

SSC MOCK TEST - 308 (SOLUTION)

1. (B) As,

$$40 + (4 + 0)^2 = 56$$

Similarly,

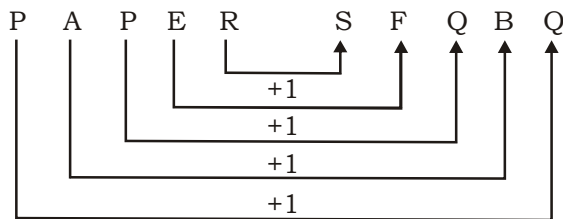
$$28 + (2 + 8)^2 = \mathbf{128}$$

2. (B) Kandla is a famous sea-port in Gujarat, while Cohin is a famous sea-port in Kerala.

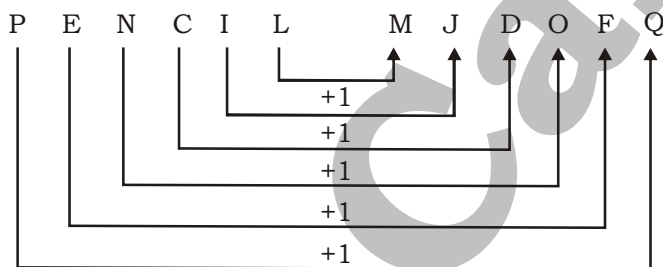
3. (C) Except oil, other are made from milk.

4. (D) Except Nepal, others are middle east countries.

5. (A) As,



Similarly,



6. (C) $7200 \div 2 = 3600$

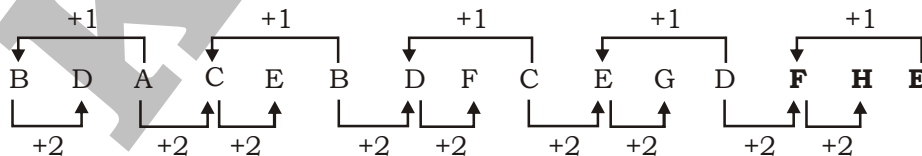
$$3600 \div 3 = 1200$$

$$1200 \div 4 = 300$$

$$300 \div 5 = 60$$

$$60 \div 6 = 10$$

7. (B)



8. (C) On 31st December 2005, it was Saturday.

Number of odd days from the year 2006 to the year 2009 = $(1 + 1 + 2 + 1) = 5$ days

Now on 31st December 2009, it was Thursday.

∴ 1 January 2010 was Friday.

9. (C) As,

$$16 + \left(\frac{16}{2} = 8\right) = 24$$

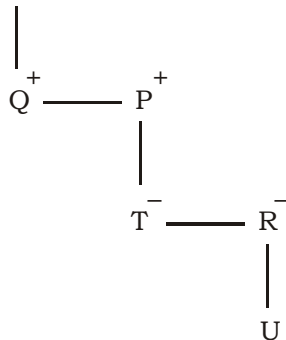
$$24 + \left(\frac{8}{2} = 4\right) = 28$$

Similarly,

$$24 + \left(\frac{24}{2} = 12\right) = 36$$

$$36 + \left(\frac{12}{2} = 6\right) = 42$$

10. (C) V^- — S^-



Hence, R is the grand-daughter of S.

11. (D) acdbcd / acdbcd / acdbcd

12. (B) In first column,

$$9^3 - 4^2 = 713$$

In second column,

$$8^3 - 5^2 = 487$$

In third column,

$$12^3 - 7^2 = \mathbf{1679}$$

13. (A) $84 \div 12 \times 13 + 25 - 4 = 286$

After Changing the 4 and 12 each with other,

$$84 \div 4 \times 13 + 25 - 12 = 286$$

$$21 \times 13 + 25 - 12 = 286$$

$$298 - 12 = 286$$

$$286 = 286$$

14. (C) Let the number be x.

$$\text{Age of Raghav} = (x)^3 = x^3$$

$$\text{Two years ago, age of Raghav} = (x^3 - 2) \text{ years}$$

ATQ,

$$x^3 - 2 = y^2$$

Now let's check each options.

