3)	48.(4)	68.(3)	88.(1)
9. (3)	29.(1)	49.(3)	69.(4)	89.(5)
10.(2)	30.(2)	50.(2)	70.(5)	90.(1)
11.(4)	31.(2)	51.(5)	71.(2)	91.(2)
12.(2)	32.(3)	52.(4)	72.(1)	92.(2)
13.(1)	33.(4)	53.(2)	73.(4)	93.(2)
14.(5)	34.(1)	54.(1)	74.(4)	94.(1)
15.(3)	35.(5)	55.(2)	75.(4)	95.(4)
16.(1)	36.(4)	56.(5)	76.(4)	96.(2)
17.(1)	37.(1)	57.(1)	77.(2)	97.(1)
18.(2)	38.(4)	58.(5)	78.(2)	98.(2)
19.(1)	39.(3)	59.(1)	79.(3)	99.(4)
20.(2)	40.(2)	60.(4)	80.(5)	100.(5)

HINTS & SOLUTIONS

1. (3)   High dependence of many on forests
2. (1)   More landless women
3. (3)   Benefitting without self interest
4. (4)   Top-down approach to Community forestry
5. (1)   Dependence forces them to extract and also have concern for conservation
6. (4)   Are able to meet conservation objectives as well as their own interest
7. (3)   Children become more aware about conservation
8. (1)   The meaning of the word **Control (Verb)** as used in the passage is : to have power over a person etc; to limit something; to manage to make yourself remain calm; to stop something from getting worst or spreading.
Look at the sentence:
Fire fighters are still trying to control the blaze.
Hence, the synonym of **controlling** should be **holding in check.**
9.(3)   The meaning of the word **Paradox (Noun)** as used in the passage is : a person, thing or situation that has two opposite features and therefore seems strange; a statement containing two opposite ideas. Its synonym should be **anomaly.**

10. (2)   The meaning of the word **Acute (Adjective)** as used in the passage is: very serious or severe.
Look at the sentence:
There is an acute shortage of water.
11. (4)   12. (2)
13. (1)   14. (5)
15. (3)
16. (1)   **Quintessentially (Adverb)** = most importantly
17. (1)   18. (2)
19. (1)
20. (2)   **plug (Verb) =** to provide something that has been missing from a particular situation and is needed in order to improve it.
21. (4)   Idiom **at loose ends** means: having nothing to do and not knowing what you want to do.
22. (2)   Here, **was the one that** should be used. Relative pronoun **who** is used to show which person or people you mean.
23. (4)   in the way of
24. (5)   No correction required
25. (5)   No correction required
26. (4)   (A) and (B) only
27. (5)   Either C and (A) or (C) and (B)
28. (3)   (B) and (C) only
29. (1)   (C) and (A) only
30. (2)   (B) and (A) only

31. (2)
$$CI. = P\left[\left(1+\frac{R}{100}\right)^{T} - 1\right]$$
$$\Rightarrow 1414.4 = P\left[\left(1+\frac{8}{100}\right)^{2} - 1\right]$$
$$\Rightarrow 1414.4 = P \times 0.1664$$
$$\Rightarrow P = \frac{1414.4}{0.1664} = Rs.8500$$
∴ Amount = Rs. (8500 + 1414.4) = Rs. 9914.4

32. (3)   Let the ages of the mother and daughter be $7x$ and x years respectively.
∴ Four years ago, $\frac{7x-4}{x-4} = \frac{19}{1}$
$\Rightarrow$ 19x - 76 = 7x - 4
$\Rightarrow$ 12x = 72 = x = 6
∴ Mother's age after four years = $7x + 4 = 7 \times 6 + 4 = $ 46 years

33. (4)   ┌─────────────────┐
      │ Quicker Approach │
      └─────────────────┘
Required time = LCM of 12, 18 and 20 seconds.
180 seconds = 3 minutes

34. (1)   ┌─────────────────┐
      │ Quicker Approach │
      └─────────────────┘
4×2 men = 4×4 women = 20 children
$\Rightarrow$ 2 men = 4 women = 5 children
∴ 2 men + 4 women + 10 children = 20 children
∴ $M_1 D_1 = M_2 D_2$
$\Rightarrow 5 \times 4 = 20 \times D_2 \Rightarrow D_2 = 1$ day

35. (5) | Quicker Approach |

Speed of the boat in still water

$= \dfrac{1}{2}$ (Rate down stream + Rate upstream)

