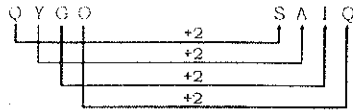
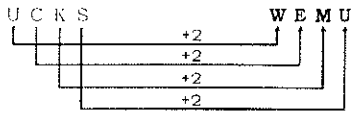


SSC solution on 15 June - 18

1. (B) As,



Similarly,



2. (B) Scissors are used to cut cloth. Similarly, razor is used to shave.
3. (C) The body of fish remains covered with scales externally. Similarly the body of bear remain covered with fur.

4. (C) $8 \times 3 = 24$ & $\frac{24}{2} = 12$

$9 \times 2 = 18$ & $\frac{18}{2} = 9$

5. (B) In all other pairs, lack of first causes the second.
6. (D) Kiwi is the only flightless bird in the group.
7. (B) All except Radio waves are short wavelength radiations.

8. (B) \rightarrow 13th \leftarrow 6th
.....(o).....(o).....
Ramesh Suresh

Therefore, required number of students between Ramesh and Suresh
 $= 33 - (13 + 6) = 14$

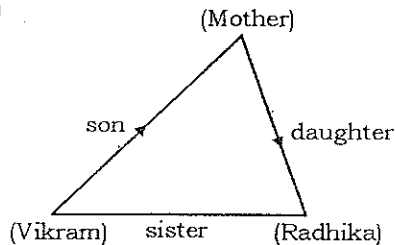
9. (A) The sequence given is:
a b c a / a b c a / a b c a / a b c a

10. (B) As,
H O S P I T A L
↓ ↓ ↓ ↓ ↓ ↓ ↓ ↓
3 2 5 7 4 6 1 8

Similarly,

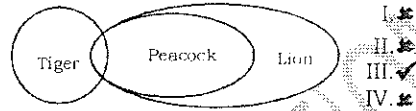
P O S T A L
↓ ↓ ↓ ↓ ↓ ↓
7 2 5 6 1 8

11. (D)



Thus, Radhika is Vikram's sister.

12. (A)



13. (D)

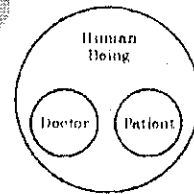


'Neither conclusion I nor II follows.

14. (D)

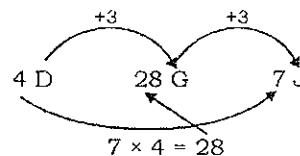
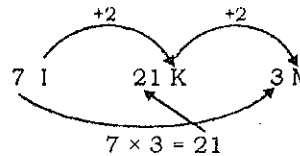
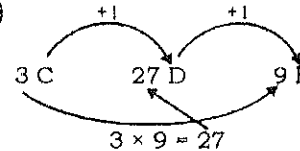
15. (D) There is no 'U' letter in the Keyword.
There is no 'M' letter in the Keyword.

16. (B) Doctor is different from Patient. But both are human beings.



17. (D) $Z \xrightarrow{-6} T \xrightarrow{-6} N \xrightarrow{-6} H$
 $X \xrightarrow{-6} R \xrightarrow{-6} L \xrightarrow{-6} F$
 $V \xrightarrow{-6} P \xrightarrow{-6} J \xrightarrow{-6} D$

18. (B)



19. (C) The pattern followed is:

$(27 \div 3) + (16 \div 4) = 13$

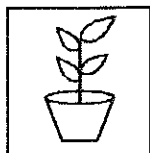
$(42 \div 7) + (65 \div 13) = 11$

So, missing number = $(27 \div 9) + (72 \div 8)$
 $= (3 + 9) = 12$

20. (A) We have: $(466 - 341) \times 2 = 250$
So, missing number = $(398 - 282) \times 2$
= $(116 \times 2) = 232$

21. (B)

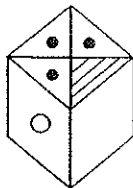
22. (B) The answer figure B is exactly the mirror image of the given figure.



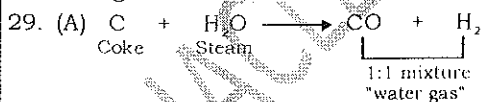
23. (B) After counting the number of triangles in the figure, we find that the number of triangles is 13.