(A) 8 is not the cube of any number.

(B) 62 is not the cube of any number.

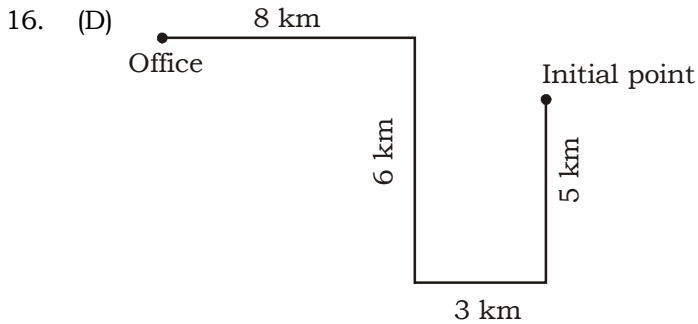
(C) 27 is the cube of 3.

Also, $27 - 2 = 25 = 5^2$

Thus, 27 satisfies the given condition.

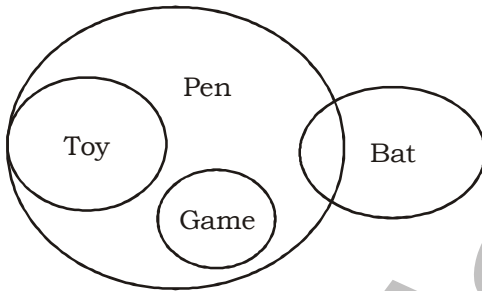
∴ Age of Raghav = 27 years

15. (B) 2. Forehead → 1. Nose → 3. Chin → 5. Chest → 4. Waist



Hence, the office is in the North-West direction with respect to initial point.

17. (A)



I. False II. False III. False

Hence, no conclusion follow.

18. (B) 19. (C) 20. (D)

21. (B) As,

$$\text{RAMAN} \Rightarrow 18 + 1 + 13 + 1 + 14 = 47 \Rightarrow 47 \times 2 + 3 = 97$$

And,

$$\text{PERSON} \Rightarrow 16 + 5 + 18 + 19 + 15 + 14 = 87 \Rightarrow 87 \times 2 + 3 = 177$$

Similarly,

$$\text{FIRST} \Rightarrow 6 + 9 + 18 + 19 + 20 = 72 \Rightarrow 72 \times 2 + 3 = 147$$

22. (B) 23. (A) 24. (C) 25. (B)

27. (A) West Bengal is the largest producer of jute in India.

28. (B) The International Cricket Council (ICC) today announced that PepsiCo Chairman and CEO Indra Nooyi has been appointed to the ICC Board as the organization's first independent female director.

29. (C) Bacillus Calmette-Guérin (BCG) vaccine is a vaccine primarily used against tuberculosis (TB). It is named after its inventors Albert Calmette and Camille Guérin. In countries where TB or leprosy is common, one dose is recommended in healthy babies as soon after birth as possible.

30. (C) The Jaduguda Mine (also spelt as Jadugoda or Jadugora) is a uranium mine in Jaduguda village in the Purbi Singhbhum district of the Indian state of Jharkhand. It commenced operation in 1967 and was the first uranium mine in India. The deposits at this mine were discovered in 1951.