$= \dfrac{1}{2}$ (32 + 28) = 30 kmph

36. (4) The series is based on the following pattern :
11 = 2 × 3 + 5
38 = 11 × 4 - 6
197 = 38 × 5 + 7
1172 $\neq$ 197 × 6 - 8
$\therefore$ 1172 is wrong and it should be replaced by
197 × 6 - 8 = 1174

37. (1) The series is based on the following pattern :
$107 - 71 = 36 = 6^2$
$71 - 46 = 25 = 5^2$
$46 - 30 = 16 = 4^2$
$30 - 21 = 9 = 3^2$
$21 - 19 = 2 \neq 2^2$
$\therefore$ 19 should be replaced by 17 for which $21 - 17 = 2^2$

38. (4) The series is based on the following pattern :
16 = 9 + 7
25 = 16 + 9
41 = 16 + 25
68 $\neq$ 25 + 41

39. (3) The series is based on the following pattern:
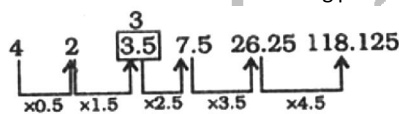
Obviously, 3.5 is the wrong number which should be replaced by 3.

40. (2) The series is based on the following pattern:
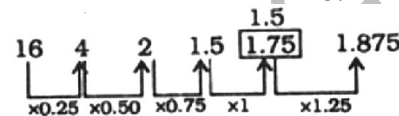
Obviously, 1.75 is the wrong number which should be replaced by 1.5.

41 – 45. Number of female players = 200
Number of male players = 600

Total number of cricketers $= 800 \times \dfrac{1}{4} = 200$

Female cricketers = 60
Male cricketers = 140
Male badminton players = 110 – 30 = 80
Total tennis players = 80
Total hockey players = 220
Female tennis players = 22
Male tennis players = 80 - 22 = 58
Total baseball players = 190
Female baseball players = 44
Female hockey players = 44
Male hockey players = 220 - 44 = 176
Male baseball players = 146

41. (2) Required ratio = 44 : 80 = 11 : 20
42. (3) Total number of males in hockey, cricket and baseball
= 176 + 140 + 146 = 462

43. (1) Required percentage $= \dfrac{44}{176} \times 100 = 25$

44. (5) Required difference = 146 - 80 = 66
45. (4) There are maximum female players in cricket (60) and minimum male players in tennis (58).
46. (1) Required average monthly salary

$= \dfrac{15000 + 15000 + 30000}{3}$ = Rs. 20000

47. (2) Total monthly salary of all the five persons in 2008 = Rs. 75 thousand
Arvind's total monthly salary = Rs. 45 thousand

Required percentage $= \dfrac{45}{75} \times 100 = 60\%$

48. (4) Earning of each one over all the years :
Sumit = Rs. 60 thousand
Anil = Rs. 40 thousand
Jyoti = Rs. 75 thousand
Arvind = Rs. 45 thousand
Poonam = Rs. 60 thousand

49. (3) Required percentage

$= \dfrac{25 - 20}{25} \times 100 = 20\%$

50. (2) After an increase of 30% Jyoti's salary in 2010

$= \dfrac{30 \times 130}{100}$ = Rs. 39 thousand

51. (5) I. $\Rightarrow p^2 + 3p + 2p + 6 = 0$
$\Rightarrow$ (p + 3) +2 (p + 3) = 0
$\Rightarrow$ (p + 3)(p + 2) = 0
$\Rightarrow$ p = 2 or- 3
II $\Rightarrow q^2 + q + 2q + 2 = 0$
$\Rightarrow$ q(q + 1) + 2 (q + 1) = 0
$\Rightarrow$ (q + 1)(q + 2) = 0
$\Rightarrow$ q = - 1 or - 2
Obviously p $\leq$ q

52. (4) I. $\Rightarrow$ p = $\pm$ 2
II. $\Rightarrow q^2 + 2q + 2q + 4 = 0$
$\Rightarrow$ q(q + 2) + 2 (q + 2) = 0
$\Rightarrow$ (q + 2) (q + 2) =0
$\Rightarrow$ q = - 2
Obviously, p $\geq$ q