24. (A) $A = 51 \times 14 = 714$
 $B = 61 \times 15 = 915$
 $C = 71 \times 16 = 1136$
Similarly,
 $D = 81 \times 17 = 1377$

25. (D)



27. (B) The Odisha government in association with International Labour Organisation (ILO) will host the 2016 National conference on labour in Bhubaneswar from September 20th. The focus of a 2-day conference is to discuss several issues related to organized and unorganized labourers in India.



31. (C) A^- = anion
 A^+ = cation
 A = Parent atom
Size : anion > parent atom > cation
 $A^- > A > A^+$

32. (B) Twisting the yoke will tilt the picture. A projection colour television uses three picture tubes and yokes for red, green and blue light.

33. (B) The word 'laser' is actually an acronym for light amplification by stimulated emission of radiation. Atoms or molecules of the active medium that have been excited to a higher energy level are stimulated by a passing photon to relax to a lower energy level and emit a photon that is indistinguishable from the passing photon, thereby increasing the number of photons like the incident one.

34. (C) Ordinary Hydrogen/Protium/ ^1_1H
electron/ $e^- = 1$
Proton/ $p^+ = 1$
Neutron/ $n^0 = 0$

35. (A) Plants excrete oxygen, carbon dioxide and water vapour. These gaseous waste products are got rid of by diffusion through the stomata and lenticels. The oxygen is a waste product of photosynthesis while carbon dioxide is produced in the process of respiration.

37. (C) The terabyte is a multiple of unit byte for digital information.

$1 \text{ TB} = 10^{12} \text{ Bytes}$
 $= 1073741824 \text{ Kilobyte}$
 $= 1048576 \text{ MB} = 10^{12} \text{ Gigabytes}$

39. (D) Alka Sirohi, a retired IAS officer of the Madhya Pradesh cadre, has been appointed as the new chairman of Union Public Service Commission (UPSC) with effect from September 21, 2016. She succeeded Deepak Gupta. She will be in office till completion of her term as member on January 3, 2017. Currently, Sirohi is member in the Commission.

42. (C) India has been ranked 112 out of 159 countries in the 2016 World Economic Freedom Index. As per the 2016 annual report of the Economic Freedom of the World, Hong Kong has the highest level of economic freedom worldwide, followed by Singapore, New Zealand, Switzerland, Canada, Georgia, Ireland, Mauritius, the UAE, Australia and the UK. The report is based on data from 2014 and measures the economic freedom by analyzing the policies and institutions of all 159 countries and territories.

44. (B) The book "Democrats and Dissenters" has been authored by Ramchandra Guha. The book comprises 16 essays on a wide range of issues like India's relation with its neighbours, freedom of expression, discrimination against the tribals among others.

47. (A) The Indian Constitution borrowed such features as parliamentary form of government, introduction of Speaker and his role, the concept of single citizenship, the Rule of law, procedure of law making etc from England. The Indian citizenship and nationality law and the Constitution of India provide single citizenship for all of India.

48. (C) Perfectly competitive firms are free to enter and exit an industry. They are not restricted by government rules and regulations, start-up cost, or other barriers to entry. Like perfect competition, free entry and exit of firms is possible under monopolistic competition.

49. (B) Dear Money is also known as tight money.

It is the money which has to be borrowed at a high interest rate and so restricts expenditure by companies. This situation can be a result of a restricted money supply, causing interest rates to be pushed up due to the forces of supply and demand. Business may have a tough time raising capital during a period of dear money.

50. (A) Money is referred to as a measure of value and prices. Because the market enables any commodity to be turned into money and money into any commodity, objective exchange value is expressed in terms of money. It is a price index.

51. (A) $\sin \theta = \frac{1}{2}$ (given) $\Rightarrow \theta = \sin 30^\circ$

$$\therefore 3 \cos \theta - 4 \cos^3 \theta$$

$$= 3 \times \frac{\sqrt{3}}{2} - 4 \left(\frac{\sqrt{3}}{2} \right)^3 = \frac{3\sqrt{3}}{2} - \frac{4 \times 3\sqrt{3}}{8}$$

$$= \frac{3\sqrt{3}}{2} - \frac{3\sqrt{3}}{2} = 0$$

52. (C) Let four numbers are a, b, c and d then

$$a + b + c + d = 48 \quad \dots(i)$$

$$\text{and } a + 5 = b + 1 \quad \dots(ii)$$

$$\text{or, } a = b - 4 \quad \dots(iii)$$

$$\text{and } c - 3 = d - 7 \quad \dots(iv)$$

$$c = d - 4 \quad \dots(v)$$

Substituting equation (iii) and (v) in equation (i), we get

$$b - 4 + b + d - 4 + d = 48$$

$$b + d = 28 \quad \dots(vi)$$

But we know,

$$b + 1 = d - 7$$

$$b = d - 8$$

Substituting in equation (vi), we get

$$d - 8 + d = 28 \Rightarrow 2d = 36 \Rightarrow d = 18$$

solving this way we get a = 6, b = 10, c = 14 and d = 18.