32. (B) The 42nd Amendment also amended Preamble and changed the description of India from "sovereign democratic republic" to a "sovereign, socialist secular democratic republic", and also changed the words "unity of the nation" to "unity and integrity of the nation".
33. (C) Kamakhya Temple is situated on the Nilachal Hill in western part of Guwahati city in Assam, India, it is the main temple in a complex of individual temples dedicated to the ten Mahavidyas of Saktism, namely, Kali, Tara, Tripura Sundari, Bhuvaneshwari, Bhairavi, Chhinnamasta, Dhumavati, Bagalamukhi, Matangi and Kamalatmika.
35. (B) Every year, 25th May is observed as World Thyroid Day to increase awareness about the prevalence of thyroid diseases and to promote new treatment modalities.
37. (A) One of the many vibrant festivals is the annual Tarnetar Mela that takes place in Sundernagar, Gujarat. Tarnetar is basically a tiny village, about 200 km from Ahmedabad.
38. (D) The bureau headquarters at Sèvres, France, serves as a depository for the primary international standards and as a laboratory for certification and comparison of national standard copies.
39. (A) Osteoporosis causes bones to become weak and brittle - so brittle that a fall or even mild stresses such as bending over or coughing can cause a fracture. Osteoporosis-related fractures most commonly occur in the hip, wrist or spine. Bone is living tissue that is constantly being broken down and replaced.
42. (C) 'Jamming' refers to hitting the tennis ball straight to the opponent's body not allowing them to extend the racquet to hit the ball well. Some of the other popular terms associated with lawn tennis are Ace, Back-court, Deuce, Double Fault, etc.
44. (B) In the winter of 618 CE on the banks of river Narmada. Hint: When Pulakeshin II defeated Harsha, he entered into a treaty with him, with a particular river, near the battleground, designated as the border between the Chalukya Empire and the empire of Harshavardhana.
45. (D) Hemophilia A is an X-linked, recessive disorder caused by deficiency of functional plasma clotting factor VIII (FVIII), which may be inherited or arise from spontaneous mutation. The development of inhibitory alloantibodies to FVIII can severely complicate the treatment of genetic cases.
48. (B) Consumer Price Indices (CPI), is used for indexing dearness allowance to government employees for increase in prices in India.
50. (A) Indian Army is all set to take part in 'ZAPAD 2021', a multi-nation military exercise being held at Nizhniy, Russia from 3rd to 16th September 2021.

51. (D) Total interest = ₹ 1344

ATQ,

$$2800 \times 4 \times \frac{x}{100} + 2800 \times 2 \times \frac{x}{100} = ₹ 1344$$

$$112x + 56x = 1344$$

$$168x = 1344$$

$$\therefore x = \frac{1344}{168} = 8\%$$

52. (B) Let the income of B = ₹ x

$$\text{Income of A} = x \times \frac{60}{100} = ₹ \frac{3x}{5}$$

Let the expenditure of B = ₹ y

$$\text{Expenditure of A} = y \times \frac{70}{100} = ₹ \frac{7y}{10}$$

ATQ,

$$\frac{3x}{5} = y \times \frac{90}{100}$$

$$\frac{3x}{5} = \frac{9y}{10}$$

$$\frac{x}{y} = \frac{3}{2}$$

$$\therefore \text{Required ratio} = \left(\frac{3x}{5} - \frac{7y}{10} \right) : (x - y)$$

$$= \left(\frac{3 \times 3}{5} - \frac{7 \times 2}{10} \right) : (3 - 2)$$

$$= \left(\frac{9}{5} - \frac{7}{5} \right) : 1 = \frac{2}{5} : 1 = 2 : 5$$

53. (C) $\frac{\sin^2(90^\circ - A) + \cos^2(90^\circ - A)}{\operatorname{cosec}^2(90^\circ - A)} + \frac{\cot^2(90^\circ - A) - \operatorname{cosec}^2(90^\circ - A)}{\sec^2(90^\circ - A)}$

$$= \frac{\cos^2 A + \sin^2 A}{\sec^2 A} + \frac{\tan^2 A - \sec^2 A}{\operatorname{cosec}^2 A}$$

$$= \frac{1}{\sec^2 A} + \frac{-1}{\operatorname{cosec}^2 A}$$

$$= \cos^2 A - \sin^2 A = \cos 2A$$

54. (B) Part of work done by P in 1 day = $\frac{1}{15}$

Part of work done by Q in 1 day = $\frac{1}{12}$

With the help of R, they can finish the work in 5 days.

