

NIACL/DCCB Preliminary Grand Test – NIACL/DCCB-190111
ANSWER KEY

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

HINTS & SOLUTIONS

- 1.(3) **Passing (Adjective)** = momentary; brief; lasting for a short time.
Permanent (Adjective) = lasting for a long time.
Look at the sentences :
He makes only a passing reference to the theory in his book. The accident has not done any permanent damage.
- 3.(2) **Spurt (Noun)** = a sudden increase in speed, effort, activity or emotion for a short period of time.
Drop (Noun) = decrease; reduction.
Look at the sentence :
Babies get very hungry during growth spurts.
During recession many companies faced sharp drop in profits.
- 4.(5) **Fuel (Verb)** = to increase something; to encourage; to make something stronger; stimulate.
Look at the sentence :
Higher salaries helped to fuel inflation.
- 10.(4) **Concede (Verb)** = to admit that something is true.
Look at the sentence :
He was forced to concede that there might be difficulties.
- 11.(5) 12.(5)
13.(1) 14.(4)
- 15.(2)
16. (3) fails, reoperate
17. (1) meticulous, escapes
18. (5) studious, respect
19. (5) Hatred, violence
20. (4) committed, inevitable
21.(2) Here, due to lack of interest in better part of people should be used. The sentence shows cause.
22.(2) Here, a booming (Adjective) business fuelled should be used. An Adjective qualifies a Noun.
23.(1) 'So..... that' is correct form of correlative. Hence, so much is the inflow of travellers that should be used.
24.(3) Here, is leading/leads to a proportionate should be used. The structure of a sentence in Present Progressive : Subject + is / am / are + Verb + ing (V₄)
25.(3) 'Either.....or' is correct form of correlative. Hence, either dried up or are suffering should be used.
26. (2) 27. (3)
28. (4) 29. (5)
30. (2)
31. (2) The pattern is :
 $10 \times \frac{1}{2} - 1 = 5 - 1 = 4$
 $4 \times 1 - 1 = 4 - 1 = 3$
 $3 \times \frac{3}{2} - 1 = 4.5 - 1 = 3.5$
 $3.5 \times 2 - 1 = 7 - 1 = 6$
 $6 \times \frac{5}{2} - 1 = 15 - 1 = 14 \neq 15$
 $14 \times 3 - 1 = 42 - 1 = 41$
32. (1) The pattern is :
 $5040 \div 7 = 720$
 $720 \div 6 = 120$
 $120 \div 5 = 24$
 $24 \div 4 = 6$
 $6 \div 3 = 2 \neq 3$
 $2 \div 2 = 1$
33. (2) The pattern is :
 $140 + 17 \times 1 = 157$
 $157 + 17 \times 2 = 157 + 34 = 191 \neq 193$
 $191 + 17 \times 3 = 191 + 51 = 242$
 $242 + 17 \times 4 = 242 + 68 = 310$
 $310 + 17 \times 5 = 310 + 85 = 395$
 $395 + 17 \times 6 = 395 + 102 = 497$
34. (3) The pattern is :
 $150 - 2 = 148$
 $148 - 5 (= 2 + 3) = 143$
 $143 - 10 (= 5 + 5) = 133$
 $133 - 17 (= 10 + 7) = 116$
 $116 - 26 (= 17 + 9) = 90 \neq 80$
 $90 - 37 (= 26 + 11) = 53$
35. (2) The pattern is :

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$$5 \times 1 - 1 = 5 - 1 = 5$$

$$4 \times 2 - 2 = 8 - 2 = 6$$

$$6 \times 3 - 3 = 18 - 3 = 15$$

$$15 \times 4 - 4 = 60 - 4 = 56$$

$$56 \times 5 - 5 = 280 - 5 = 275 \neq \boxed{285}$$

$$275 \times 6 - 6 = 1650 - 6 = 16$$

36. (3) In x litres of mixture,

$$\text{Milk} = \frac{9x}{13} \text{ litres}$$

$$\text{Water} = \frac{4x}{13} \text{ litres}$$

From statement I,

In 60% mixture,

$$\text{Milk} = \left(\frac{3}{5} \times \frac{9x}{13} \right) \text{ litres}$$

$$= \frac{27x}{65} \text{ litres}$$

$$\text{Water} = \frac{3}{5} \times \frac{4x}{13} = \frac{12x}{65} \text{ litres}$$

