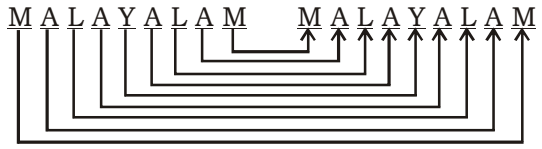
DP HEAD CONSTABLE – 01 (SOLUTION)

1. (D) As,
Room is a part of house.
Similarly,
Nation is a part of world

2. (A) As,



Similarly,

3. (A) As, 1 2 3 4 → 3 2 1 4
T A L E → L A T E
Similarly,
1 2 3 4 → 3 2 1 4
F A C E → C A F E

4. (A) Except arrow, all are used while holding in hand.

5. (D) In all options except option "D", we are sure about a perticular thing. Doubtful has different meaning from the rest three words.

6. (D) Opposite Opposite
E V G T
+2 -2

Opposite Opposite
H S J Q
+2 -2

Opposite Opposite
B Y D W
+2 -2

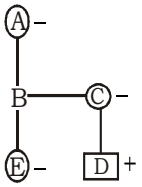
Opposite Opposite
J Q K P
+1 -1

7. (B) Correct sequence is **2 4 1 5 3**
Submarine
Subsequent
Substance
Substitute
Substrate

8. (A) a **a** b c **c** b a a **b c** c b **a** a b

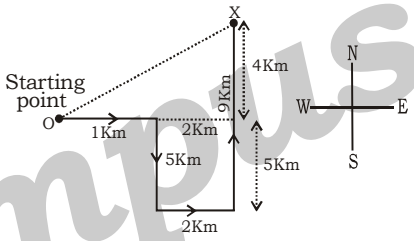
9. (A) 5, 12, 39, 114, 345, **1032**
×3–3 ×3+3 ×3–3 ×3+3 ×3–3

10. (D)



Gender of 'B' cannot be determined so can't specify relation between B and D.

11. (D)



$\therefore$ Required distance = OX
$= \sqrt{(3)^2 + (4)^2} =$ **5 Km**

12. (C) Word '**height**' cannot be formed by using the letters of the given word 'weightlessly'.

13. (A) As,
T W E N T Y and T W E L V E
8 6 3 9 8 5 8 6 3 2 0 3
Similarly, E L E V E N
3 2 3 0 3 9

14. (B) $18 - 48 \div 882 + 18 \times 300$
After changing the signs according to given details,
$18 \times 48 + 882 \div 18 - 300$
$\Rightarrow$ $864 + 49 - 300 =$ **613**

15. (B) As, 5*5$25 = 125 $\Rightarrow$ $\frac{(5)^5}{25} = 125$

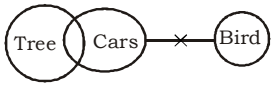
and 4*4$16 = 16 $\Rightarrow$ $\frac{(4)^4}{16} = 16$

Similarly,

8*4$16 = 256 $\Rightarrow$ $\frac{(8)^4}{16} =$ **256**

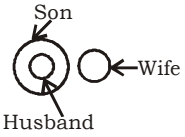
16. (A) As, $8^2 + 4^2 + 8 + 4 = 92$
and, $13^2 + 3^2 + 13 + 3 = 194$
Similarly, $9^2 + x^2 + 9 + x = 272$
$\Rightarrow 90 + x^2 + x - 272 = 0$
$\Rightarrow x^2 + x - 182 = 0$
$\Rightarrow x^2 + 14x - 13x - 182 = 0$
$\Rightarrow x(x + 14) - 13(x + 14) = 0$
$\Rightarrow (x - 13)(x + 14) = 0$
$\therefore$ x = **13**

17. (C) **41 triangles**

18. (D) 

I. X or ✓ II. ✓ or X
$\therefore$ Either conclusion I or Conclusion II follows.

19. (C) Letters represent indians who are not priests = E, A, F

20. (D) 

21. (A)
22. (C)
23. (B)
24. (B)