53. (A) In such cases, $\angle BOC = 90^\circ - \frac{1}{2} \angle A$

54. (C) Let x and y be the numbers

$$\text{ATQ, } x + y = 333 \frac{1}{3} \% \text{ of } y$$

$$x + y = \frac{1000}{300} y$$

$$\Rightarrow x = \frac{10}{3} y - y$$

$$\Rightarrow x = \frac{7}{3} y \Rightarrow \frac{x}{y} = \frac{7}{3}$$

$$\text{Required ratio} = 7 : 3$$

$$55. (C) \frac{(\sec \theta + \tan \theta)}{(\sec \theta - \tan \theta)} = \frac{209}{79}$$

(Applying componendo and dividendo)

$$\Rightarrow \frac{[(\sec \theta + \tan \theta) - (\sec \theta - \tan \theta)]}{[(\sec \theta + \tan \theta) + (\sec \theta - \tan \theta)]} = \frac{[209 - 79]}{[209 + 79]}$$

$$\Rightarrow \frac{2 \tan \theta}{2 \sec \theta} = \frac{130}{288}$$

$$\Rightarrow \frac{\sin \theta}{\cos \theta} \times \cos \theta = \frac{65}{144} \Rightarrow \sin \theta = \frac{65}{144}$$

$$56. (D) \left(\frac{1000 - 3}{999} \right) \times 999 = 999000 - 3 = 998997$$

$$57. (A) \text{ Acid in 24 litre} = 12\% \text{ of } 24 = \frac{24 \times 12}{100}$$

Let x litre of water added

then there are $\frac{12 \times 24}{100}$ litre of acid in (24 + x)

litre of diluted liquid

$$\text{ATQ, } 9\% \text{ of } (24 + x) = \frac{12}{100} \times 24$$

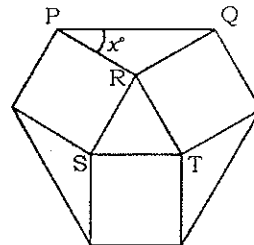
$$\Rightarrow \frac{9}{100} (24 + x) = \frac{12 \times 24}{100}$$

$$\Rightarrow 24 + x = \frac{12 \times 24}{9}$$

$$\Rightarrow x = 32 - 24 = 8 \text{ litre}$$

So, 8 litre of water need to be added.

58. (C)



PR = RS (sides of a square)

RS = RT (sides of an equilateral triangle)

RQ = RT (sides of a square)

$\therefore RQ = PR$ (RQ & PR are sides of an isosceles Δ)

$\angle RPQ = \angle RQP$

All the angles at point R must equal 360°

$$\angle PRQ = 360^\circ - (90^\circ + 90^\circ + 60^\circ) = 120^\circ$$

$$\therefore x = (180^\circ - 120^\circ) / 2 = 30^\circ.$$

59. (B) Let the cost of material, labour and overheads be $4x$, $3x$ and $2x$ then its total = $9x$

$$\text{New cost} = 1.1 \times 4x + 1.08 \times 3x + 0.9 \times 2x$$

$$= \frac{236x}{25}$$

$$\text{Increase in price of a car} = x \left(\frac{236}{25} - 9 \right) = ₹ \frac{11x}{25}$$

$$\therefore \text{Req. \% increase} = \frac{11x}{25} \times \frac{100}{9} = \frac{44}{9} = 4 \frac{8}{9} \%$$

60. (A) $\sin \theta : \cos \theta :: a : b \Rightarrow \tan \theta = \frac{a}{b}$

$$\sec \theta = \sqrt{1 + \tan^2 \theta} = \sqrt{1 + \frac{a^2}{b^2}} = \sqrt{\frac{b^2 + a^2}{b^2}} = \frac{\sqrt{a^2 + b^2}}{b}$$

61. (D) $987654321 \times 9 = 8888888889$

(9 times 8 followed by 9)

62. (A) Change the ratio 4 : 3 to 8 : 6

Now we can observe that the sum of the ratios of milk to water in two vessel is equal

\therefore The ratio of milk to water in the new vessel is $(9 + 8) : (5 + 6) = 17 : 11$.