Part of work done by P, Q and R together in 1 day = $\frac{1}{5}$

Now, part of the work done by R in 1 day = $\frac{1}{5} - \left(\frac{1}{15} + \frac{1}{12} \right)$

$$= \frac{12 - 4 - 5}{60} = \frac{1}{20}$$

Ratio of efficiency of P, Q and R = $\frac{1}{15} : \frac{1}{12} : \frac{1}{20} = 4 : 5 : 3$

\therefore Share of R = $\frac{3600}{12} \times 3 = ₹ 900$

55. (A) Let the number of boys be $5x$ and number of girls be $4x$.

ATQ,

$$5x + 4x = 45$$

$$9x = 45$$

$$x = \frac{45}{9} = 5$$

$$\text{Number of boys} = 5 \times 5 = 25$$

$$\text{Number of girls} = 5 \times 4 = 20$$

Let the average score of girls be y .

$$\text{So, average score of boys} = y \times \frac{120}{100} = 1.2y$$

ATQ,

$$20 \times y + 25 \times 1.2y = 3600$$

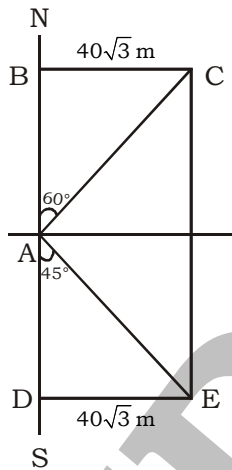
$$20y + 30y = 3600$$

$$50y = 3600$$

$$y = \frac{3600}{50} = 72$$

$$\therefore \text{Average score of boys} = 72 \times 1.2 = 86.4$$

56. (A)



In right $\triangle ABC$,

$$\tan 60^\circ = \frac{BC}{AB}$$

$$\sqrt{3} = \frac{40\sqrt{3}}{AB}$$

$$AB = 40 \text{ m}$$

In right $\triangle ADE$,

$$\tan 45^\circ = \frac{DE}{AD}$$

$$1 = \frac{40\sqrt{3}}{AD}$$

$$AD = 40\sqrt{3}$$

$$\text{Distance travelled by bird} = AB + AD = 40 + 40\sqrt{3}$$

$$= 40(1 + \sqrt{3}) = 109.2 \text{ m}$$

$$\text{Now, Speed} = \frac{\text{Distance}}{\text{Time}} = \frac{109.2}{120} \text{ m/s}$$

$$\frac{109.20}{120} \times \frac{18}{5} = 3.276 \text{ km/hr}$$

57. (B) $\text{Time} = \frac{\text{Distance}}{\text{Speed}}$

Total distance = 61 km

Let the distance travelled on foot = d km

Distance travelled on bicycle = (61 - d) km

Given, speed on foot = 4 km/hr

$$\text{Time taken to travel on foot} = \left(\frac{d}{4}\right) \text{ hours}$$

Speed on bicycle = 9 km/hr

$$\text{Time taken to travel on bicycle} = \frac{(61-d)}{9} \text{ hours}$$

ATQ,

$$\frac{d}{4} + \frac{61-d}{9} = 9$$

$$9d + 244 - 4d = 324$$

$$5d = 80$$

$$\therefore d = 16 \text{ km}$$

58. (A) $x = 3 - 2\sqrt{2}$

$$xy = 1$$

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

$$\text{Now, } x + y = 3 - 2\sqrt{2} + 3 + 2\sqrt{2} = 6$$

$$\frac{x^2 + 3xy + y^2}{x^2 - 3xy + y^2} = \frac{(x+y)^2 + xy}{(x+y)^2 - 5xy}$$

$$= \frac{6^2 + 1}{6^2 - 5 \times 1} = \frac{37}{31}$$

59. (A)
$$\frac{3 \div \{5 - 5 \div (6 - 7) \times 8 + 9\}}{4 + 4 \times 4 \div 4 \text{ of } 4}$$