$$\therefore \frac{\frac{12x}{65} + 6}{\frac{3x}{5} + 6} = \frac{40}{100} = \frac{2}{5}$$

$$\Rightarrow \frac{12x}{13} + 30 = \frac{6x}{5} + 12$$

$$\Rightarrow \frac{6x}{5} - \frac{12x}{13} = 30 - 12$$

$$\Rightarrow \frac{78x - 60x}{65} = 18$$

$$\Rightarrow 18x = 18 \times 65$$

$$\Rightarrow x = \frac{18 \times 65}{18} = 65 \text{ litres}$$

From statement II,

Remaining mixture

$$= \frac{4x}{5} \times \frac{4}{5} = \frac{16x}{25} \text{ litres}$$

$$\text{Quantity of milk} = \frac{16x}{25} \times \frac{9}{13}$$

$$\therefore \frac{16x \times 9}{25 \times 13} = 28.8$$

$$\Rightarrow x = \frac{28.8 \times 25 \times 13}{16 \times 9} = 65 \text{ litres}$$

37. (1) From statement I,

$$(A + B)'s \text{ 1 day's work} = \frac{3}{20}$$

$$(B + C)'s \text{ 1 day's work} = \frac{3}{40}$$

$$(C + A)'s \text{ day's work} = \frac{7}{80}$$

On adding all three,

$$2(A + B + C)'s \text{ 1 day's work} = \frac{3}{20} + \frac{3}{40} + \frac{7}{80}$$

$$= \frac{12 + 6 + 7}{80} = \frac{25}{80}$$

$$\Rightarrow (A + B + C)'s \text{ 1 day's work} = \frac{25}{160} = \frac{5}{32}$$

$$\therefore \text{Required time} = \frac{32}{5}$$

$$= 6\frac{2}{5} \text{ day}$$

Statement II gives no result.

38. (5) From statements I and II,

$$\pi r^2 h = 4158$$

$$2\pi r h = 1485$$

By solving these we get value of h.

Let the marked price of pen be Rs. x.

From statement I,

$$x \times \frac{75}{100} = \frac{480 \times 90}{100}$$

$$\Rightarrow x = \frac{480 \times 90}{75} = \text{Rs.} 576$$

Statement II gives no result.

40. (5) From both statements, Speed of boat in still water = x kmph.

Rate downstream = (x + 4) kmph.

Rate upstream = (x - 4) kmph.

$$\therefore (x - 4) \times \frac{40}{60}$$

$$= (x + 4) \times \frac{24}{60}$$

$$\Rightarrow (x - 4) \times 5 = (x + 4) \times 3$$

$$\Rightarrow 5x - 20 = 3x + 12$$

$$\Rightarrow 2x = 32$$

$$\Rightarrow x = 16 \text{ kmph}$$

\(\therefore\) Rate downstream

= 20 kmph

\(\therefore\) Distance covered in 36 minutes

$$= 20 \times \frac{36}{60} = 12 \text{ km.}$$

41. (5) Required answer = (354 - 258) + 235 = 96 + 235 = 331

42. (2) Unsuccessful candidates (School - B)

Year 2004 445 - 354 = 91

Year 2005 = 545 - 435 = 110

Year 2006 = 664 - 454 = 210

Year 2007 345 - 144 = 201

Year 2008 584 - 354 = 230

Year 2009 704 - 347 = 357

43. (1) Required ratio = 693 : 252 = 11 : 4

44. (5) Required percentage = $\frac{435}{546} \times 100 = 80$

45. (3) Percentage increase

$$= \frac{435 - 346}{346} \times 100 = \frac{89}{346} \times 100 = \frac{9000}{350} = 26$$

46. (1) Required average

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$$= \frac{534 + 234 + 126 + 478}{4} = \frac{1372}{4} = 343$$

47.(2) Required answer = 675 + 1145 + 454 + 810 + 666 = 3750

48.(3) Required difference = 1709 - 1169 = 540

49.(5) Required percentage = $\frac{243 - 126}{126} \times 100 = 93$

50.(5) Number of girls in all departments = 140 + 300 + 180 + 250 + 240 = 1110

∴ Required percentage = $\frac{300}{1110} \times 100 = 27$

51.(4) Total number of boys in all the departments = 80 + 200 + 100 + 150 + 120 = 650

number of girls = 1110

∴ Required difference = 1110 - 650 = 460

52.(3) Average number of boys = $\frac{650}{5} = 130$

53.(1) Number of all boys = 650
Number of boys from Anthropology department = 100

