REASONING ABILITY

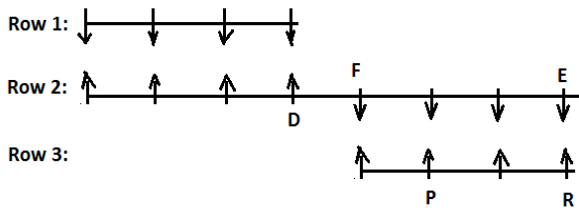**Directions (1-5):** E faces the one who sits second to the right of P. No one sits on the left of E. Only one person sits between P and R. Only two person sits between R and the one who faces F. D sits immediate right of F. D does not sits at the end of the row.
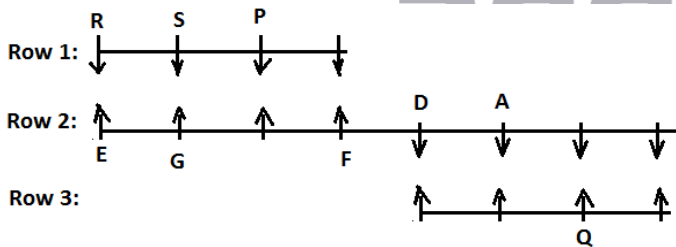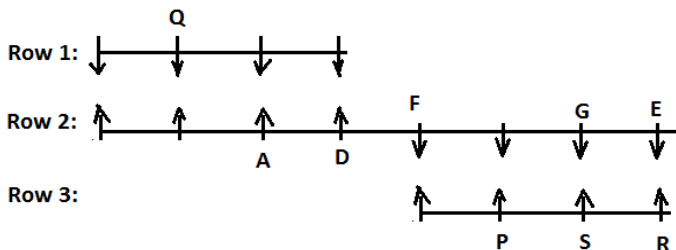
Case 1
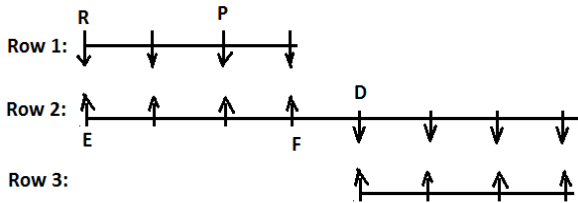
Case 2

Q sits second to the right of the one who faces D. A face the one who sits on the immediate left of Q. G faces S but does not sits at the end of the row. P is not the immediate neighbour of G.
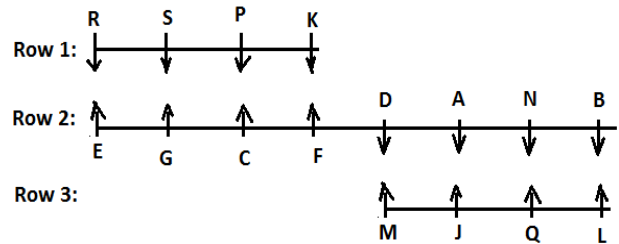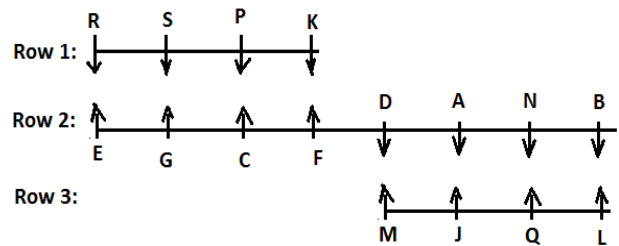
Case 1

Case 2

Only one person sits between K and S. K faces the one who sits third to the right of N. J and M are immediate neighbours. J does not faces D. Only two person sits between M and L. More than two persons sits between B and C, who does not faces L.
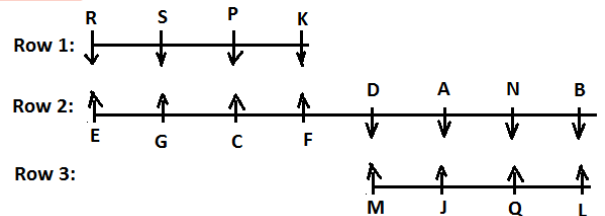
Case 1

Case 2

C does not face south. So case 2 gets eliminated.

1. (c);   2.   (b);   3.   (c);
4. (d);   5.   (c);

Directions (6-10): Logic: As a first step let's first understand the logic behind the Output. Words are arranged from right end and numbers are arranged from left end. In each step one word and one number are arranged.

Word – Words are arranged in ascending order from left to right according to the English alphabetical order. In the first step the word starting with the letter having higher place value in the English alphabet is arranged first on the right end and also the letters of the word are arranged in increasing alphabetical order within the word.

Number- Numbers are arranged in ascending order from left to right. In the firs step the highest number is arranged first and then in the second step 2nd highest numbered gets arranged and so on till the last step and also after rearranging the numbers add 5 in the even number and subtract 5 in the odd numbers.

Input: IMRE 40 69 RBHI 86 PMCN 25 KDSM 57 VATW

Step I: 91 IMRE 40 69 RBHI PMCN 25 KDSM 57 ATVW
Step II: 64 91 IMRE 40 PMCN 25 KDSM 57 ATVW BHIR
Step III: 52 64 91 IMRE 40 25 KDSM ATVW BHIR CMNP
Step IV: 45 52 64 91 IMRE 25 ATVW BHIR CMNP DKMS
Step V: 20 45 52 64 91 ATVW BHIR CMNP DKMS EIMR

Step V is the last step of the rearrangement.