$$= \frac{3 \div \{5 - 5 \div -1 \times 8 + 9\}}{4 + 4 \times 4 \div 16} = \frac{3 \div \{5 + 5 \times 8 + 9\}}{4 + 1}$$

$$= \frac{3 \div \{5 + 49\}}{5} = \frac{3 \div 54}{5}$$

$$= \frac{3}{54 \times 5} = \frac{1}{90}$$

60. (B) We know that,

$$(a + b + c)^2 = a^2 + b^2 + c^2 + 2(ab + bc + ca)$$

$$8^2 = 66 + 2(ab + bc + ca)$$

$$2(ab + bc + ca) = 64 - 66$$

$$ab + bc + ca = \frac{-2}{2} = -1$$

Now,

$$a^3 + b^3 + c^3 - 3abc = (a + b + c)(a^2 + b^2 + c^2 - ab - bc - ca)$$

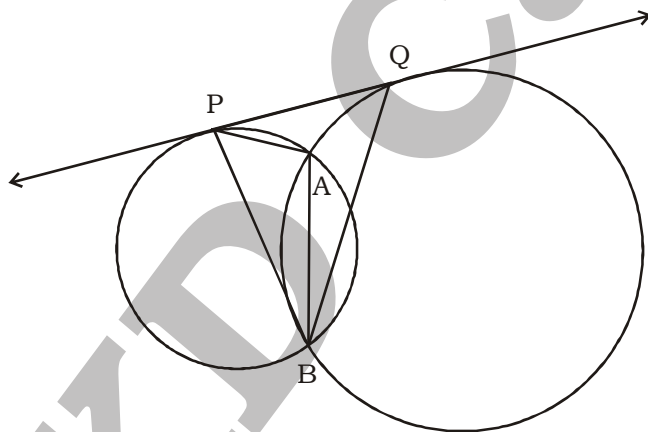
$$563 - 3abc = 8 [66 - (-1)]$$

$$563 - 3abc = 8 \times 67$$

$$3abc = 563 - 536$$

$$\therefore abc = \frac{27}{3} = 9$$

61. (D)



$$\angle APQ = \angle ABP \quad \dots\dots(i) \text{ (Angle in the alternate segment are equal)}$$

$$\angle AQP = \angle ABQ \quad \dots\dots(ii) \text{ (Angle in the alternate segment are equal)}$$

In $\triangle PAQ$,

$$\angle PAQ + \angle APQ + \angle AQP = 180^\circ \quad \text{(Angle sum property of } \Delta)$$

$$\angle PAQ + (\angle ABP + \angle ABQ) = 180^\circ \quad \text{[From (i) and (ii)]}$$

$$\therefore \angle PAQ + \angle PBQ = 180^\circ$$

62. (B) Factors of $54 = 2 \times 3 \times 3 \times 3$
 $87 = 3 \times 29$

The eight digit number $2575d568$ must be divisible by $2 \times 3^3 \times 29$.

Since it is even it is always divisible by 2.

Now, $25750568 + d(1000)$
 $= 25750548 + 20 + d(999 + 1)$
 $= 27(953724) + 20 + d(27 \times 37) + d$

If $2575d568$ is divided by 27, then $20 + d$ must also be divided by 27.

