

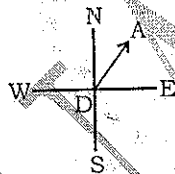
SSC Solution (27 Jan-17)

- (C) As, $(1)^2 = 1$
Similarly, $(125)^2 = 15625$
- (C) People of India are called Indian and People of Holland are called Dutch.
- (D) As, $\frac{462}{21} = 22$

Similarly, $\frac{525}{21} = 25$
- (A) Tajmahal is in Agra and Eiffel Tower is in Paris.
- (D) In others, second number is divisible by first number.
- (A) Other items are prepared from milk.
- (A) In others, the difference of the numbers is divisible by 3.

8. (D) $\frac{4}{24} = \frac{1}{6} = \frac{23}{138} \neq \frac{25}{148}$

9. (C)
- | | | |
|---|---|---|
| | B | A |
| | • | • |
| D | C | |
| • | • | |

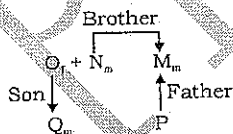


So, A is in North-East of D.

10. (A) Page → Books → Bookshclf → Library
(3) (2) (1) (5)
→ School
(4)

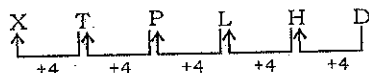
11. (D)
12. (A) The colour of turmeric is 'yellow' and as it is given that 'yellow' is called 'sky'.
So, the colour of turmeric is 'sky'.

13. (A) After drawing the relational diagram, we have,



Clearly, we can say that Q is the cousin of P.

14. (B) The given series is



15. (B) The given series is
 $1^3 - 1 = 0, 2^3 - 1 = 7, 3^3 - 1 = 26, 4^3 - 1 = 63,$
 $5^3 - 1 = 124, 6^3 - 1 = 215$

16. (B)

Top	6	3	5
Opposite	2/6	4	1

Here, digit 4 is opposite to 3.

17. (B) p q q q / p q q q / p q q q
18. (B) $\sqrt{36} - \sqrt{4} + \sqrt{25} = 6 - 2 + 5 = 9$
 $\sqrt{9} - \sqrt{49} + \sqrt{64} = 3 - 7 + 8 = 4$
 $\sqrt{25} - \sqrt{9} + \sqrt{36} = 5 - 3 + 6 = 8$

19. (B) $3 = \sqrt{49 - 40}$
 $4 = \sqrt{64 - 48}$
 $5 = \sqrt{49 - 24}$

20. (D) $(5)^2 + (4)^2 = 41$
 $(6)^2 + (9)^2 = 117$
 $\therefore (2)^2 + (5)^2 = 29$

21. (D) As,
P U N C T A L E
4 7 8 1 9 6 5 3

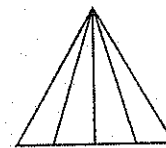
So,
T U N E L P
9 7 8 3 5 4

22. (A)

23. (A)



10 Triangles



10 Triangles

$(4 \times \frac{5}{2}) = 10$

\therefore Required difference = $10 - 10 = 0$

24. (C)

25. (C) I → GRM
II → MAS

From I and II, we have
G → R → M → A → S

So, Sangeeta was last in the race.

26. (B) Jain Doctrine is "established" upon an undying universal truth. It was Rishabh Dev, who first thought to realize the truth and achieve Kaivalya Gyan.

27. (B) According to 93rd Amendment, every child of the age group of 6-14 years shall have right to free and compulsory education. No child is liable to pay any kind of fee/capitation fee/ charges. A collection of capitation fee invites a fine up to 10 times the amount collected.