53. (2) I. $\Rightarrow p^2 + p - 56 = 0$
$\Rightarrow p^2 + 8p - 7p - 56 = 0$
$\Rightarrow$ p(p + 8) - 7 (p + 8) = 0
$\Rightarrow$ (p + 8) (p - 7) = 0
$\Rightarrow$ p = 7 or - 8
II. $\Rightarrow q^2 - 8q - 9q + 72 = 0$
$\Rightarrow$ q (q - 8) - 9 (q - 8) = 0
$\Rightarrow$ (q - 8) (q - 9) = 0
$\Rightarrow$ q = 8 or 9
Obviously, p < q

54. (1) We have,
3p + 2q = 58 .....(i)
4p + 4q = 92
$\Rightarrow$ 2p + 2q = 46 .....(ii)

By (i) - (ii) we get

p = 12

From (i), $3 \times 12 + 2q = 58$

$\Rightarrow 2q = 58 - 36 = 22$

$\Rightarrow q = 11$

Hence, p > q

55. (2)   I. $\Rightarrow 3p^2 + 15p + 2p + 10 = 0$

$\Rightarrow 3p(p + 5) + 2(p + 5) = 0$

$\Rightarrow (p + 5)(3p + 2) = 0$

$\Rightarrow p = -5$ or $-\dfrac{2}{3}$

II. $\Rightarrow 10q^2 + 5q + 4q + 2 = 0$

$\Rightarrow 5q(2q + 1) + 2(2q + 1) = 0$

$\Rightarrow (2q + 1)(5q + 2) = 0$

$\Rightarrow q = -\dfrac{1}{2}$ or $-\dfrac{2}{5}$

Obviously, p < q

56. (5)   Let the breadth of rectangular field be x metres.

$\therefore$ Length = $x \times \dfrac{115}{100} = \dfrac{23x}{20}$ metres

Now, Length $\times$ Breadth = Area

$\Rightarrow \dfrac{23x}{20} \times x = 460$

$\Rightarrow x^2 = \dfrac{460 \times 20}{23}$

$\Rightarrow x^2 = 20 \times 20$

$\Rightarrow x = \sqrt{20 \times 20} = = 20$ metres

57. (1)   Let the listed price be Rs. x.

$\therefore$ Discount = 30% of x = $\dfrac{30x}{100} = $ Rs. $\dfrac{3x}{10}$

According to the question,

$\dfrac{3x}{10} = 82.5 \Rightarrow x = \dfrac{82.5 \times 10}{3} = $ Rs.275

$\therefore$ Required cost price of calculator = 70% of 275

= Rs. $\dfrac{70 \times 275}{100}$ = Rs. 192.50

58. (5)   There are 8 letters in the word 'SOFTWARE', including 3 vowels (O, A, E) and 5 consonants (S, F, T, W, R).

Considering three vowels as one letter, we have six letters which can be arranged in $^6P_6$ = 6! ways. But corresponding to each way of these arrangements, the vowels can be put together in 3! ways.

$\therefore$ Required number of words = 6! $\times$ 3! = 4320

59. (1)   4 men out of 7 men and 4 women out of 8 women can be chosen in $^7C_4 \times ^8C_4$ ways

$\Rightarrow \dfrac{7 \times 6 \times 5 \times 4}{1 \times 2 \times 3 \times 4} \times \dfrac{8 \times 7 \times 6 \times 5}{1 \times 2 \times 3 \times 4} = 35 \times 70 = 2450$

60. (4)   Let the principal be Rs. x and rate of interest be r%

Case I : $\dfrac{x \times r \times 7}{100} = 1750$

$\Rightarrow xr = \dfrac{1750 \times 100}{7} = $ Rs.25000

Case II :

S. I. = $\dfrac{x \times (r + 2) \times 7}{100}$

Which cannot be determined with the help of given information.

61. (3)   A's present age = 2x years

B's present age = 3x years

According to the question,

3x + 16 = 2(2x + 4)

$\Rightarrow$ 3x + 16 = 4x + 8

$\Rightarrow$ 4x - 3x = 16 - 8

$\Rightarrow$ x = 8 years

= Required difference

62. (5)   C.I. = $P\left[\left(1 + \dfrac{R}{100}\right)^T - 1\right]$

S.I. = $\dfrac{P \times R \times T}{100}$

According to the question,

$2P\left[\left(1 + \dfrac{10}{100}\right)^2 - 1\right] = \dfrac{Px \times 3}{100}$

$\Rightarrow 2\left[\left(1 + \dfrac{1}{10}\right)^2 - 1\right] = \dfrac{3x}{100}$

$\Rightarrow 2\left[\left(\dfrac{11}{10}\right)^2 - 1\right] = \dfrac{3x}{100}$

$\Rightarrow 2\left(\dfrac{121}{100} - 1\right) = \dfrac{3x}{100}$

$\Rightarrow \dfrac{2 \times 21}{100} = \dfrac{3x}{100}$

$\Rightarrow 3x = 2 \times 21$

$\Rightarrow x = \dfrac{2 \times 21}{3} = 7 \times 2 = 14$

63. (2)   Total possible outcomes = n(S)

Selection of 4 marbles out of 15 marbles.