Therefore,

$d = 7$

Now,

$$\frac{25757568}{54} = 476992$$

$\therefore d = 7$

63. (B) Radius = $\frac{12}{2} = 6$ cm

Volume of cone = $\frac{1}{3}\pi r^2 h = 660$ cm²

$h = \frac{660 \times 3 \times 7}{22 \times 6 \times 6} = 17.5$ cm

Radius = $\frac{12}{2} = 6$ cm

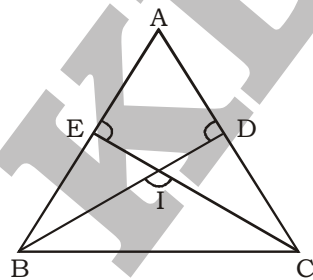
Slant height = $\sqrt{h^2 + r^2} = \sqrt{17.5^2 + 6^2}$

$l = \frac{37}{2} = 18.5$ cm

\therefore Total surface area of cone = $\pi r(r + l) = \frac{22}{7} \times 6(6 + 18.5)$

$= \frac{22}{7} \times 6 \times 24.5 = 462$ cm²

64. (C)



$BD \perp AC$

Hence, $\angle BDA = 90^\circ$

$CE \perp AB$

Hence, $\angle CEA = 90^\circ$

In quadrilateral AEID,

$$\angle A + \angle AEI + \angle EID + \angle IDA = 360^\circ$$

$$\angle A + 90^\circ + \angle EID + 90^\circ = 360^\circ$$

$$\angle A + \angle EID = 180^\circ$$

$$\angle EID = \angle BIC \quad (\text{Vertically opposite angles})$$

$$\angle A + \angle BIC = 180^\circ$$

$$\therefore \angle BIC = 180^\circ - \angle A$$

65. (C) Let the average of 100 numbers be 36.

$$75\% \text{ of } 100 = 75$$

If we assume that the all the numbers are 36, then

ATQ,

75% of Number is increased by 6

$$\text{New number} = 36 + 6 = 42$$

Also given that,

25% numbers are decreased by 9

$$36 - 9 = 27$$

$$\begin{aligned} \therefore \text{New average} &= \frac{(42 \times 75) + (27 \times 25)}{100} = \frac{3150 + 675}{100} \\ &= \frac{3825}{100} = 38.25 \end{aligned}$$

66. (B) Total runs scored in 42 overs = $42 \times 4.5 = 189$ runs

$$\therefore \text{Required run rate per over} = \frac{325 - 189}{8} = \frac{136}{8} = 17$$

67. (C) Let the cost price of an article be ₹ 100.

$$\text{Selling price of an article} = 100 \times \frac{140}{100} = ₹ 140$$

$$\text{New cost price of an article} = 100 \times \frac{60}{100} = ₹ 60$$

$$\text{New selling price of an article} = 60 \times \frac{140}{100} = ₹ 84$$

ATQ,

$$(140 - 84) \rightarrow 750.40$$

$$100 \rightarrow \frac{750.40}{56} \times 100 = ₹ 1340$$

$$\therefore \text{Cost price of an article} = ₹ 1340$$

68. (B) P = ₹ 12500

$$T = \frac{11}{2} \text{ years}$$

Compounded half yearly,

$$T = 11 \text{ years}$$

$$A = 13,000$$

$$SI = 13000 - 12500 = ₹ 500$$

$$SI = \frac{PRT}{100}$$

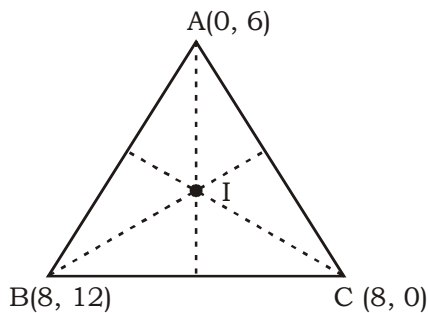
$$500 = \frac{12500 \times R \times 11}{100}$$

$$R = \frac{500 \times 1}{125 \times 11} = \frac{4}{11} \%$$

For first half year,

$$\therefore R = \frac{2 \times 4}{11} = \frac{8}{11} \%$$

69. (D)