28. (C) The coal found in India is mainly of non-coking quality and hence coking coal has to be imported. 70% of the steel produced today uses coal. Coking coal is a vital ingredient in the steel making process.
29. (C) FORTRAN (Formula Translation) is one of the earlier High Level programming languages used to write scientific applications. It was developed by IBM in 1956.
30. (C) He was defeated by his nephew, Farrukh Siyar with the help of Sayyid Brothers.
32. (B) G. V Mavalankar (1952-56), Hukum Singh (1962- 67); K.M. Munshi and U.N. Dhebar were never the Speakers of the Lok Sabha.
33. (B) The Gujarat cricket team won their first-ever Ranji Trophy title in the 2016-17 season after defeating Mumbai by 5 wickets, in the final at the Holkar stadium in Indore, Madhya Pradesh. The 2016-17 Ranji Trophy was the 83rd season of the Ranji Trophy, the premier first-class cricket tournament in India.
34. (C) Dolby B and C are the noise reduction circuits developed by Dolby laboratories. Dolby noise reduction has made it possible to protect the music from tape noise, and helped make cassette the most popular audio product ever devised.
35. (D) The Servants of India Society was formed in Pune, Maharashtra, on June 12, 1905 by Gopal Krishna Gokhale. All are related to this organization.
37. (A) The Water (Cess) Act, 1977 related to water and irrigation and not the protection of environment.
38. (B) The committee under the chairmanship of professor Timothy Gonsalves has recently recommended reservation for girl students in IITs to address the issue of slump in the number of female students entering the prestigious institutes. The recommendation of the committee will be taken up in the meeting of the Joint Admission Board (JAB) for a final decision, which will decide whether the reservation will come in effect from 2017 or from 2018. The number of seats for male candidates will not be affected and this will help IITs achieve the one lakh target by 2020. Also, only candidates who have already qualified in JEE-Advance will be considered.
39. (D) For a body in projectile motion
Maximum height
$$= \frac{(\text{Initial velocity})^2 (\sin \text{of launch angle})^2}{2(\text{Acceleration due to gravity})}$$

Maximum height $y_{\text{max}} = \frac{v^2 \sin^2 \theta}{2g}$
Thus, according to above equation greater the initial inclination. The greater is the height reached.
40. (B) Jupiter takes 11.8618 Earth years to complete a single orbit of the Sun. In other words, a single Jovian year lasts the equivalent of 4,332.59 Earth days.
Mercury takes just 87.97 days,
Venus takes just 267 days,
Earth takes just 365.26 days,
Mars takes just 686.98 days,
Saturn takes just 10,755.7 days,
Uranus takes just 30,687.15 days,
Neptune takes just 60,190.03 days.
42. (B) Indirect taxes are the charges that are levied on goods and services. Some of the significant indirect taxes include Value Added Tax, Central Sales Tax, Central Excise Duty, Customs Duty, stamp duties and expenditure tax. Property tax, Corporation tax and Wealth tax are examples of direct taxes.
43. (A) Natarajan Chandrasekaran, the Chief Executive Officer (CEO) and Managing Director (MD) of TCS, has been appointed as the new chairman of Tata Sons. He is the first non-Parsi chairman of Tata Sons and will take charge from Feb 21, 2017. His appointment comes after the Tata sons removed Cyrus Mistry as the Chairman. Chandrasekaran is only the third non-Tata after Nowroji Saklatwala and Cyrus Mistry to be named as Tata Sons' chairman.
44. (B) In a parallel circuit, the voltage across each of the components is the same, and the total current is the sum of the currents through each component. The wiring for most homes is parallel. In parallel circuit each branch receives equal current. If one branch in the circuit is broken, electric current will still flow in other branches.
45. (A) The largest coral reef is the Great Barrier Reef, located just off the north-eastern coast of Australia. The 1200 mile (1900 km) long reef is protected as a Marine Park.

47. (C) This all happened from 1975-78 during fifth five year plan, the period of which is (1974-78).

48. (A) Recently, the Airtel Payments Bank has officially launched its nationwide operations in all 29 states of India. It is the India's first payments bank and is a fully-digital and paper-free bank. In it, the accounts will be opened by using e-KYC for which customers' Aadhar number will be required. The bank is offering a 7.25% interest rate on savings accounts deposits and free personal accidental insurance cover of Rs. 1 Lac on every saving account. One can access the banking services by installing MyAirtel app on their smartphone or by registering online through Airtel site.

50. (B) Mekong - Ganga Cooperation (MGC) was established on November 10, 2000 at Vientiane in the First MGC Ministerial Meeting. It comprises six Member countries namely, India, Thailand, Myanmar, Cambodia, Laos and Vietnam. They emphasised four areas of cooperation, which are tourism, culture, education, and transportation linkage in order to be solid foundation for future trade and investment cooperation in the region.

51. (B) Let speed of the boat = x km/hr
speed of current = y km/hr
Downstream speed = $(x + y)$ km/hr
Upstream speed = $(x - y)$ km/hr

$$\text{Case (i): } \frac{21}{x+y} + \frac{21}{x-y} = 10 \quad \dots (i)$$

$$\text{Case (ii): } \frac{7}{x+y} = \frac{3}{x-y}$$

From Case II we have

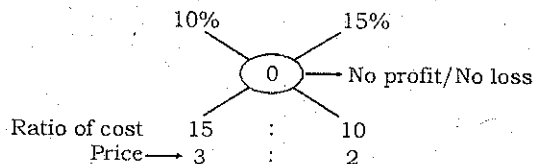
$$\Rightarrow \frac{x+y}{x-y} = \frac{7}{3}, \text{ assume } x+y = 7k,$$