25. (C) L O S T
↓ ↓ ↓ ↓
31 95 59 87

27. (C) Formation of INC - 1885
Partition of Bengal - 1905
Morley Minto Reform - 1909
Montague Chelmsford
Reform (Government of India Act) - 1919

28. (B) Rashtriya Yuva Sashaktikaran Karyakram has been continuing since 12th Five year plan.
Minister of Youth Affairs – Kiren Rijiju and Sports
Minister of Home Affairs - Amit Shah
Minister of Science – Harsh Vardhan & Technology
Minister of Commerce – Piyush Goyal and Industry

29. (B) 10th January - World Hindi Day
5 June – World Environment Day
11 August – National Daughter's Day
Every year on 31st May World Health Organisation (WHO) and global partners celebrate World No Tobacco Day (WNTD). The focus of World No Tobacco Day 2019 is on "Tobacco and Lung Health".

31. (B) Nitrogen fixation is process by which atmospheric nitrogen is converted into Ammonia (NH_3) or related nitrogenous compounds. The atmospheric nitrogen is molecular dinitrogen (N_2), a relatively non-reactive molecule that is metabolically useless to all but a few micro organisms. Biological fixation converts this N_2 into ammonia which is metabolized by most organism.

32. (B)

Line	**Between**
Durand	Pakistan & Afghanistan
Redcliffe	India & Pakistan
Purbachal	India & Bangladesh
(Zero Line)	

33. (D)

Book	**Author**
Tireless Voice: Key of speeches and articles	– Venkaiah Naidu
Matoshree	– Sumitra Mahajan
Article & Speeches : A Compilation and Andhere Se Ujale Ki Ore	– Arun Jaitley

34. (A) Vande Bharat Express is also known as Train 18. It was designed and built by Integral Coach Factory(ICF) Chennai. The train was launched on 15 February, 2019. Its Predecessor was Shatabdi Express. It has sitting capacity of 1128 passengers.

36. (A) Sachin Tendulkar completed his 100th Century against Bangladesh at the Shere Bangla National Stadium Mirpur, Bangladesh
Wankhede Stadium – Mumbai
Eden Garden – Kolkata
Lords Cricket Ground – London

38. (C) Numaligarh Refinery is located at Morgani, Assam, a joint venture between Bharat Petroleum (61.65%), Oil India (26%) and Govt of Assam (12.35%). In January 2019, the cabinet committee on Economic Affairs approved plans to increase the refinery's capacity to 9 million metric tonnes per year.

40. (D) P.V. Narasimha Rao - 9th Prime Minister of India
Charan Singh – 5th Prime Minister of India
V. P. Singh – 8th Prime Minister of India
I.K. Gujral – 12th Prime Minister of India

42. (B) National waterway-2 is on Brahmaputra river having a length of 891 km between the Bangladesh border.
National waterway-1 is also called Ganga-Bhagirathi-Hoogli river system having a length of 1620 km, the longest waterway of India.
Total number of waterways is India is 111.

56. (C) $\dfrac{1}{2+\dfrac{3}{4+\dfrac{5}{6+\dfrac{7}{8}}}}$

$= \dfrac{1}{2+\dfrac{3}{4+\dfrac{5}{\dfrac{55}{8}}}} = \dfrac{1}{2+\dfrac{3}{4+\dfrac{8}{11}}}$

$= \dfrac{1}{2+\dfrac{3}{\dfrac{44+8}{11}}} = \dfrac{1}{2+\dfrac{33}{52}}$

$= \dfrac{1}{\dfrac{104+33}{52}} = \mathbf{\dfrac{52}{137}}$

57. (C) Let $a = \left(n^2 + \dfrac{1}{n^3}\right)$ and

$b = \left(n^3 + \dfrac{1}{n^2}\right)$

Now, $a + b = n^2 + \dfrac{1}{n^3} + n^3 + \dfrac{1}{n^2}$ ...(i)

$n + \dfrac{1}{n} = 5$ (given),

then , $n^2 + \dfrac{1}{n^2} = \left(n + \dfrac{1}{n}\right)^2 - 2$

$= 5^2 - 2 = 23$

and $n^3 + \dfrac{1}{n^3} = \left(n + \dfrac{1}{n}\right)^3 - 3\left(n + \dfrac{1}{n}\right)$