63. (A) 7, 24, 25 is a triplet. It means Δ is right angled triangle.

$$\therefore \text{Required area} = \frac{4}{3} \times \left[\frac{1}{2} \times 7 \times 24 \right]$$

$$= \frac{4}{3} \times 84 = 112 \text{ m}^2$$

64. (A) 1 is not a prime number. 12, 1234 and 123456 are not prime numbers because they are divisible by 2.

Also, 123 is not a prime number because it is divisible by 3 and 12345 is not a prime number because it is divisible by 5.

So there are no prime numbers in the list.

65. (D) Let the distance between Agra and Delhi be x km.

$$\text{Avg. speed of train from Agra} = \frac{x}{4} \text{ km/hr}$$

$$[\because 10 - 6 = 4 \text{ hrs}]$$

$$\text{Avg. speed of train from Delhi} = \frac{2x}{7} \text{ km/hr}$$

$$[11.5 - 8 = 3.5 \text{ hrs}]$$

Suppose they meet at 6 am then,

$$\left(\frac{x}{4} \times y \right) + \left(\frac{2x}{7} (y - 2) \right) = x$$

$$\Rightarrow \frac{y}{4} + \frac{2(y - 2)}{7} = 1 \Rightarrow 7y + 8(y - 2) = 28$$

$$\Rightarrow 15y = 44 \Rightarrow y = \frac{44}{15} \text{ hr} = 2 \text{ hr } 56 \text{ min}$$

So, train will meet at 8 : 56 am.

66. (A) Let the CP of each article be x .
the CP of 16 article = $16x$

$$\text{SP of 15 article} = 135\% \text{ of } 16x = ₹ \frac{108x}{5}$$

$$\text{SP of 1 article} = ₹ \frac{108}{5 \times 15} = ₹ \frac{36x}{25}$$

When SP is 96 then MP = 100

$$\text{When SP is 1 then MP} = \frac{100}{96}$$

$$\text{When SP is } \frac{36x}{25} \text{ then MP} = \frac{100}{96} \times \frac{36}{25} = \frac{3x}{2}$$

$$\text{So, CP} = x \text{ and MP} = \frac{3x}{2}$$

$$\text{then MP : CP} = \frac{3x}{2} : x = 3 : 2$$

67. (D) Required fraction = $\frac{\text{Area of } \Delta PQR}{\text{Area of } \Delta XYZ}$

$$= \frac{\frac{1}{2} \times QR \times PR}{\frac{1}{2} \times YR \times XZ} = \frac{\frac{1}{2} \times 2 \times 3}{\frac{1}{2} \times 3 \times 6} = \frac{3}{9} = \frac{1}{3}$$

68. (A) $450 = 2^1 + 3^2 \times 5^2$

$$\therefore \text{Total no. of factors} = (1 + 1)(2 + 1)(2 + 1) \\ = 2 \times 3 \times 3 \\ = 18$$

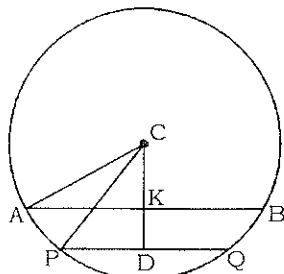
sum of all factors of 400

$$= \frac{(2^{1+1} - 1)(3^{2+1} - 1)(5^{2+1} - 1)}{(2 - 1)(3 - 1)(5 - 1)}$$

$$= \frac{3 \times 26 \times 124}{8} = 3 \times 13 \times 31 = 1209$$

$$\therefore \text{Required difference} = 1209 - 18 \\ = 1191$$

69. (D) The length of two parallel chords of a circle are $PQ = 6$ cm and $AB = 8$ cm



CP and CA are the radius of circle

$$CD = 4 \text{ cm, } PD = DQ = \frac{6}{2} = 3 \text{ cm}$$

$$AK = KB = \frac{8}{2} = 4 \text{ cm}$$

In triangle CPD

$$CP^2 = CD^2 + PD^2$$

$$= 4^2 + 3^2 = 16 + 9 = 25 \Rightarrow CP = 5 \text{ cm}$$

Now in triangle CAK

$$CA^2 = AK^2 + CK^2$$

$$5^2 = 4^2 + CK^2 \Rightarrow 25 = 16 + CK^2$$

$$\Rightarrow CK^2 = 25 - 16 = 9$$

$$\Rightarrow CK = 3 \text{ cm}$$

Hence the distance of the chord AB from the centre is 3 cm.