$^{15}C_4 = \dfrac{15 \times 14 \times 13 \times 12}{1 \times 2 \times 3 \times 4} = 1365$

When no marble is blue, favourable number of cases n(E) = Selection of 4 marbles out of 11 marbles

$^{11}C_4 = \dfrac{11 \times 10 \times 9 \times 8}{1 \times 2 \times 3 \times 4} = 330$

$\therefore$ Required probability = $1 - \dfrac{n(E)}{n(S)}$

$= 1 - \dfrac{330}{1365} = 1 - \dfrac{22}{91} = \dfrac{69}{91}$

64. (5)   Total possible outcomes = n(S)

$^{15}C_2 = \dfrac{15 \times 14}{1 \times 2} = 105$

Favourable number of cases = n(E) = Selection of 2 marbles out of 6 red marbles

$$^{6}C_{2} = \frac{6\times5}{1\times2} = 15$$

$$\therefore \text{Required probability} = \frac{n(E)}{n(S)} = \frac{15}{105} = \frac{1}{7}$$
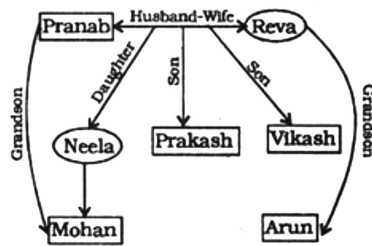
65. (3) Total possible outcomes = n(S)

$$^{15}C_{3} = \frac{15\times14\times13}{1\times2\times3} = 455$$

Favourable number of cases = n(E) = $^{4}C_{2} \times {}^{3}C_{1}$

$$= \frac{4\times3}{1\times2} \times 3 = 18$$

Required probability = $\frac{18}{455}$

(66 – 67):

66. (1) Mohan is grandson of Revs.
67. (3) Neela is sister of Vikash. Therefore, Vikash's wife is sister-in-law of Neela.

68 -69. (i) P @ Q $\Rightarrow$ P < Q
Therefore, P > Q or P = Q
Thus, P $\geq$ Q
(ii) P # Q $\Rightarrow$ P > Q and P $\neq$ Q
Therefore, P < Q
(iii) P $ Q $\Rightarrow$ P < Q and P > Q
Therefore, P = Q
(iv) P ★ Q $\Rightarrow$ P > Q
Therefore, P < Q and P = Q
Thus, P $\leq$ Q
(v) P % Q $\Rightarrow$ P < Q and P $\neq$ Q
Therefore, P > Q

@ $\Rightarrow\geq$	# $\Rightarrow<$
$ $\Rightarrow=$	* $\Rightarrow\leq$
% $\Rightarrow>$	

68. (3) **Statements**
M $ K $\Rightarrow$ M = K
D * K $\Rightarrow$ D $\leq$ K
R # K $\Rightarrow$ R < K
Therefore,
R < M = K $\geq$ D
Conclusions
I. D $ M $\Rightarrow$ D = M : Not True
II. M % D $\Rightarrow$ M > D : Not True
D is either smaller than or equal to M. Therefore, either Conclusion I or II is true.

69. (4) **Statements**
F * M $\Rightarrow$ F $\leq$ M
M % R $\Rightarrow$ M > R
F @ F $\Rightarrow$ E $\geq$ F

Therefore, F $\geq$ F $\leq$ M > R
Conclusions
I. M % E $\Rightarrow$ M > E : Not True
II. R @ E $\Rightarrow$ R $\geq$ E : Not True