6. (a);   **7.** (d);   **8.** (b);
9. (a);   **10.** (d);

11. (c);   **12.** (b);

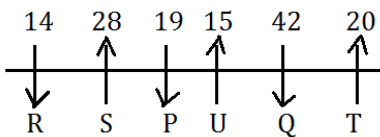**Directions (13-15):**
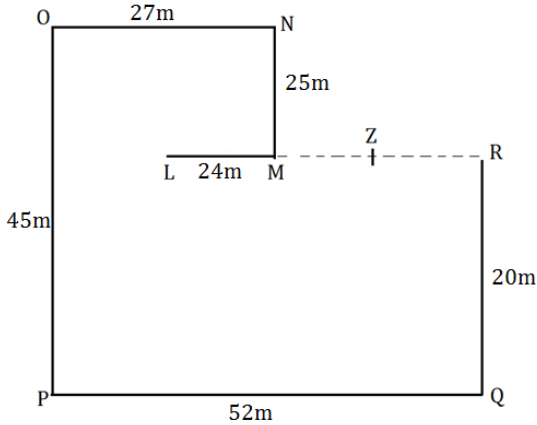
13. (c);

14. (c);

15. (e);

Directions (16-20):

16. (b); I. N % O (False)   II. O & M (True)

17. (b); I. A * D (False)   II. D & B (True)

18. (a); I. H & K (True)   II. T * J (False)

19. (c); I. B & G (False)   II. G @ B (False)

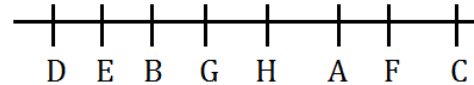**20.** (a); I. M & L (True)   II. V * W (False)

Direction (21-25):

21. (d);   **22.** (d);   **23.** (c);
24. (a);   **25.** (b);

Direction (26-30): In this new pattern coding decoding each letter, except vowel, is assigned a number from 1-6 So, B-1, C-2, D-3, F-4, G-5, H-6, J-1, K-2, L-3, M-4, N-5, P-6, Q-1, R-2, S-3, T-4, V-5, W-6, X-1, Y-2, Z-3.

Also, each vowel is assigned different digits starting from the digit code of Z. So, for vowels the digit codes are - A-3, E-4, I-5, O-6, U-7.

26. (e);   **27.** (d);   **28.** (e);
29. (b);   **30.** (b);

31. (c);

32. (d); Only (I) can be assumed from the given statement as it is mentioned in the given statement that rooftop solar power technology is showing growth.

33. (e); Both I and II follows as salary is an important factor for encouraging students to opt teaching as a career option rather than job and changing the eligibility criterion to graduation for being a teacher as generally the students choose their career option after graduation.

Direction (34-38):

8 yrs	4 yrs	6 yrs	3 yrs	7 yrs	5 yrs
CEO >	CMD >	MD >	GM >	CFO >	FO
6 lakh	14 lakh	4 lakh	7 lakh	5 lakh	9 lakh

34. (b);   **35.** (a);   **36.** (b);
37. (b);   **38.** (d);

Direction (39-40):

39. (a); For I: Yes, it can be inferred from the given statements as it is clearly mentioned punctuality and sincerity are one of the key points which will surely reviewed.
For II: No, it is clear from the given statements that there will be increment but percentage cannot be inferred.
For III: No, as it is mentioned by manager that hard work and dedication towards work will be applauded. But, Is there some employee who have done their work with complete determination and enthusiasm, it cannot be inferred. We can assume it but it cannot be inferred from it.

40. (c); For I: Yes, it weakens the statement of manager as it is said by manager that increment will be based on performance i.e. hard work and determination. But 15% for all those employees who have completed 1 year undermines the statement by manager.
For II: No, it strengthens the statement by manager as performance chart has been prepared and appraisal will be done accordingly.
For III: Yes, it weakens because it is mentioned that punctuality is one of the key factor and if those who is punctual and those who gets relaxation time and both are considered as same, then it's a partiality for the punctual coming employee.

Directions (41-45): There is only one box is kept between box E and box having 25 pens. Box D is kept immediately above the box containing 63 pens. Box E does not contain 63 pens. Only three boxes are kept between box D and the box containing 12 pens.

Position of box	Case 1		Case 2		Case 3	
	Box	No. of pens	Box	No. of pens	Box	No. of pens
9th	D		D			
8th		63		63		
7th					D	
6th			E			63
5th		12		12		
4th		25		25		25
3rd						12
2nd	E				E	
1st						

Only two boxes are kept between box H and the box having 12 pens. More than three boxes are kept between box C and box H. The box having pens which is a perfect square of 3 is kept immediately above box C. The number of pens in box D is equal to the sum of the number of pens in box H and the box which is placed at 2nd position. (i.e. Box H contains 63 pens and 2nd position box contains 9 pens so total number of pens in box D is =(63+9)=72 pens but it is given that 9th position box contains number of pens which is a multiple of 10). So, case 1 and case 2 gets eliminated.

Position of box	Case 1		Case 2		Case 3	
	Box	No. of pens	Box	No. of pens	Box	No. of pens
9th	~~D~~	~~72~~	~~D~~	~~72~~		
8th	~~H~~	~~63~~	~~H~~	~~63~~		
7th					D	72
6th			~~E~~		H	63
5th		~~12~~		~~12~~		
4th		~~25~~		~~25~~		25
3rd						12
2nd	~~E~~	~~9~~		~~9~~	E	9
1st	~~C~~		~~C~~		C	

Only two boxes are kept between the box having 42 pens and box A. Box I is kept at the odd number position but immediately below box F. The number of pens in Box G is equal to the difference between the number of pens in box D and box I. Box B is kept above the box having 8 pens. Box G contains 21 less pens than box A contains.

Position of box	Case 3	
	Box	No. of pens
9th	G	60
8th	A	81
7th	D	72
6th	H	63
5th	B	42
4th	F	25
3rd	I	12
2nd	E	9
1st	C	8

41. (c);   **42. (d);**   **43. (c);**
44. (a);   **45. (a);**

46. (b); For I: Yes, as it is mentioned in statement that nowadays there are 4 major industries in Begusarai, then it is obvious employment will increase.

For II: No, we cannot say that there is no case of murder, kidnapping or extortion, we can only say it has been reduced. But this reduction has touch the figure of zero, it cannot be inferred.

For III: Yes, as it is mentioned growth rate of Begusarai is top in Bihar and 5th among all districts in India, and Begusarai has moved from the phase of darkness. It clearly indicates that people of Begusarai are hardworking and keen to move forward.

For IV: No, it has been mentioned that nowadays Begusarai has 4 major industries but we cannot say that top industrialists have desire to have their industry in Begusarai.
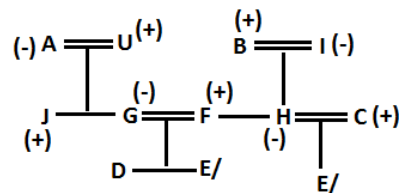
47. (d); I is an assumption. II is a suggestion but not a conclusion. Hence, neither I nor II follows.
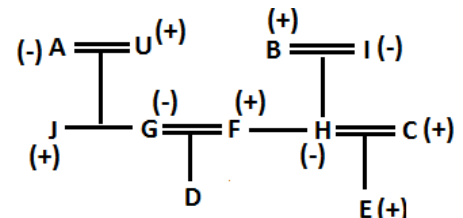
Directions: (48-50):

48. (e);

49. (b);

50. (d);
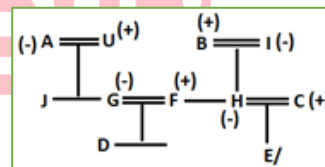
51. (b); Let number of notes on which 50% return is given and on which 80% return is given of PNB be 5x and 7x respectively.