$$a = BC = \sqrt{0^2 + (12 - 0)^2} = 12$$

$$b = AC = \sqrt{(0 - 8)^2 + (6 - 0)^2} = 10$$

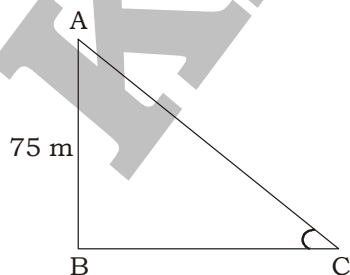
$$c = AB = \sqrt{8^2 + 6^2} = 10$$

$$\therefore \text{Incentre of triangle ABC} = \left(\frac{ax_1 + bx_2 + cx_3}{a + b + c}, \frac{ay_1 + by_2 + cy_3}{a + b + c} \right)$$

$$= \left(\frac{12 \times 0 + 10 \times 8 + 10 \times 8}{12 + 10 + 10}, \frac{12 \times 6 + 10 \times 12 + 10 \times 0}{12 + 10 + 10} \right)$$

$$= \left(\frac{160}{32}, \frac{192}{32} \right) = (5, 6)$$

70. (D)



Height of kite from ground = AB = 75 m

$$\angle ACB = \theta$$

We know that,

$$\cot \theta = \frac{8}{15}$$

$$\frac{BC}{AB} = \frac{8}{15}$$

$$BC = \frac{8 \times 75}{15} = 40 \text{ m}$$

Now, length of string AC = $\sqrt{(AB)^2 + (BC)^2}$

$$AC = \sqrt{75^2 + 40^2} = \sqrt{5625 + 1600}$$

$$= \sqrt{7225} = 85 \text{ m}$$

71. (B) Required difference = $\frac{1}{6} \times (14 + 18 + 23 + 21 + 27 + 26) - 15$
 = (21.5 - 15) thousands = 6.5 thousand
72. (D) Required ratio = 18 : 15 : 9 = 6 : 5 : 3
73. (B) From graph, the required year is 2000
74. (C) Required percentage = $\left(\frac{29}{35} \times 100\right)\% \approx 83\%$
75. (A) Required percentage increase = $\left(\frac{27-18}{18} \times 100\right)\% = 50\%$

MEANINGS IN ALPHABETICAL ORDER

Ambiguous	(of language) open to more than one interpretation; having a double meaning	अस्पष्ट
Climax	the most intense, exciting, or important point of something; a culmination or apex	उत्कर्ष
Conquest	the subjugation and assumption of control of a place or people by use of military force	जीत
Contraption	a machine or device that appears strange or unnecessarily complicated, and often badly made or unsafe	कामचलारु उपाय
Creek	a member of a confederacy of North American peoples of the southeastern US in the 16 th to 19 th centuries; their descendants now live mainly in Oklahoma	खाड़ी
Culmination	the highest or climactic point of something, especially as attained after a long time	परिणति
Decisive	settling an issue; producing a definite result	निर्णयक
Epilogue	a section or speech at the end of a book or play that serves as a comment on or a conclusion to what has happened	उपसंहार
Prologue	a separate introductory section of a literary or musical work	प्रस्ताव
Reeked	smell strongly and unpleasantly; stink	धूआं देना
Rivulet	a very small stream	छोटी नदी
Thesaurus	a book that lists words in groups of synonyms and related concepts	कोश
Torrent	strong and fast-moving stream of water or other liquid	धार
Trickle	(of a liquid) flow in a small stream	मिलना
Triumph	a great victory or achievement	विजयोल्लास
Undeniable	unable to be denied or disputed	निर्विवाद

SSC MOCK TEST - 308 (ANSWER KEY)

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

76. (D) "in" – for months, years, centuries and long periods. "On" for days and dates (example – "in 1947", 'in August', "on monday", "on 12th May, 2000')
77. (A) "not only.....but also" – both the parts should be followed by same part of speech. Here the doer is – we and the action is – saw. The correct form should be – we saw not only the president (noun) + but also the chief minister (noun).....
90. (D) The correct spelling is 'Manageable'.
91. (D) The correct spelling of 'Contrapsion' is 'Contraption', 'Cunstruction' is 'Construction' and 'Controdiction' is 'Contradiction'.