70 – 72.
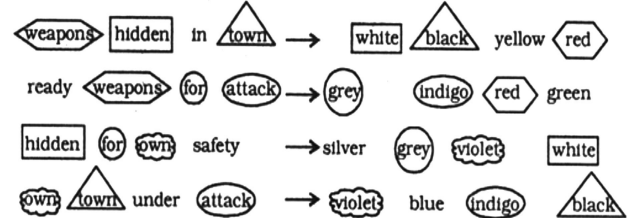
70. (5) black $\Rightarrow$ town; 'pink' may be code for 'risk'.
yellow $\Rightarrow$ in
71. (2) attack $\Rightarrow$ indigo
72. (1) hidden $\Rightarrow$ white;
weapons $\Rightarrow$ red
'orange' may be code for 'all'.
73. (4) None of the courses of action is suitable for pursuing. If the company Lixus would not manufacture Ball point pens, some other company may introduce Ball point pens in the market. Similarly, some other company may introduce gel-ink pens in the market.
74. (4) As the recession is world-wide employment scenario in other countries would also have adversely affected. Therefore, course of action I is not suitable for pursuing. Course of action II lacks practical approach.
75. (4) None of the courses of action is suitable for pursuing.
76 – 80.
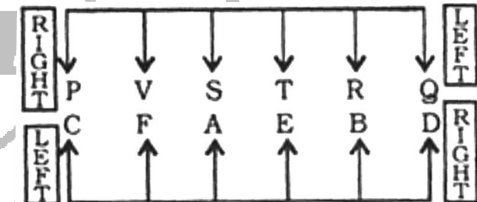
76. (4) P and D sit at extreme ends of the rows.
77. (2) Two persons - S and T -are seating between V and R.
78. (2) P faces the person who sits second to the left of A. S faces the person who sits second to the left of B. Similarly, T faces E who sits second to the left of D.
79. (3) F faces V who sits second to the right of T.
80. (5) A faces the immediate neighbour of T. B faces the immediate neighbour of T. F faces the immediate neighbour of P. C faces the immediate neighbour of V. But E faces the person who is second to the right of Q.
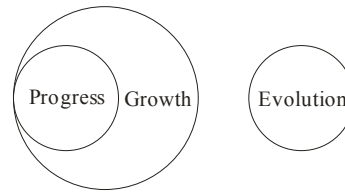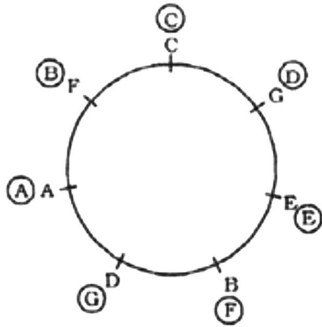(81 – 85): Sitting arrangement
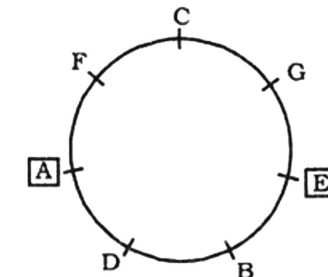
81. (3) A and E are facing opposite to the centre.
82. (4) B is sitting second to the left of A.

83. (2)   G is sitting to the immediate left of E.
84. (5)   F is third to the left of B.
85. (3)


I. ✓   II. ✓
Both (I) and (II) follows.

86. (2)   Statement B
87. (3)   Statement E
88. (1)   Statement A
89. (5)   Statements B and D
90. (1)   Option (1) is an assumption.
91. (2)   Only assumption II is implicit in the statement.
92. (2)   Only Inference II follows from the statement.
93. (2)   Only assumption II is implicit in the statement.
94. (1)   Only assumption I is implicit in the statement.
95. (4)   The use of term 'always' in assumption I makes it invalid.
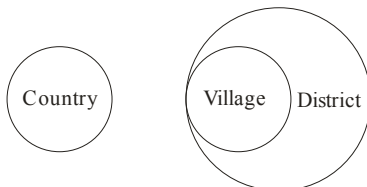**96-97.**
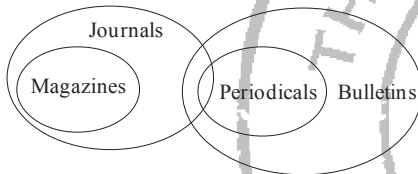
96. (2)   I. ✗   II. ✓
Only (II) follows.
97. (1)   I. ✓   II. ✗
Only (I) follows.
98. (2)
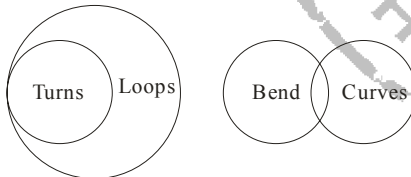
I. ✗   II. ✓
Only (II) follows.
99. (4)

I. ✗   II. ✗
Neither (I) nor (II) follows.
100. (5)