$(x-y) = 3k$, put values in case (i)
then, $k = 1$, $x+y = 7$, $x-y = 3$

$$\text{Speed of the boat} = \frac{7+3}{2} = 5 \text{ km/h}$$

$$\text{Speed of current} = \frac{7-3}{2} = 2 \text{ km/h}$$

52. (A) Loss % = 10%, Profit % = 15%
By allegation Rule,



ATQ,
Let $CP_1 = 300$ units, $CP_2 = 200$ units

$$SP_1 = \frac{300 \times 90}{100} = 270 \text{ units}$$

$$SP_2 = \frac{200 \times 115}{100} = 230 \text{ units}$$

$$\text{Total SP} = 270 + 230 = 500 \text{ units}$$

$$500 \text{ units} = ₹ 12000$$

$$1 \text{ unit} = ₹ 24$$

$$100 \text{ units} = ₹ 24 \times 100 = ₹ 2400$$

$$\text{Difference in cost prices} = ₹ 2400$$

53. (B) Number of passengers after deboarding and boarding at the first station = $240 - 12 + 22 = 250$
Passengers left in the train after the second station

$$= 250 - \frac{1}{5} \times 250 = 200$$

Let x people get down at the third station
ATQ,

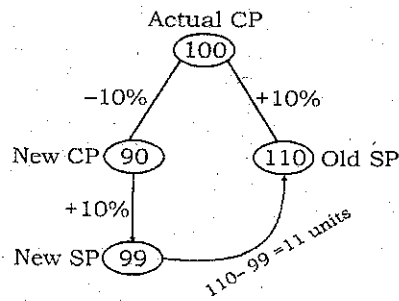
$$\Rightarrow 200 + 32 - x = 240 \times \frac{85}{100}$$

$$\Rightarrow 232 - x = 204$$

$$\Rightarrow x = 28$$

The number of passenger who got down at the third station = 28

54. (C) Let the cost price of the bicycle = 100 units
ATQ,



$$\therefore 11 \text{ units} = 1331$$

$$\therefore 1 \text{ unit} = \frac{1331}{11} = 121$$

$$\text{Actual CP of 100 units} = 121 \times 100 = ₹ 12100$$

55. (B) Cost price of an article A = ₹ 160

$$\text{Selling price of A} = 160 \times \frac{120}{100} = ₹ 192$$

According to the question,
Cost price of B = ₹ 192

$$\text{Selling price of B} = ₹ 288$$

$$\text{Profit} = 288 - 192 = ₹ 96$$

$$\therefore \text{Required Profit percentage} = \frac{96}{192} \times 100 = 50\%$$

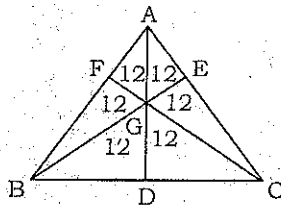
56. (C) Let no. of new pages be P_2
 $30 \times 25 \times 40 = P_2 \times 30 \times 50$

$$P_2 = \frac{1000}{50} = 20$$

$$\Rightarrow P_2 = 20 \text{ pages}$$

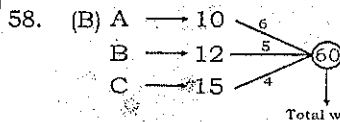
So, Required number of pages
 $= 30 - 20 = 10$

57. (B)



Total area of $\triangle ABC = 72 \text{ cm}^2$

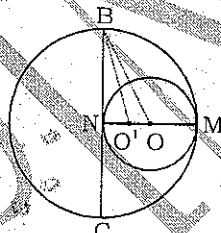
\therefore The area of quadrilateral $BDGF = 12 + 12 = 24 \text{ cm}^2$



As, A leaves after 2 days so remaining work
 $= 60 - 12 = 48$ days
and last three days C work alone
 \therefore Remaining work $= 60 - 12 + 15 = 63$