ATQ,

7x – 5x = 1000

x = 500

So, number of notes on which 100% return is given by PNB = 15000 – (7 + 5) × 500

= 9000

Required % = $\frac{9000}{24000} \times 100 = 37.5\%$

52. (a); Let total number of notes received by BOI be 100x.

So, number of notes on which BOI gave 100% return = 75x

And number of notes on which BOI gave 50% return = $25x \times \frac{3}{8}$

ATQ,

$75x + \frac{75x}{8} = 13500$

⇒ x = 160

Hence, total amount received by BOI= 20×160×100

= Rs.3,20,000

And total amount received by Axis bank

= 20 × 10000 = Rs.2,00,000

Required difference = 3,20,000 - 2,00,000

= Rs.1,20,000

53. (c); Number of notes on which BOB gave 100% return

=$\frac{80}{100} \times 15000 = 12,000$

Number of notes on which BOB gave 80% return

= $(24000 - 12000) \times \frac{4}{5} = 9,600$

Required ratio = $\frac{9600}{12000} = 4 : 5$

54. (d); Total number of notes received by SBI

=$\frac{9,00,000}{20} = 45,000$

Total number of notes received by BOI

=$\frac{60}{100} \times 45000 = 27,000$

Required average = $\frac{15,000+45,000+10,000+27,000+24,000}{5}$

=$\frac{1,21,000}{5} = 24,200$

55. (e); Number of notes on which 100% return is given by PNB =$\frac{50}{100} \times 15000 = 7500$

Number of notes on which 50% return is given by PNB = $(15000 - 7500) \times \frac{5}{12} = 3125$

Number of notes on which 80% return is given by PNB = 15000 − 7500 − 3125 = 4375

Required amount = $(15000 \times 20) - (7500 \times 20) - (3125 \times 10) - (4375 \times 16)$

= 300000 − 150000 − 31250 − 70000

= Rs.48,750

56. (e); Let number of notes on which PNB gave 50% return and 80% return be 5x and 7x respectively.

ATQ,

$7x - 5x = 1500$

$x = 750$

So, number of notes on which PNB gave 100% return = $15000 - (7x + 5x)$

= $15000 - 12 \times 750$ = 6000

Now, number of notes on which Axis bank gave 80% return = $5 \times 750 - 1750$

= 2000

So, number of notes on which Axis bank gave 100% return = $10000 - 2000 - 2000 \times \frac{1}{4}$

= 7500

Required number of notes = 6000 + 7500

= 13500

57. (b); Let A's monthly salary be Rs.100x

So, A's expenditure on house rent = 30x

And, A's expenditure on clothing

= $(100x - 30x) \times \frac{40}{100} = 28x$

Monthly amount given by A to his son = $(100x - 30x - 28x) \times \frac{4}{14} = 12x$

ATQ,

$28x - 12x = 24000$

$x = 1500$

A's annual expenditure on house rent = $30 \times 1500 \times 12$

= Rs.540000

58. (c); Let efficiency of A be x units/day.

So, efficiency of C = $\frac{400}{100} \times x = 4x$ units/day

And, efficiency of B = $4x \times \frac{3}{2}$

= 6x units/day

Now, total work = $33 \times x = 33x$ units

Required days = $\frac{33x}{x+6x+4x} = 3$ days

59. (d); Let amount invested by A be Rs.x

So, amount invested by B = $3 \times x$

= Rs.3x

And, amount invested by C = $3x \times \frac{1}{2}$

= Rs.1.5x

Now, profit sharing ratio of A : B : C

=$\left((x \times 11) + ((x - Y) \times 1)\right) : \left((3x \times 11) + ((3x - Y) \times 1)\right) : \left((1.5x \times 11) + ((1.5x - Y) \times 1)\right)$

= $(12x - Y) : (36x - Y) : (18x - Y)$

ATQ,

$\frac{18x-Y}{12x-Y+36x-Y+18x-Y} = \frac{35}{129}$

$\Rightarrow \frac{18x-Y}{66x-3Y} = \frac{35}{129}$

$\Rightarrow 774x - 43Y = 770x - 35Y$

$\Rightarrow x = 2Y$

Required profit sharing ratio $= \frac{12x-Y}{36x-Y}$

$= \frac{24Y-Y}{72Y-Y} \Rightarrow 23 : 71$

60. (e); Let initial quantity of milk and water in the vessel be 30x lit and 10x lit respectively.

Quantity of milk taken out from the vessel $= 80 \times \frac{3}{4}$

$= 60$ lit

Quantity of water taken out from the vessel $= 80 \times \frac{1}{4} = 20$ lit

ATQ,

$\frac{(30x-60)+80}{10x-20} = \frac{700}{100}$

$\Rightarrow x = 4$

Hence, required original quantity of the vessel

$= 30x + 10x = 160$ lit

61. (b); Number of female employees in C who are newly recruited

$= \left(\left(2000 \times \frac{30}{100}\right) - 350\right) \times \frac{38}{100} = 95$

Number of male employees in C who are newly recruited $= 95 \times \frac{3}{5} = 57$

Required % $= \frac{\left(\left(2000 \times \frac{30}{100}\right) - (95+57)\right)}{2000 \times \frac{30}{100}} \times 100$

$= \frac{600-152}{600} \times 100 = 74\frac{2}{3}\%$

62. (a); Male employees in company $- Y = \frac{400}{100} \times 350 = 1400$

Female employees in company $- Y = 1400 \times \frac{3}{4}$

$= 1050$

Required difference $= (1400 + 1050) - 2000 = 450$

63. (c); Female employees who left B

$= \left(\left(2000 \times \frac{25}{100}\right) - 225\right) \times \frac{16}{100} = 44$