$= (5)^3 - 3(5) = 110.$

Now, a + b = 110 + 23 = 133...(ii)

Given that, $n^3 + \dfrac{1}{n^2} = 14$...(iii)

Putting equation (ii) and equation (iii) in equation (i)

$133 = 14 + n^2 + \dfrac{1}{n^3}$

$\therefore \quad n^2 + \dfrac{1}{n^3} = 133 - 14 = \mathbf{119}$

58. (C) $x = -2, 3$ and -5, satisfies the equation $x^3 + 4x^2 - 11x - 30 = 0$

$\therefore$ **$(x - 3)$, $(x + 2)$ and $(x + 5)$** are the factors of $x^3 + 4x^2 - 11x - 30$

59. (B) Let the distance between cities be x

Time taken by car A $= \dfrac{x}{72}$

Time taken by car B $= \dfrac{x}{90}$

ATQ,

$\dfrac{x}{72} - \dfrac{x}{90} = 1$

$\Rightarrow \dfrac{5x - 4x}{360} = 1 \Rightarrow x = 360$

$\therefore \quad x =$ **360 km**

60. (B) Given,

$\alpha + \beta = \dfrac{\pi}{4}$

Taking 'tan' both sides

$\tan(\alpha + \beta) = \tan\dfrac{\pi}{4}$

$\Rightarrow \dfrac{\tan\alpha + \tan\beta}{1 - \tan\alpha.\tan\beta} = 1$

$\Rightarrow \tan\alpha + \tan\beta = 1 - \tan\alpha.\tan\beta$

$\Rightarrow \tan\alpha + \tan\alpha.\tan\beta + \tan\beta = 1$

adding '1' both side

$\Rightarrow \tan\alpha\,(1 + \tan\beta) + 1(1 + \tan\beta) = 1 + 1$

$\Rightarrow (\tan\alpha + 1)(\tan\beta + 1) = \mathbf{2}$

61. (B) Let n be the number of sides of polygon

ATQ,

$$\frac{(n-2)180^\circ}{n} = 140^\circ$$

$$\Rightarrow \frac{n-2}{n} = \frac{140}{180} = \frac{7}{9} \Rightarrow n = 9$$

Number of diagonals of polygon

$$= \frac{n(n-3)}{2}$$

$$= \frac{9\times(9-3)}{2} = \frac{9\times 6}{2} = 9 \times 3 = \mathbf{27}$$

62. (A) $(3^{33} + 3^{33} + 3^{33})(2^{33} + 2^{33}) = 6^x$

$\Rightarrow (3.3^{33})(2.2^{33}) = 6^x$

$\Rightarrow 3^{34}.2^{34} = 6^x$

$\Rightarrow 6^{34} = 6^x$

$\Rightarrow x = \mathbf{34}$

63. (D) Slope of line $(m_1) = \frac{y_2 - y_1}{x_2 - x_1}$

Passing points are (–5, 4) and (3, 0)

$$m_1 = \frac{0-4}{3-(-5)} = -\frac{4}{8} = -\frac{1}{2}$$

Slope of perpendicular lines is given by

$m_1.m_2 = -1$

$$\left(-\frac{1}{2}\right).\ m_2 = -1$$

$\therefore$ $\mathbf{m_2 = 2}$

64. (A) A.T.Q. Harsh Deepak

Work efficiency 5 : 4

Harsh complete his work in 50 days.

$\therefore$ Total work = 5 × 50 = 250 units

As given, they follow this pattern to complete the work

4 + 5 + 5 = 14 units in 3 days.

$\therefore$ 14 × 17 = 238 units in 3 × 17 = 51 days

Now, next day Deepak will come to work and then Harsh

Work → 238 + 4 + 5 = 247 units

Days → 51 + 1 + 1 = 53

Now work left = 250 - 247 = 3 units

Time taken by Harsh to complete 3 units

= 3/5 days

$\therefore$ Total number of days = $53 + \frac{3}{5} = \mathbf{53\frac{3}{5}}$ days

65. (A) A.T.Q.,

	I	II
CP	5	5
SP	7	4

S.P. of both item is same.