\therefore Required no. of days $= \frac{63}{9} = 7 \text{ days}$

59. (A) $OM = 4 \text{ cm}$ = radius of smaller circle and
 $O'M = 6 \text{ cm}$ = radius of bigger circle
 $\therefore O'N = 8 - 6 = 2 \text{ cm}$
In $\triangle O'NB$,



$$(O'B)^2 = (O'N)^2 + (BN)^2$$

$$\Rightarrow (BN)^2 = 36 - 4 = 32$$

$$\Rightarrow BN = 4\sqrt{2} \text{ cm}$$

$$\therefore NC = BN = 4\sqrt{2} \text{ cm}$$

$$\therefore BC = 4\sqrt{2} + 4\sqrt{2} = 8\sqrt{2} \text{ cm}$$

60. (B)

$$3 + \frac{1}{\sqrt{3}} + \frac{1}{(3+\sqrt{3})} \times \frac{(3-\sqrt{3})}{(3-\sqrt{3})} - \frac{1}{3-\sqrt{3}} \times \frac{(3+\sqrt{3})}{(3+\sqrt{3})}$$

$$= 3 + \frac{1}{\sqrt{3}} + \frac{1}{6}(3-\sqrt{3}) - \frac{1}{6}(3+\sqrt{3})$$

$$= 3 + \frac{1}{\sqrt{3}} + \frac{1}{2} - \frac{\sqrt{3}}{6} - \frac{1}{2} - \frac{\sqrt{3}}{6}$$

$$= 3 + \frac{1}{\sqrt{3}} - \frac{2\sqrt{3}}{6} = 3 + \frac{1}{\sqrt{3}} - \frac{\sqrt{3}}{3}$$

$$= 3 + \frac{1}{\sqrt{3}} - \frac{1}{\sqrt{3}} = 3$$

61. (C) Since $1 < x < 2$, we have
 $x-1 > 0$ and $x-3 < 0$

$$\Rightarrow 3-x > 0$$

$$\therefore \sqrt{(x-1)^2} + \sqrt{(x-3)^2}$$

$$= \sqrt{(x-1)^2} + \sqrt{(3-x)^2}$$

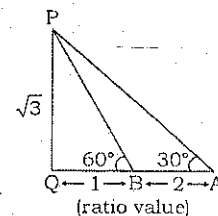
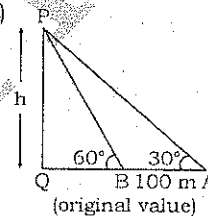
$$= x-1 + 3-x$$

$$= 2$$

62. (D) $\sin 720^\circ - \cot 270^\circ - \sin 150^\circ \cdot \cos 120^\circ$
 $= \sin(2 \times 360^\circ + 0^\circ) - \cot(360^\circ - 90^\circ) - \sin(90^\circ + 60^\circ) \cdot \cos(90^\circ + 30^\circ)$
 $= \sin 0^\circ - \cot 90^\circ + \cos 60^\circ \cdot \sin 30^\circ$

$$= 0 - 0 + \left(\frac{1}{2} \times \frac{1}{2}\right) = \frac{1}{4}$$

63. (C)



Let PQ be the tower of height h metre

Ratio value **Original value**

AB \rightarrow 2 \rightarrow 100

\therefore 1 \rightarrow 50

\therefore $\sqrt{3}$ \rightarrow $50\sqrt{3}$

\therefore Height of the tower = $50\sqrt{3}$ metre.

64. (C) Difference between C.I. & S.I. for 2 years
at 5% rate $= (10.25\% - 10) = 0.25\%$

\therefore Required difference $= 0.25\%$ of ₹ 6000 = ₹ 15

65. (A) Runs in the first match = 180

$$\text{Runs in the second match} = \frac{180}{5} \times 6 = 216$$

$$\text{Runs in the third match} = \frac{216}{4} \times 3 = 162$$

$$\text{Required average} = \frac{180+216+162}{3} = 186$$

66. (A) Required LCM = $2^2 \times 3^3 \times 5^2$

67. (C) 1st candle $\rightarrow 10$ $\left\{ \begin{array}{l} 9 \\ 90 \text{ (Total work)} \end{array} \right.$
2nd candle $\rightarrow 9$ $\left\{ \begin{array}{l} 10 \end{array} \right.$

Let the required time be t hrs
ATQ,

$$\frac{90 - 9t}{90 - 10t} = \frac{1}{2}$$

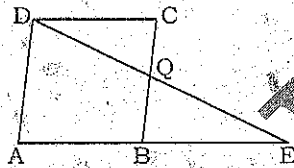
$$\Rightarrow 90 - 10t = 180 - 18t$$

$$\Rightarrow 8t = 90$$

$$\Rightarrow t = \frac{45}{4} = 11\frac{1}{4} \text{ hr}$$

\therefore Required time = $11\frac{1}{4}$ hrs

68. (B) $AD \parallel BC$
 $\Rightarrow AD \parallel BQ$



Point B is the mid-point of AE.

\therefore Q is the mid-point of DE.