Female employees in D $= \left(2000 \times \frac{20}{100}\right) - 160 = 240$

Required % $= \frac{(240+44)-240}{240} \times 100 = 18\frac{1}{3}\%$

64. (b); Male employees in company $- K$

$= \left(\left(2000 \times \frac{25}{100}\right) - 225\right) + 425 = 700$

Average number of female employees in A, C & D in company $- X$

$= \frac{1}{3} \times \left(\left(2000 \times \frac{75}{100}\right) - (240 + 350 + 160)\right)$

$= \frac{1}{3} \times (750) = 250$

Required difference $= 700 - 250 = 450$

65. (d); Employees who are in (18-40) age group in A

$= \left(2000 \times \frac{25}{100}\right) \times \frac{13}{25} = 260$

Employees who are in (18-40) age group in B

$= \left(2000 \times \frac{25}{100}\right) \times \frac{13}{50} = 130$

Employees who are in (18-40) age group in C

$= \left(2000 \times \frac{30}{100}\right) \times \frac{4}{5} = 480$

Employees who are in (18-40) age group in D

$= \left(2000 \times \frac{20}{100}\right) \times \frac{33}{40} = 330$

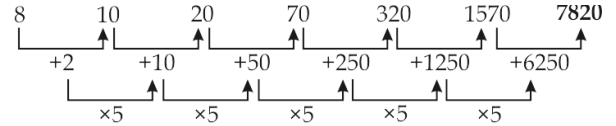Employees who are in (40+) age group in A, B, C & D in company $- X$

$= 2000 - (260 + 130 + 480 + 330) = 800$

Required ratio $= \frac{(260+130+480+330)}{800} = 3 : 2$

66. (a); Wrong number = 7830

Pattern of series –

So, there should be 7820 in place of 7830.

67. (b); Here, the pattern followed is

$18 \times 1 + 2 = 20$

$20 \times 2 + 3 = 43$

$43 \times 3 + 4 = 133$

$133 \times 4 + 5 = 537$

$537 \times 5 + 6 = 2691$

$2691 \times 6 + 7 = 16153$

So, wrong number is 16163 which should be replaced by 16153

68. (c); Wrong number = 78

Pattern of series –
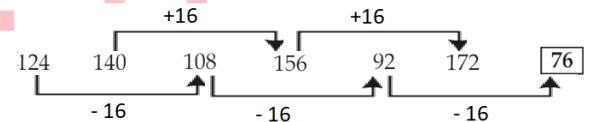
So, there should be 76 in place of 78.

69. (c); Wrong number = 260

Pattern of series –

So, there should be 261 in place of 260.

70. (e); Wrong number = 2515

Pattern of series –

$267 + 343 = 610$

$343 + 610 = 953$

$610 + 953 = 1563$

$953 + 1563 = 2516$

$1563 + 2516 = 4079$

So, there should be 2516 in place of 2515.

71. (b); Wrong number = 36

Pattern of series –

| 38 | 80 | 166 | 340 | 690 | 1392 | 2798 |

×2+4 ×2+6 ×2+8 ×2+10 ×2+12 ×2+14

So, there should be 38 in place of 36.

72. (a); Wrong number = 30

Pattern of series –

| 35 | 100 | 230 | 490 | 1010 | 2050 | 4130 |

+65 +130 +260 +520 +1040 +2080
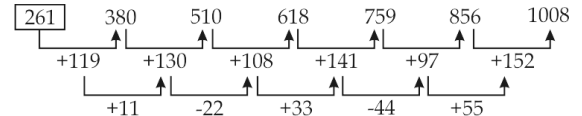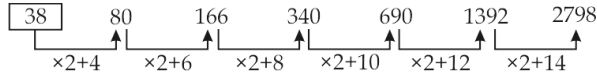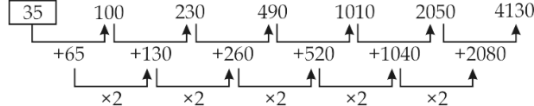
×2 ×2 ×2 ×2 ×2

So, there should be 35 in place of 30.

73. (b); Let present age of A and B be 20x years and 50x years respectively.

So, present age of C = $50x \times \frac{18}{25}$

= 36x years

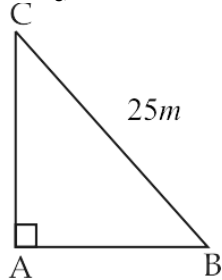And, present age of D = $36x \times \frac{13}{12}$

= 39x years

ATQ,

$50x - 39x = 11$

$x = 1$

Hence, present age of A = 20x = 20 years

74. (e); ATQ,

Perimeter of triangle ABC = 60

AB + BC + CA = 60

AB + 25 + CA = 60

⇒AB + CA = 35

Now, let length of AB be x m. (as AB is the smallest side)

So, length of CA = $(35 - x)m$

Now,

$(AB)^2 + (CA)^2 = (BC)^2$

$(x)^2 + (35 - x)^2 = (25)^2$

⇒ $x^2 - 35x + 300 = 0$

⇒ $x = 15, 20$

So, length of smallest side is 15m.

75. (a); Let cost price of article – M be Rs.100x.

So, marked price of article – M = $100x \times \frac{120}{100}$

= Rs.120x

And, selling price of article – M = $120x \times \frac{95}{100}$

= Rs.114x

ATQ,

$114x = 285 \Rightarrow x = 2.5$

Hence, cost price of article – N = $\frac{120}{100} \times 100 \times 2.5$

= Rs.300

So, selling price of article – N = $300 \times \frac{115}{100}$ = Rs.345

76. (c); Let number of black, red and white balls be a, b & c respectively.

From I:

ATQ,

$\frac{a}{a+b+c} = \frac{1}{6}$

⇒ 5a = b + c   ...(i)

And, $\frac{b}{a+b+c} = \frac{1}{6}$

⇒ 5b = a + c   ...(ii)

And, $\frac{c}{a+b+c} = \frac{2}{3}$

⇒ $c = 2a + 2b$ ...(iii)

On solving (i), (ii) & (iii), we get:

a : b : c = 1 : 1 : 4

From II:

ATQ,

$\frac{c-1}{a+b+c-1} = \frac{15}{23}$

⇒ $8c = 15a + 15b + 8$

From I & II:

Let a, b & c be x, x & 4x respectively.

⇒ $32x = 15x + 15x + 8$

⇒ x = 4

Hence, t = 24

So, **statement I & II** together are necessary to answer the question.