70. (A) Interest on ₹ 2809 for 1 year
= ₹ 2977.54 - 2809
= ₹ 168.54

$$\text{Rate} = \frac{100 \times 168.54}{2809} = 6\%$$

Let the sum be x

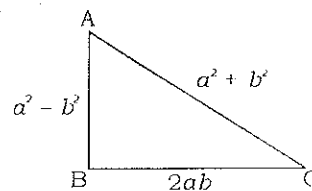
$$\text{ATQ, } x \left(1 + \frac{6}{100}\right)^2 = 2809$$

$$\Rightarrow x = 2809 \times \frac{50}{53} \times \frac{50}{53} = 2500$$

∴ The required sum = 2500

71. (C) If after division by 18 the number has to be increased by 100, then before the division it needs to be increased by $18 \times 100 = 1800$. If 952473 is increased by 1800 it becomes $952473 + 1800 = 954273$. We obtain 954273 from 952473 by swapping the adjacent digits 2 and 4.

72. (C)



Let us try to find the value of given data of RHS on the basis of above given triangle ABC.

$$\begin{aligned} \text{RHS} &= \frac{(a^2 - b^2)^2}{a^2 + b^2} + \frac{(2ab)^2}{a^2 + b^2} \\ &= \frac{a^4 + b^4 - 2a^2b^2 + 4a^2b^2}{a^2 + b^2} \end{aligned}$$

$$\frac{(a^2 + b^2)^2}{(a^2 + b^2)} = a^2 + b^2 = \text{LHS}$$

$$\text{So, } \tan \theta = \frac{a^2 - b^2}{2ab}$$

73. (B) Let the body weight be x kg
Then, weight of protein in skin of a human

$$\text{body} = \left[16\% \text{ of } \left(\frac{1}{10} \text{ of } x \right) \right] = \left(\frac{16}{1000} x \right) \text{ kg}$$

$$\therefore \text{Required \%} = \left[\left(\frac{16x}{1000} \right) \times 100 \right] \% = 1.6\%$$

74. (D) Part of the body made of neither bones

$$\text{nor skin} = 1 - \left(\frac{1}{6} + \frac{1}{10} \right) = \frac{11}{15}$$

75. (C) Percentage of proteins and other dry elements in the body - $(16\% + 14\%) = 30\%$
∴ Central angle corresponding to proteins and other dry elements together
= 30% of 360°
= 108°

MEANINGS IN ALPHABETICAL ORDER

Word	Meaning in English	Meaning in Hindi
Antiseptic	capable of preventing microbial infection	जीवाणुरोधी
Cauterise	To burn tissue	जलाना
Conscious	intentionally conceived	जागरूक
Deviate	to be at variance with; be out of line	अपने रास्ते से अलग होना
Hapless	unable to defend oneself	मजबूर, असहाय
Impersonalize	to give cold treatment	रूखा व्यवहार करना
Impervious	immune to damage or effect	अभेद, मजबूत
Incorrigible	defective and impossible to correct	जिसे सुधारा न जा सके
Inexplicable	incapable of being explained	समझ में न आने योग्य
Melodious	having a pleasant tune, tuneful	मधुर, सुरीला
Mettle	ability to cope well with difficulties	साहस, दिलेरी
Mischief	playful misbehavior or troublemaking	शरारत
Overbearing	arrogantly domineering	अभिमानी, मनमानी करने वाला
Portable	able to be carried or easily moved	चलायमान, ले जाने योग्य
Rancor	bitterness or resentfulness	द्वेष, मनमुटाव
Resort	the act of seeking assistance or advice	मदद, आश्रय
Restraints	control or caution	नियंत्रण
Submissive	obedient or passive	विनम्र, शिष्टाचारी
Vindictive	unreasoning desire for revenge	प्रतिशोधी, हिंसक

SSC Answer Key on 15 June - 18

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



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