In Δ s DQC and BQE ,

$$\angle DQC = \angle BQE$$

$$\angle DCQ = \angle QBE$$

$$\angle CDQ = \angle QBE$$

\therefore Both triangles ΔDQC and ΔBQE are similar.

$$\Rightarrow CQ : QB = 1 : 1$$

69. (A) The value of $n \left(\frac{m^2 - 1}{2} \right) = \frac{1}{2} n(m^2 - 1)$

$$= \frac{1}{2} (\sec\theta + \csc\theta) ((\sin\theta + \cos\theta)^2 - 1)$$

$$= \frac{1}{2} \left(\frac{1}{\cos\theta} + \frac{1}{\sin\theta} \right) (\sin^2\theta + \cos^2\theta + 2\sin\theta\cos\theta - 1)$$

$$= \frac{1}{2} \left(\frac{\sin\theta + \cos\theta}{\cos\theta\sin\theta} \right) (1 + 2\sin\theta\cos\theta - 1)$$

$$= \frac{1}{2} \left(\frac{\sin\theta + \cos\theta}{\cos\theta\sin\theta} \right) (2\sin\theta\cos\theta)$$

$$= (\sin\theta + \cos\theta) = m$$

70. (D) Let the original number of boys and girls be x and y respectively.

Then,

$$\frac{x}{y-15} = \frac{2}{1}$$

$$\Rightarrow x = 2y - 30 \quad \dots(i)$$

Again, $\frac{x-45}{y-15} = \frac{1}{5}$

$$\Rightarrow 5x - 225 = y - 15$$

$$\Rightarrow 5x = y - 15 + 225$$

$$\Rightarrow 5(2y - 30) = y + 210 \quad [\text{From equation (i)}]$$

$$\Rightarrow 10y - 150 = y + 210$$

$$\Rightarrow 10y - y = 210 + 150$$

$$\Rightarrow 9y = 360$$

$$\Rightarrow y = \frac{360}{9} = 40$$

Also, $x = 2y - 30 = 2 \times 40 - 30 = 50$

\therefore Number of boys = 50

71. (D) $\angle OCX = 45^\circ$ (ABCD is a square & AC bisects $\angle BCD$)

$$\angle COD + \angle COX = 180^\circ$$

$$\Rightarrow \angle COX = 180^\circ - \angle COD = 180^\circ - 115^\circ = 65^\circ$$

In ΔOXC

$$\angle OXC + \angle COX + \angle OXC = 180^\circ$$

$$\Rightarrow 45^\circ + 65^\circ + \angle OXC = 180^\circ$$

$$\Rightarrow \angle OXC = 180^\circ - 110^\circ = 70^\circ$$

$$\Rightarrow x = 70^\circ$$

72. (A) Let the number of taps be M_2

$$M_1 D_1 = M_2 D_2$$

$$\Rightarrow 9 \times 20 = M_2 \times 18$$

$$\Rightarrow M_2 = \frac{9 \times 20}{18} = 10 \text{ pipes}$$

73. (B) In 2013 collaboration with A

$$= \frac{64.8}{3600} \times 1200$$

$$= 216$$

In 2016 collaboration with A

$$= \frac{75.6}{3600} \times 1500$$

$$= 315$$

$$\therefore \text{Required difference} = 315 - 216 = 99$$

74. (C) In 2013 = $\frac{50.4}{3600} \times 1200 = 168$

In 2016 = $\frac{43.2}{3600} \times 1500 = 180$

$$\therefore \text{Required Ratio} = 168 : 180 = 14 : 15$$

75. (B) In 2013 = $\frac{54}{360} \times 1200 = 180$

In 2016 = $\frac{46.8}{360} \times 1500 = 195$

\therefore Required change

$$= \frac{15}{180} \times 100$$

$$= 8\frac{1}{3} \% \text{ increase}$$

MEANINGS IN ALPHABETICAL ORDER

Word	Meaning in English	Meaning in Hindi
Contrite	expressing remorse or affected by guilt	दुःखित, मनोव्यथित
Fallacy	a mistaken belief	भ्रम, भ्रान्ति
Fallout	an adverse results of a situation or action	नतीजा
Uncultivated	uncivilised or crude	अशिष्ट, असभ्य
Stout	fat or of heavy build.	मोटा, तगड़ा
Emaciated	very thin	दुर्बल, कमजोर
Shrewd	clever	चालाक
Turbid	embarrassed or annoyed.	चिंतित
Muffled	wrapped or covered for warmth	लपेटा हुआ
Mundane	boring	उबाऊ
Repress	subdue someone or something by force	दमन करना
Explicable	able to be accounted for or understood	समझाने योग्य
Escort	accompany someone for protection or security	अनुरक्षी

See Answer Key (27 Jan 17)

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