So, $\begin{matrix} & \text{I} & \text{II} \\ \text{CP} & \left(\frac{5}{7}\right)_{\times 4} & \left(\frac{5}{4}\right)_{\times 7} \\ \text{SP} & & \end{matrix} \Rightarrow \begin{matrix} \text{I} & \text{II} \\ 20 & 35 \\ 28 & 28 \end{matrix}$

Total CP = 20 + 35 = 55

Total SP = 28 + 28 = 56

Profit = SP - CP = 56 - 55 = 1

$$\text{Profit\%} = \frac{1}{55}\times 100 = \mathbf{1\frac{9}{11}}\%$$

66. (B) N = 90 × 42 × 324 × 55

$= 2^4 \times 3^7 \times 5^2 \times 7 \times 11$

$\therefore$ maximum value of m = **7**

67. (C) Average of number in AP = middle term

Average of 35 even numbers (A.P) = 18th term

$\Rightarrow$ 18th term = 44

Let first term (simallest term) be a

Tn = a + (n –1) d

$\Rightarrow$ 44 = a + 34

$\Rightarrow$ a = 44 – 34 = **10**

68. (B) Given that,

$\text{cosec}\theta - \cot\theta = a$ ...(i)

we know that,

$$\text{cosec}\theta + \cot\theta = \frac{1}{\text{cosec}\theta - \cot\theta}$$

So, $\text{cosec}\theta + \cot\theta = \frac{1}{a}$ ...(ii)

Adding equation (i) and equation (ii),

$$2\ \text{cosec}\theta = a + \frac{1}{a}$$

$$\Rightarrow \text{cosec}\theta = \frac{a^2+1}{2a}$$

$$\Rightarrow \sin\theta = \frac{2a}{1+a^2}$$

So, $\cos\theta = \sqrt{1-\sin^2\theta}$

$= \sqrt{1-\left(\frac{2a}{1+a^2}\right)^2}$

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

$= \sqrt{\frac{1+a^4+2a^2-4a^2}{(1+a^2)^2}}$

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

$\cos\theta = \frac{1-a^2}{1+a^2}$

So, $\sec\theta = \frac{1+a^2}{1-a^2}$

69. (B) ATQ,

876p37q is divisible by 275

$275 = 25 \times 11$

$\Rightarrow$ Given number must be divisible by 25 and 11 both.

876p37q $\rightarrow$ Can only be divisible by 25 when number formed by last two digits are divisible by 25

$\therefore$ q = 5

876p375 $\rightarrow$ Can only be divisible by 11 when

(8 + 6 + 3 + q) – (7 + p + 7) = 11 m

(8 + 6 + 3 + 5) – (14 + p) = 11m

p = 8, at m = 0

$\therefore$ **p = 8, q = 0**

70. (A) Ratio of profit = $\frac{A}{B} = \frac{(5\times4)+(4\times8)}{(7\times6)+(6\times6)}$

$\frac{A}{B} = \frac{52}{78} = \frac{2}{3}$

B's share = $\frac{3}{5}\times1434 = \frac{4302}{5}$

= ₹860.4

71. (B) Let the principal be ₹ x and time y years

ATQ,

$\frac{x\times10\times y}{100} = 35 - x$

$\Rightarrow y = \frac{35-x}{x}\times10$ ---------(i)

& $\frac{x\times8\times y}{100} = 30 - x$

$\Rightarrow y = \frac{(30-x)}{x}\times 12.5$ -------(ii)

Equation (i) and (ii)