77. (b); From I:

Amount invested by Deepak = $12000 \times \frac{5}{4}$

= Rs.15000

Profit sharing ratio of Shivam to that of Deepak = $(12000 \times 10):(15000 \times 4)$

= 2 : 1

From II:

Let amount invested by Shivam and Deepak be Rs.4x and Rs.5x respectively.

And let period of investment of Shivam and Deepak be 5y months and 2y months respectively.

Now, profit sharing ratio of Shivam to that of Deepak = $(4x \times 5y):(5x \times 2y) = 2:1$

Now, let total profit be Rs.P.

ATQ,

$\frac{2-1}{3} \times P = 12000$

⇒ P = Rs.36000

Hence, profit share of Shivam=$\frac{2}{3}$×36000 = Rs.24000

Hence, **statement II** alone is sufficient to answer the question.

78. (c); From I:
Let cost price of the article be Rs.100x.

So, marked price of the article = $100x \times \frac{180}{100}$

= Rs.180x

And selling price of the article = Rs.(100x + 100)

From II:
Let marked price and discount allowed on the article be Rs.3y and Rs.y respectively.

From I & II:

3y = 180x

⇒ y = 60x

ATQ,

$100x + 100 = 180x - 60x$

⇒ x = 5

So, marked price of the article = 180x

= Rs.900

Hence, **statements I and II** together are sufficient to answer the question.

79. (e); Let rate of interest be R% p.a.

From I:
Let period of investment be t years.

ATQ,

(if sum is invested at SI); $\frac{6000 \times t \times R}{100} = 4500$

⇒ tR = 75

(if sum is invested at CI); $6000 \left(1 + \frac{R}{100}\right)^t = 10500$

From II:
Let amount invested by Pankaj at SI and at CI be Rs.100x

ATQ,

$\left(P\left(\left(1 + \frac{R}{100}\right)^2 - 1\right)\right) - \left(\frac{P \times R \times 2}{100}\right) = 90$

⇒ $PR^2 = 900000$

Hence, **statements I and II** together are not sufficient to answer the question.

80. (a); From I:
Let radius and height of cylinder be r cm and h cm respectively.

ATQ,

$2\pi rh = 1760$

⇒ rh = 280   ….(i)

And, $2\pi r(r + h) = \frac{170}{100} \times 1760$

⇒ $r^2 + rh = 476$ …(ii)

On solving (i) & (ii), we get:

$r = 14, \ h = 20$

Hence, volume of cylinder = $\pi r^2 h$ = 12320 cm³

From II:
Height of cylinder = $30 \times \frac{2}{3}$ = 20cm

ATQ,

$\pi r^2 \times 20 = 2 \times \frac{1}{3} \pi r^2 \times 30$

It can't be solved further.

Hence, **statement I** alone is sufficient to answer the question.

81. (c); Quantity I:
Total number of ways = $(^8C_2 \times {}^4C_2) + (^8C_1 \times {}^4C_3) + (^4C_4)$

= 168 + 32 + 1 = 201

Quantity II:
3-digit numbers which are divisible by 3 and ends with an even number = (102, 108, 114, -------, 996)

Required number of 3 – digit numbers= $\frac{996-102}{6}+1$

= 150

So, Quantity I > Quantity II.

82. (a); Quantity I:

ATQ,

$\frac{5900 \times R \times 3}{100} = 3186$

⇒ $R = 18\%$

Required interest = $\frac{7900 \times (18+5) \times 3}{100}$ = Rs.5451

Quantity II:
Equivalent rate of interest of 13% p.a. for 2 years at CI = $13 + 13 + \frac{13 \times 13}{100}$ = 27.69%

ATQ,

$\frac{X \times 27.69}{100} = 2325.96$

⇒ X = Rs.8400

So, Quantity I < Quantity II.

83. (c); Quantity I:
Let CP & MP of an article be Rs.19x and Rs.30x respectively.

ATQ,

$19x \times \frac{120}{100} = 912$

⇒ $x = 40$

Required difference = $30x \times \frac{24}{100} - 19x \times \frac{20}{100}$

= $7.2x - 3.8x$ = Rs.136

Quantity II:
Let cost price of the article be Rs.100x

So, marked price of the article = $100x \times \frac{170}{100}$

= Rs.170x

And, selling price of the article = $170x \times \frac{60}{100}$

= Rs.102x

ATQ,

$102x = 183.6$

⇒ $x = 1.8$

Required sum = $170x \times \frac{40}{100} + (102x - 100x)$

= $68x + 2x$ = Rs.126

So, Quantity I > Quantity II.

84. (e); Quantity I:

Let speed of boat in still water & speed of stream be '11x km/hr.' and 'x km/hr.' respectively.

ATQ,

$\frac{480}{11x-x} + \frac{480}{11x+x} = 11$

$\Rightarrow x = 8$

So, speed of boat in still water = 11x = 88 km/hr.

Quantity II:

Let speed of boat in still water & speed of stream be 'a km/hr.' and 'b km/hr.' respectively.

ATQ,

$\frac{350}{3.5} = (a+b)$

$\Rightarrow (a+b) = 100$ ...(i)

And, $\frac{380}{5} = (a-b)$

$\Rightarrow (a-b) = 76$ ...(ii)

On solving (i) & (ii), we get:

a = 88 km/hr.

So, Quantity I = Quantity II.

85. (c); Quantity I:

Let A's present age be 10x years.

So, B's present age = $10x \times \frac{160}{100}$

= 16x years

And, C's present age = $16x \times \frac{2}{5}$ = 6.4x years

And, D's present age = $2 \times 6.4x$

= 12.8x years

ATQ,

$16x - 12.8x = 8$

$\Rightarrow x = 2.5$

Hence, required average = $\frac{10x+16x+6.4x+12.8x}{4}$

= 11.3x = 28.25 years

Quantity II:

Let present age of P be p years.

So, present age of R = $(p-15)$ years

ATQ,

Present age of Q = $\left(2 \times (p-15)\right) - p$

= $(p-30)$ years

Now, $(p+4) = 2 \times (p - 30 + 4)$

$\Rightarrow p = 56$

Hence, present age of R = $(p-15)$ years

= 41 years

And, present age of Q = $(p-30)$ years

= 26 years

So, required age = 26 years

So, Quantity I > Quantity II.

86. (b); Let total number of applicants in A be 100x.