∴ Required percentage = $\frac{100}{650} \times 100 = 15.38 = 15$

54.(2) Number of girls from Philosophy department = 140
Number of girls from Psychology department = 240
Required ratio = 140 : 240 = 7 : 12

55.(2) Total length of cloth = (130 × 30 + 75) cm.
= (3900 + 75) cm. = 3975 cm.
= 39.75 metre

[∵ 100 cm. = 1 metre]

56.(3) From the options,
 $15^2 + 17^2 = 225 + 289 = 514$

57.(1) Two years ago
Ramesh's age = 6x years
Ankur's age = 9x years
After two years from today,

$$\frac{6x + 4}{9x + 4} = \frac{9}{11}$$

$$\Rightarrow 81x + 36 = 66x + 44$$

$$\Rightarrow 81x - 66x = 44 - 36$$

$$\Rightarrow 15x = 8$$

$$\Rightarrow x = \frac{8}{15}$$

∴ Ankur's present age = $\left(9 \times \frac{8}{15} + 2\right)$ years

$$= \left(\frac{24}{5} + 2\right) \text{ years}$$

$$= \frac{34}{5} \text{ years} = 6.8 \text{ years}$$

58.(2) Part of tank filled in 1 minute by two pipes and the leak

$$= \frac{1}{15} + \frac{1}{25} - \frac{1}{30}$$

$$= \frac{10 + 6 - 5}{150} = \frac{11}{150}$$

∴ Required time = $\frac{150}{11}$

$$= 13 \frac{7}{11} \text{ minutes}$$

59.(3) Total balls in the urn = 9 + 5 + 7 = 21

One ball will be white while other ball will be either blue or black.

∴ Total possible outcomes = Selection of 2 balls out of 21 balls

$$= {}^{21}C_2 = \frac{21 \times 20}{1 \times 2} = 210$$

Total favourable outcomes = Selection of 1 ball out of 5 white balls and selection of 1 ball out of 16 remaining balls. = ${}^5C_1 \times {}^{16}C_1 = 5 \times 16 = 80$

∴ Required probability = $\frac{80}{210} = \frac{8}{21}$

60.(2) Area of circle = $\Pi r^2 = \frac{22}{7} \times 14 \times 14 = 616 \text{ sq.cm.}$

∴ Area of rectangle = 1166 - 616 = 550 sq.cm.

Breadth of rectangle = $\frac{550}{25} = 22 \text{ cm.}$

∴ Circumference of circle

$$= \Pi \times \text{diameter} = \frac{22}{7} \times 28 = 88 \text{ cm.}$$

Perimeter of rectangle

$$= 2 (\text{length} + \text{breadth}) = 2 (25 + 22) = 94 \text{ cm.}$$

Required sum = 88 + 94 = 182 cm.

61.(1) $? = \left(\frac{8}{3}\right)^2 \times \frac{400}{40} \times \frac{900}{40} = 1600$

62.(3) $? = \frac{1400 \times 68}{100} - \frac{1300 \times 14}{100} = 952 - 182 = 770$

63.(4) $5466.97 - 3245.01 + 1122.99 = ? + 2309.99$
 $\Rightarrow 3344.95 = ? + 2309.99$

$$\Rightarrow ? = 3344.95 - 2309.99 = 1034.96 = 1030$$

64.(4) $? = 600 + 671 - 140 = 600 + 671 - 140 = 1130$

∴ Required answer = 1130

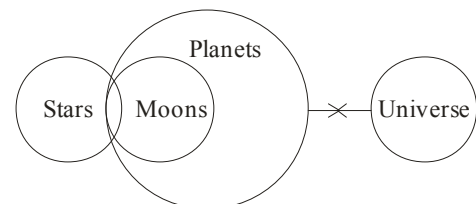
65.(5) $? = (5)^3 + (30)^2 - (3)^4 = -125 + 900 - 81 = 694$

∴ Required answer = 694

66-70.

- (i) All moons are planets → Universal Affirmative (A-type).
- (ii) fill Some stars are moons → Particular Affirmative (I-type).
- (iii) No planet is universe → Universal Negative (E-type).
- (iv) Some planets are not universe → Particular Negative (O-type)

66-67.