$\frac{10}{x}(35-x) = \frac{12.5}{x}(30-x)$

$\Rightarrow$ $350 - 10x = 375 - 12.5x$

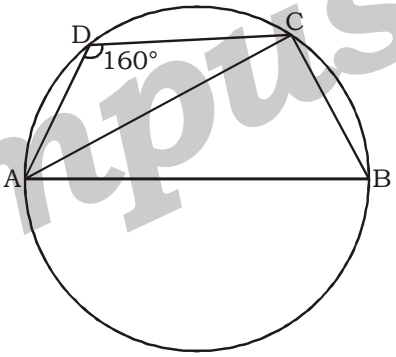
$\Rightarrow$ $2.5x = 25$

$\Rightarrow$ x = ₹10

$\Rightarrow y = \frac{35-10}{10}\times10 = 25$ years

$\therefore$ Required time = **25 years**

72. (C)



Here, $\angle ADC + \angle ABC = 180°$

$\Rightarrow$ $\angle ABC = 180° - 160° = 20°$

In ΔABC,

$\angle ACB = 90°$ (Angle of semi-circle)

Now, $\angle ABC + \angle ACB + \angle BAC = 180°$

$\Rightarrow$ $20° + 90° + \angle BAC = 180°$

$\Rightarrow$ $\angle BAC =$ **70°**

73. (B) ATQ,

$A = 1200000 \times \frac{15}{100}\times\frac{64}{100}\times\frac{15}{100}$

$\Rightarrow$ A = 17280

$B = 1200000 \times \frac{16}{100}\times\frac{80}{100}$

$\Rightarrow$ B = 153600

$\therefore$ Required percentage

$= \frac{17280}{153600}\times100 =$ **11.25**

74. (B) Total number of offline applicants from exam centre H = $1200000 \times \frac{20}{100} \times \frac{16}{100}$

= 38400

Total number of present applicants from exam centre G

= $1200000 \times \frac{25}{100} \times \frac{75}{100}$

= 225000

∴ Required difference

= 225000 – 38400

= **186600**

75. (B) Offline applicants from exam centre F and G

F ⇒ $1200000 \times \frac{15}{100} \times \frac{34}{100}$

= 61200

G ⇒ $1200000 \times \frac{25}{100} \times \frac{31}{100}$ = 93000

∴ Required total = 61200 + 93000

= **154200**

MEANINGS IN ALPHABETICAL ORDER

Word	Meaning in English	Meaning in Hindi
Epilogue	a final section or speech after the main part of a book, play, or musical composition	परिशिष्ट भाग
Epitaph	something written or said in memory of a dead person	स्तृति-लेख
Fatuous	foolish or stupid	मूर्ख
Grisly	causing horror or fear; very shocking	डरावना, भयानक
Gruesome	causing horror or disgust	भयंकर
Legion	a large group of soldiers	सैनिकों का दल
Occult	of or relating to supernatural powers or practices	जादू-टोना
Pliable	able to bend, fold, or twist easily	आसानी से मुड़ सकने वाला
Profuse	given, produced, or existing in large amounts	प्रचुर मात्रा में
Prudent	having or showing careful good judgment	समझदार
Quiver	to shake because of fear, nervousness, etc.	काँपना, व्याकुल होना
Servile	very obedient and trying too hard to please someone	सेवक जैसा
Sincerity	freedom from fraud or deception; honesty	ईमानदारी, सत्यता
Senile	showing a loss of mental ability (such as memory) in old age	बुढ़ापे का
Stratagem	a trick or plan for deceiving an enemy or for achieving a goal	छल, कपट

DP HEAD CONSTABLE – 01 (ANSWER KEY)

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

76. (C) Replace 'why was she weeping' with why she was weeping. The sentence does not remain in interrogative form in indirect speech. This means that helping verb is used after the subject.

77. (D) No error

78. (D) No error

81. (A) 'Out of touch' means 'not in contact'.

89. (C) 'Go to' is the correct option. According to meaning, sentence should be in Present Indefinite Tense.

Note:- If your opinion differs regarding any answer, please message the mock test and question number to 8860330003

Note:- Whatsapp with Mock Test No. and Question No. at 7053606571 for any of the doubts. Join the group and you may also share your suggestions and experience of Sunday Mock Test.

Note:- If you face any problem regarding result or marks scored, please contact 9313111777