So, total number of applicants in E = 70x

Female applicants who applied for renewal of passports from A = $100x \times \frac{60}{100} \times \frac{40}{100}$ = 24x

Female applicants who applied for new passports from A = $100x \times \frac{40}{100} \times \frac{3}{10}$ = 12x

Female applicants who applied for renewal of passports from E = $70x \times \frac{70}{100} \times \frac{60}{100}$ = 29.4x

Female applicants who applied for new passports from E = $70x \times \frac{30}{100} \times \frac{1}{3}$ = 7x

Required ratio = $\frac{24x+12x}{29.4x+7x} = \frac{36x}{36.4x}$ = 90 : 91

87. (b); Let number of male and female who applied for new passports from C be 2x and 3x respectively.

ATQ,

$3x - 2x = 800$

$x = 800$

Total number of applicants for passports from C

= $(3 \times 800 + 2 \times 800) \times \frac{100}{50}$ = 8000

Total female who applied for passports from C

= $8000 \times \frac{50}{100} \times \frac{50}{100} + (3 \times 800)$ = 4400

Total male who applied for passports from C

= 8000 − 4400 = 3600

Required % = $\frac{4400}{3600} \times 100 = 122\frac{2}{9}$%

88. (e); Let total number of applicants in A be 100x.

ATQ,

$100x \times \frac{60}{100} \times \left(\frac{60}{100} - \frac{40}{100}\right) = 2400$

$12x = 2400$

$x = 200$

Hence, number of applicants who applied for new passport from A = $100 \times 200 \times \frac{40}{100}$ = 8000

89. (a); ATQ,

Total applicants from B = $3600 \times \frac{100}{40} \times \frac{100}{45}$

= 20000

Total applicants from E = 20000 + 5000 = 25000

Required number of applicants = $20000 \times \frac{55}{100} +$

$25000 \times \frac{30}{100}$ = 18500

90. (c); Let total number of applicants from C & E be 100x & 100y respectively.

ATQ,

$100x + 100y = 30000$

$x + y = 300$ ....(i)

Now, $100x \times \frac{50}{100} \times \frac{50}{100} - 100y \times \frac{70}{100} \times \frac{60}{100} = 800$

$25x - 42y = 800$ ....(ii)

On solving (i) & (ii), we get:

$x = 200, \ y = 100$

Required average

= $\frac{1}{2} \times \left(\left(100 \times 200 \times \frac{50}{100}\right) + \left(100 \times 100 \times \frac{30}{100}\right)\right)$

= $\frac{1}{2} \times (10000 + 3000) = 6500$

91. (e); Let total number of applicants from A & C be 100x & 100y respectively.

ATQ,

Applicants who applied for new passports from A

$= 100x \times \frac{40}{100} = 40x$

Applicants who applied for new passports from C

$= 100y \times \frac{50}{100} = 50y$

Now, $\frac{40x}{50y} = \frac{2}{3} \Rightarrow \frac{x}{y} = \frac{5}{6} \Rightarrow y = \frac{6x}{5}$

Required % $= \frac{100 \times \frac{6x}{5} - 100x}{100x} \times 100$

$= \frac{120x - 100x}{100x} \times 100 = 20\%$

92. (e); Required probability $= \left(\frac{(^{48}C_1 \times {}^{4}C_1) + {}^{48}C_2}{{}^{52}C_2} \right)$

$= \frac{192 + 1128}{1326} = \frac{220}{221}$

93. (c); 2nd year CI

$= \left(50000 \left(1 + \frac{12}{100} \right)^2 - 50000 \right) - \left(50000 \times \frac{12}{100} \right)$

$= 12720 - 6000 = Rs.6720$

Now, 2nd year SI $= 6720 - 2220 = Rs.4500$

Now, $R = \frac{4500}{75000} \times 100 = 6\%$

94. (a); let speed of train Y be 's' kmph & length of train X & Y be a & b m respectively

ATQ, $\frac{a+b}{120} = (s - 120) \times \frac{5}{18}$ ....(i)

$\frac{a+b}{\frac{40}{3}} = (s + 120) \times \frac{5}{18}$ ....(ii)

On dividing (i) by (ii)

$\frac{1}{9} = \frac{s-120}{s+120}$

S = 150 kmph

95. (e); Let unit's digit and ten's digit of the original number be 'x' and 'y' respectively.

So, original number $= 10y + x$

ATQ,

$10x + y - (10y + x) = 27$

$\Rightarrow 9x - 9y = 27$

$x - y = 3$ ...(i)

And, $x^2 - y^2 = 33$

$(x - y)(x + y) = 33$ ...(ii)

On solving (i) & (ii), we get:

$(x + y) = 11$ ...(iii)

On solving (i) & (iii), we get:

$x = 7, \ y = 4$

So, original number = 47

Sol (96-100): Let distance between Delhi – Bangkok be 10x km.

So, Distance between Dhaka – Bangkok $= 10x \times \frac{80}{100} = 8x$ km

And, distance between Delhi – Dhaka $= 8x \times \frac{27}{32} = \frac{27x}{4}$ km

ATQ,

$10x + 8x + \frac{27x}{4} = 19800$

$\Rightarrow x = 800$

Delhi – Dhaka fare:

Let fare of B be Rs.4a

So, fare of C $= 4a \times \frac{125}{100} = Rs.5a$

And, fare of A $= Rs.(4a - 2700)$

Now,

$\frac{4a - 2700}{5a} = \frac{3}{5}$

$\Rightarrow a = 2700$

Delhi – Bangkok fare:

Total fare of A & B $= 20000 \times 2 = Rs.40000$

Fare of C $= 8000 + 20000 = Rs.28000$

Fare of B $= 26000 \times 2 - 28000 = Rs.24000$

Fare of A $= 40000 - 24000$

$= Rs.16000$

Dhaka – Bangkok fare:

Fare of B = Rs.16000

Fare of A $= 16000 \times \frac{6}{5} = Rs.19200$

Fare of C $= 16000 \times \frac{8}{5} = Rs.25600$

Routes	Distance (in km)	A's fare (in Rs.)	B's fare (in Rs.)	C's fare (in Rs.)
Delhi – Dhaka	5400	8100	10800	13500
Delhi – Bangkok	8000	16000	24000	28000
Dhaka – Bangkok	6400	19200	16000	25600

96. (b); Total fare if Veer uses A for his trip $= 8100 + 19200$

$= Rs.27300$

Total fare if Veer uses B for his trip $= 10800 + 16000$

$= Rs.26800$

Total fare if Veer uses C for his trip $= 13500 + 25600$

$= Rs.39100$

So, the cheapest option for Veer is flight operator B.