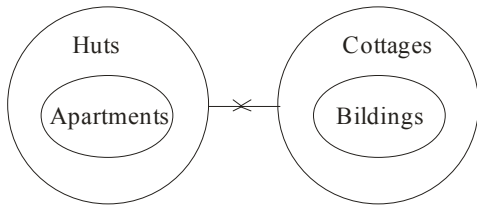
66.(4) I) ✓ II) ✗
Only I follows.

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

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68-70.



- 68.(4) I) }
II) } * Either (I) or (II)

Either I or II follows.

- 69.(4) I) * II) *

Neither I nor II follows.

- 70.(1) I) ✓ II) *

Only I follows.

71 -75. After careful analysis of the given input and various steps of rearrangement, it is evident that in each step two elements (one word and one number) are rearranged. In the first step, the lowest number moves to the extreme left position and the word which comes last in the alphabetical order moves to the second position from the left. In the second step, the word which comes last in the alphabetical order moves to the extreme right position and the second lowest number moves to the second position from the right. The same procedure is continued till all the numbers and words get rearranged.

Input : CHANT 18 SALTY 45 ABACUS WARDEN 30 91 67KNIGHT

Step I : 18 WARDEN CHANT SALTY 45 ABACUS 30 91 67 KNIGHT

Step II : 18 WARDEN CHANT 45 ABACUS 91 67 KNIGHT 30 SALTY

Step III : 45 KNIGHT 18 WARDEN CHANT ABACUS 91 67 30 SALTY

Step IV : 45 KNIGHT 18 WARDEN ABACUS 91 30 SALTY 67 CHANT

Step V : 91 ABACUS 45 KNIGHT 18 WARDEN 30 SALTY 67 CHANT

71. (2) Fourth element from the left in the second last step
⇒ WARDEN

Fifth element from the right in the second last step
⇒ 91

'ABACUS' lies exactly between 'WARDEN' and '91' in the second last step.

72. (3) Two consecutive elements to the immediate right of 'KNIGHT in the last step ⇒ 18, WARDEN

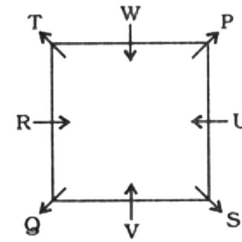
- 73.(1) '18' is seventh from the left of 'SALTY' in the Step III.

- 74.(5) Only 'CHANT' appears exactly between 'WARDEN' and 'ABACUS' in the Step III.

75. (4) In Step I, 'WARDEN' is fourth to the left of 'ABACUS'.
In Step IV, '91' is fourth to the left of 'CHANT'.

In Step V, 'ABACUS' is fourth to the left of 'WARDEN.'

76 – 80.



76. (4) P is at the corner and he is facing outside. R is third to the left of P.

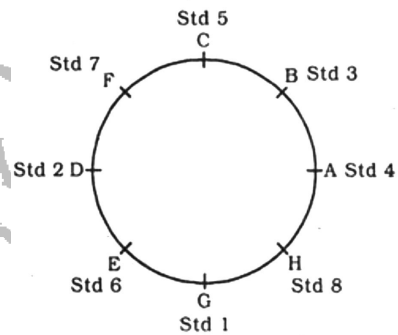
77. (2) V is sitting exactly between Q and S.

78. (3) Except R, all others are at the corners of the table.

79. (1) S is facing outside. R is sitting third to the right of S.

80. (5) Four persons - R, T, W and P - are sitting between Q and U, if we move clockwise from Q.

81-85.



- 81.(5) None is true.

- 82.(4) B studies in Std 3.

- 83.(4) There are three students between A and D when counted from the left hand side of A.

- 84.(2) D studies in Std 2.

- 85.(3) E and H are immediate neighbours of G.

86. (5) Clearly both the assumptions are implicit in the statement. The notice implies that disease ABC is contagious and it is also mentioned that ward no. 2 is meant only for ABC disease.

87. (1) Only assumption I is implicit in the statement. German technology is very advanced and it is perceived better in the city Z.

88. (5) Clearly both the assumptions are implicit in the statement.

89. (2) Only assumption II is implicit in the statement.

90. (5) Clearly both the assumptions are implicit in the statement.

- 91.(1) $J \div P \Rightarrow J$ is the son of P.

$P \% H \Rightarrow P$ is the mother of H.