97. (d); ATQ,

Total fare paid by Deepak $= 25600 + 28000$

$= Rs.53600$

Required amount $= \frac{53600}{6400+8000} = Rs. \ 3.62/km$

98. (d); ATQ,

Fares for (A, Delhi – Bangkok) = Rs.16000

Fares for (C, Delhi - Dhaka) = Rs.13500

Fares for (B, Dhaka - Bangkok) = Rs.16000

Fares for (A, Dhaka - Bangkok) = Rs.19200

Fares for (B, Delhi - Dhaka) = Rs.10800

So, for (A, Dhaka - Bangkok) fares will be maximum.

99. (b); ATQ,

Per km fare of A = $\frac{19200}{6400}$ = Rs.3/km

Per km fare of B = $\frac{16000}{6400}$ = Rs.2.5/km

Per km fare of C = $\frac{25600}{6400}$ = Rs.4/km

So, per km fare of B is lowest.

100. (e); Required average = $\frac{8100+10800+13500}{3}$ = Rs.10800

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101. (b); To validate the answer, refer to the first paragraph, which mentions, "*Music is assumed to be a fortuitous by-product of this evolutionary development, and is more fully processed in the brain's right hemisphere, which is more associated with the representation of emotions than the left hemisphere.*" Referring to the quoted text, we can infer that the statement given in option (b) is appropriate in context of the given question. Hence, option (b) is the most suitable answer choice.

102. (d); The answer can be validate from various statements given in paragraph four. Among the given statements, only the statement (d) cannot be inferred from the passage. Hence, option (d) is the most suitable answer choice.

103. (c); The entire passage is centered around inability of certain people to enjoy music inspite of having normal brain functioning. Here, the most suitable statement to justify the central idea of the passage would be "*While music may be the universal language, it doesn't speak to everyone*". Also, the statement (ii) is correct in context of the passage. Hence, option (c) is the appropriate answer to the given question.

104. (c); To validate the answer, refer to the second paragraph, which mentions, "*It has been theorised that aesthetic responses to music may derive from the similarity of musical tones to tonal characteristics of human speech associated with different emotional states. If so, it would be hypothesised that the pleasure one finds in music would be related to skills in and enjoyment of social intercourse. Conversely, a lack of musical appreciation would predict deficiencies in social engagement*". Referring to the quoted text, we can infer that the statement given in option (c) is correct in context of the given question.

105. (d); Among the given phrases, the most appropriate phrase to fit in the given blank will be "". Apart from this, no other phrase could make a grammatically correct and contextually meaningful statement. Hence, option (d) is the most suitable answer choice.

106. (a); Here, only in sentence (A) both the words fit in to form a contextually and grammatically correct statement. Hence, option (a) is the most suitable answer choice.

Equip: "supply with the necessary items for a particular purpose."

Arm: "each of the two upper limbs of the human body from the shoulder to the hand."

AND "a thing comparable to an arm in form or function, typically something that projects from a larger structure."

107. (d); Here, only in sentences (A) & (B), both the words fit in to form a contextually and grammatically correct statement. Hence, option (a) is the most suitable answer choice.

Study: a detailed investigation and analysis of a subject or situation.

Ponder: think about (something) carefully, especially before making a decision or reaching a conclusion

108. (e); Here, both the words fit in all the three statements to make the sentences grammatically and contextually correct. Hence, option (e) is the most suitable answer choice.

Anomaly: "something that deviates from what is standard, normal, or expected."

Departure: "a deviation from an accepted, prescribed, or usual course of action"/ "the action of leaving, especially to start a journey

109. (c); Here, only in sentences (A) & (B), both the words fit in to form a contextually and grammatically correct statement. Hence, option (a) is the most suitable answer choice.
Accolade: "an award or privilege granted as a special honour or as an acknowledgement of merit."/ "a touch on a person's shoulders with a sword at the bestowing of a knighthood"
Recognition: "identification of someone or something or person from previous encounters or knowledge"/ "acknowledgement of the existence, validity, or legality of something"/ "appreciation or acclaim for an achievement, service, or ability"

110. (e); Both the words fit in only in statement B to form a grammatically and contextually correct statement. Hence, option (e) is the most suitable answer choice.
Pinnacle: the most successful point; the culmination/ a high, pointed piece of rock
Height: the measurement of someone or something from head to foot or from base to top./

111. (d); Among the given words, "**bravery**" is synonym of valour and **cowardice** is antonym of valour. Hence, option (d) is the most suitable answer choice.

112. (e); Among the given words, "**restrain**" is synonym of impede and **expedite** is antonym of impede. Hence, option (e) is the most suitable answer choice.

113. (c); Among the given words, "**acknowledge**" is synonym and **disparage** is antonym of **appreciates**. Hence, option (c) is the most suitable answer choice.

114. (b); Among the given words, "**graceful**" is synonym and **gauche** is antonym of **elegant**. Hence, option (b) is the most suitable answer choice.

115. (d); The correct answer choice will be (d). Here, 'loathe' is synonym of 'abhor' whereas 'admire' is its antonym.
Abhor: regard with disgust and hatred.
Loathe: feel intense dislike or disgust for

116. (a); Here, the error lies in part (C) of the statement, where "dare call" will be replaced with "dares to call". Here, 'dare' has been used as main verb and will therefore qualify the singular noun, which is 'no one'. 'Dare' will then be followed by 'to+v1'. But when 'dare' and 'need' are used as modal auxiliary, then we do not add '-s' to make it singular. Then we direct use 'to' after them. Hence, option (a) is the most suitable answer choice.

117. (d); Here, "his" will be replaced with "him" because verbs like "heard, watch, behold, see, let, make, bid" will be followed by objective case pronouns and in case we use infinitive then it is used without "to" (bare infinitive). Hence, option (d) is the most suitable answer choice.

118. (d); Here, the error lies in the last part of the statement where "tomorrow" will be changed to "the next day" because in indirect narration, 'tomorrow' is changes to 'on the tomorrow' or 'the next day'. Hence, option (d) is the most suitable answer choice.

119. (e); The given statement is grammatically correct and does not require any changes. Hence, option (e) is the most suitable answer choice.

120. (b); Here, the error lies in part (D) of the statement where "would not" will be replaced by "had not" because in cases of situations denoting unfulfilled wishes/ desires of past, in conditional clause, we use 'if+subject+had+v3' or 'had+subject+v3'. Hence, option (b) is the most suitable answer choice.

121. (e); The answer for the given question can be traced fourth and fifth paragraph "*A major cause of the slowdown of sales in 2019-20 was the difficulty in the availability of finance due to problems in the financial sector. The decade saw the introduction and acceptance of shared platform operators like Uber and Ola…Diesel car sales had risen earlier in the decade, but are now in decline. Meeting Bharat VI norms has added considerably to cost. In addition, the Supreme Court ordered that diesel cars older than 10 years would not be allowed in the NCR".* Hence, option (e) is the correct answer choice.

122. (d); The answer can be verified from the 2nd paragraph. Refer to the lines "*Intense competition in the market saw all manufacturers launching or upgrading existing models in fairly short intervals. The industry became more like that of a developed country. Competition also led to better technology benefiting the consumer. The average fuel efficiency of cars increased from about 16 km per litre to 19.2 km per litre. This resulted not only in reducing fuel consumption but also lowered CO2 emissions.*" Hence, option (d) is the correct answer choice.

123. (c); The most appropriate phrase to complete the given blank is "partly explains the slowing of growth". The previous sentence of the blank mentions about the implementation of Bharat VI which is a measure for safety and emission standards. Further the sentence states that due Bharat VI there has been an increase in the cost of vehicles; thus, this should ultimately result in the decline of the sales growth. Hence, option (c) will be most viable choice to complete the given sentence.

124. (b); Statement (II) is incorrect as in the given passage it is stated that "The entry of global players into the Indian market and cars being of international standards led to exports increasing to 680,000 vehicles in 2018-19.' Statements (I) and (III) are true in the context. Hence, option (b) is the correct answer choice.

125. (b); The most suitable word that expresses the meaning of the highlighted word is "catalyst". Hence, option (b) is the correct answer choice.
Driver means a factor which causes a particular phenomenon to happen or develop.
Straphanger means any user of such public transportation.
Catalyst means a person or thing that precipitates an event.
prototype means a first or preliminary version of a device or vehicle from which other forms are developed.
Chauffer means a person employed to drive a private automobile or limousine for the owner.

126. (d); 'X' was although a valuable employee for the company yet his attitude towards company's initiative was negative and he wanted to develop similar feeling among his colleagues. Hence, 'pessimist' which means 'tending to see the worst aspect of things or believe that the worst will happen' best defines 'X's' attitude towards the initiative.
Empathetic: showing an ability to understand and share the feelings of another
Scientific: based on or characterized by the methods and principles of science
Passionate: having, showing, or caused by strong feelings or beliefs.
Discreet: intentionally unobtrusive

127. (e); Here, as per the given situation, all the given options define 'Y' as a person. Hence, option (e) is the most suitable answer choice.

128. (b); As per the given situations, both the goats were not willing to give way to each other and therefore has to face the consequences. From the situation, we can infer that the goats were stubborn. Hence, option (b) is the most suitable answer choice.
Intuitive: using or based on what one feels to be true even without conscious reasoning; instinctive
Stubborn: having or showing dogged determination not to change one's attitude or position on something
Persuasive: good at persuading someone to do or believe something through reasoning or the use of temptation
Epicurean: relating to or suitable for an epicure.

129. (d); Among the given options, "generous" which means "showing kindness towards others." defines the nature of the child who willingly visited the animal shelter for donation. Hence, option (d) is the most suitable answer choice.
Creative: having good imagination or original ideas
Courageous: not deterred by danger or pain; brave
Dramatic: (of an event or circumstance) sudden and striking

130. (b); Among the given options, "faithful" is the most suitable answer choice to define the nature of the dog which was loyal towards its owner. Hence, option (b) is the most suitable answer choice.
Honest: free of deceit; truthful and sincere.
Faithful: remaining loyal and steadfast
Cultured: characterized by refined taste and manners and good education
Notorious: famous or well known, typically for some bad quality or deed.

131. (d); Reading the second paragraph of the passage, we can conclude the answer to be (c). The lines have been mentioned below for reference:
"**But it should carry out, along with international investigators, a thorough probe into what led to the "accident", and punish whoever is responsible for the "human error."**
"**If Iran is sincere in its apology, it should not only unearth what happened and punish the culprits but also take immediate steps to reduce tensions with the U.S.**"

132. (c); The given passage talks about data protection law implemented In California and hence the only option to satisfy it will be (c).

133. (b); Reading the last paragraph of the passage, we can deduce the answer to be (b). The lines have been mentioned below for reference:

"After initially rejecting western assertion that an Iranian missile brought down the plane, Tehran on Saturday said one of its soldiers fired the missile, mistaking the jet for an enemy aircraft "as it turned to a sensitive area.""

134. (b); Among the given words, '**vengeance**' which means characterized by a desire for revenge is similar to '**retaliatory'**. Hence, option (b) is the most suitable answer choice.

Hostility: unfriendliness or opposition

Redemption: the action of saving or being saved from sin, error, or evil.

Brisk: active and energetic.

135. (c); Reading the last paragraph of the passage, we can conclude the answer to be (c). The lines have been mentioned below for reference:

"**Mr. Trump unilaterally pulled the U.S. out of the Iran nuclear deal, in May 2018, was worth the risk**."

Rest of the options given in the passage are untrue or do not make any contextual sense.

136. (b); The most suitable word to fill the blank (A) as well as the blanks of the given sentences is "proliferating" which means increase rapidly in number; multiply. All the other words are irrelevant. Hence, option (b) is the correct answer choice.

137. (a); To make the sentence grammatically and contextually correct, interchange the words positions at (1) and (2) i.e., estimated and launched. All the other words are correct. Hence, option (a) is the correct answer choice.

138. (e); All the parts of the italicized sentence are correct. Hence, option (e) is the most suitable answer choice.

139. (d); The given sentence consist a conjunction "while" which is used to indicate a contrast in the sentence. The latter part of the sentence "*while the remaining prefer to use the internet only for product research, communication, entertainment and other purposes*" indicates that the initial part of the sentence must mention a dichotomy. Thus, among the given options, option (d) becomes the most viable answer choice.

140. (a); The most suitable word to replace the highlighted incorrect word is "virtual". "virtual" means almost or nearly as described, but not completely or according to strict definition. All the other words are either grammatically incorrect or contextually meaningless.