$H \times T \Rightarrow H$ is the sister of T.

Therefore, P is the mother of J, H and T.

J is the brother of T.

92. (2) Option (1),

$L \% R \Rightarrow L$ is the mother of R

$R \$ D \Rightarrow R$ is the wife of D.

$D + T \Rightarrow D$ is the father of T.

$T \times M \Rightarrow T$ is the sister of M.

The gender of M is not known.

M is either son or daughter of D.

Option (2),

$L + R \Rightarrow L$ is the father of R.

$R \S D \Rightarrow R$ is the wife of D .
 $D + M \Rightarrow D$ is the father of M .
 $M \times T \Rightarrow M$ is the sister of T .
 It is clear that M is the daughter of D .

Option (3),

$L \% R \Rightarrow L$ is the mother of R .
 $R \% D \Rightarrow R$ is the mother of D .
 $D + T \Rightarrow D$ is the father of T .
 $T \div M \Rightarrow T$ is son of M .
 D is husband of M .

Option (4),

$D + L \Rightarrow D$ is the father of L .
 $L \S R \Rightarrow L$ is the wife of R .
 $R + M \Rightarrow R$ is the father of M .
 $M \times T \Rightarrow M$ is the sister of T .
 M is the grand daughter of D .

Option (5),

$L \S D \Rightarrow L$ is the wife of D .
 $D \div R \Rightarrow D$ is the son of R .
 $R \% M \Rightarrow R$ is the mother of M .
 $M \div T \Rightarrow M$ is the son of T .
 M is the brother of D .

93. (2)

$I + T \Rightarrow I$ is the father of T .
 $T \times J \Rightarrow T$ is the mother of J .
 $J \times L \Rightarrow J$ is the sister of L .
 $L \div K \Rightarrow L$ is the son of K .
 L is the son of K and hence Option (1) is incorrect.
 T is the wife of K .
 So, K is the son-in-law of I .
 I is the grandfather of L and hence Option (3) is incorrect.

T is the mother of J and hence Option (4) is incorrect.
 J is the sister of L and hence Option (5) is incorrect.

94.(4)

Option (1),
 $W \% L \Rightarrow W$ is the mother of L .
 $L \times T \Rightarrow L$ is the sister of T .
 $T \times Y \Rightarrow T$ is the sister of Y .
 $Y \div X \Rightarrow Y$ is the son of X .

Option (2),

$W + L \Rightarrow W$ is the father of L .
 $L \times T \Rightarrow L$ is the sister of T .
 $T \times Y \Rightarrow T$ is the sister of Y .
 $Y + X \Rightarrow Y$ is the son of X .

Option (3),

$X + L \Rightarrow X$ is the father of L .
 $L \times T \Rightarrow L$ is the sister of T .
 $T \times Y \Rightarrow T$ is the sister of Y .
 $Y \div W \Rightarrow Y$ is the son of W .
 X is the father of L , T and Y .
 Y is the son of X .

Option (4),

$W \S X \Rightarrow W$ is the wife of X .
 $X + L \Rightarrow X$ is the father of L .
 $L + Y \Rightarrow L$ is the father of Y .
 $Y + T \Rightarrow Y$ is the father of T .
 So, Y is the grandson of X .

Option (5),

$W \% X \Rightarrow W$ is the mother of X .
 $X + T \Rightarrow X$ is the father of T .
 $T \times Y \Rightarrow T$ is the sister of Y .
 $Y \div L \Rightarrow Y$ is the son of L .

So, Y is the son of X and L .
 95. (4) $R \% T \Rightarrow R$ is the mother of T .
 $T \times P \Rightarrow T$ is the sister of P .
 $P \S Q \Rightarrow P$ is the wife of Q .

96. (2)

So, T is the sister-in-law of Q .

97. (5)

Meaningful Word \Rightarrow PAIR ,

98.(1)

It is clear that statement (A) is the cause and statement (B) is its effect. Due to increase in the number of electric cars, the demand for oil falls substantially and hence the prices of oil have been decreased in the Country
 Grasshoppers destroy crops on a large scale. So, it is necessary to protect crops from grasshoppers. Obviously; Option (1) seems to be appropriate.

99.(2)

From the given information it is clear that the school would face a crunch in terms of availability of qualified teachers in the years to come.

100.(3)

It is mentioned that salaries of maids have gone up only 50 times while costs have gone up 100 times

