

**SSC MOCK TEST - 305 (SOLUTION)**

1. (B) As,

$$78 \Rightarrow (7 + 8)^3 - (7 + 8)^2 = 3150$$

Similarly,

$$52 \Rightarrow (5 + 2)^3 - (5 + 2)^2 = 294$$

2. (A) Waiter is related to serve, while mechanic is related to Repair.

3. (D) Except 1991, others are divisible by 3.

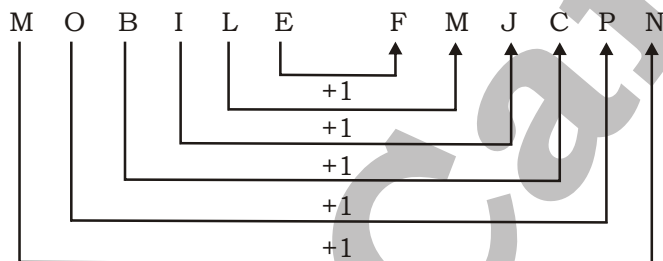
4. (D) (A) B D F  
(2) (4)  $\Rightarrow 2 + 6 = (6)$

(B) L M Y  
(12) (13)  $\Rightarrow 12 + 13 = (25)$

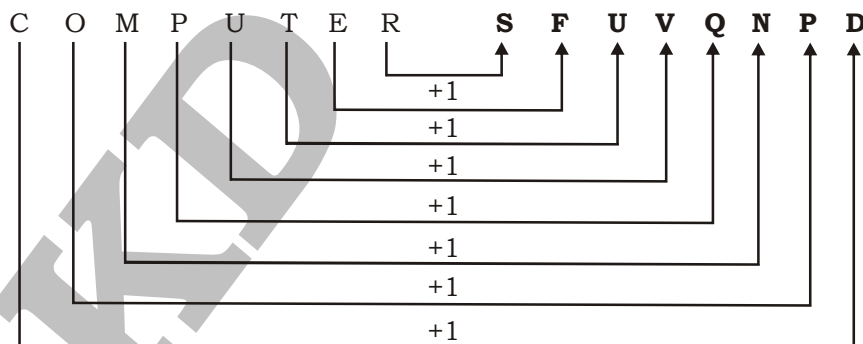
(C) I J S  
(9) (10)  $\Rightarrow 9 + 10 = (19)$

(D) G K M  
(7) (11)  $\Rightarrow 7 + 11 \neq (13)$

5. (B) As,



Similarly,



6. (C)  $2^2 - 1 = 3$

$$3^2 - 2 = 7$$

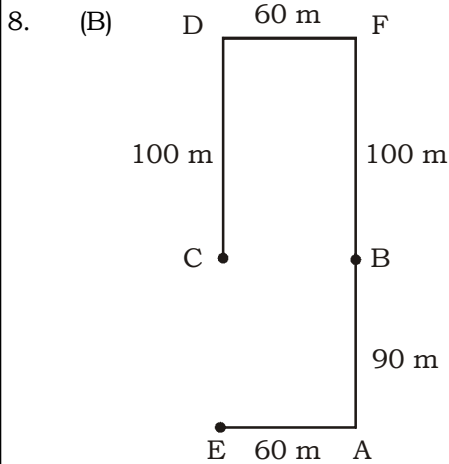
$$4^2 - 3 = 13$$

$$5^2 - 4 = 21$$

$$6^2 - 5 = 31$$

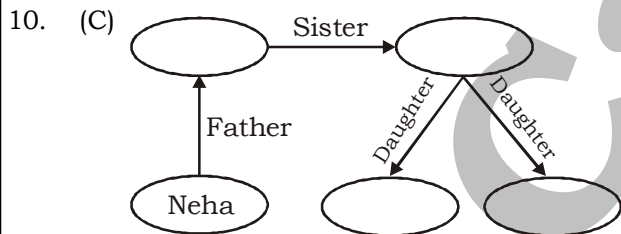
$$7^2 - 6 = 43$$

7. (A) A B D H I L Q R V B C H O P V  
 $\begin{array}{cccccccccccccccc} | & | & | & | & | & | & | & | & | & | & | & | & | & | & | \\ \hline & \uparrow & \uparrow & \uparrow & \uparrow & \uparrow & \uparrow & \uparrow & \uparrow & \uparrow & \uparrow & \uparrow & \uparrow & \uparrow & \uparrow \\ & +1 & +2 & +4 & +1 & +3 & +5 & +1 & +4 & +6 & +1 & +5 & +7 & +1 & +6 \end{array}$



C's house is in the North of E's house at a distance of 90 m.

9. (A) As,  
 $(13 + 12 + 18) = 43$   
 Similarly,  
 $(10 + 15 + 18) = 43$



Hence, Neha is the cousin of that girls.

11. (B) db**a**cbd/**d**bacbd/**d**bachd  
 12. (C) **In first column,**  
 $(13 + 12) + (13 + 12)^2 = 650$   
**In second column,**  
 $(15 + 16) + (15 + 16)^2 = 992$   
**In third column,**  
 $(8 + 9) + (8 + 9)^2 = 306$   
 13. (D)  $32 + 4 - 6 \times 8 \div 5 = -35$   
 After Changing the signs,  
 $32 \div 4 - 6 \times 8 + 5 = -35$   
 $8 - 6 \times 8 + 5 = -35$   
 $8 - 48 + 5 = -35$   
 $13 - 48 = -35$   
 $- 35 = - 35$

14. (A) Time from 8 AM on a day to 1 PM on the following day = 29 hours  
24 hours 10 minute of this clock = 24 hours of the correct clock

$$\frac{145}{6} \text{ hours of this clock} = 24 \text{ hours of the correct clock.}$$

29 hours of this clock =  $24 \times \frac{6}{145} \times 29$  hours of the correct clock = 28 hours 48 minute of the correct clock.

Therefore, the correct time is 28 hours 48 minute after 8 AM.

Required time is 48 minute past 12.

15. (B) 3. Shoulder → 4. Elbow → 1. Wrist → 5. Palm → 6. Finger → 2. Nails

16. (B) Let the present age of son be x years.

Father's age = 2x years

ATQ,

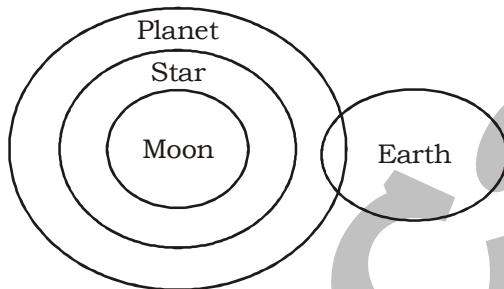
$$(x - 10) \times 3 = 2x - 10$$

$$3x - 30 = 2x - 10$$

$$x = 20 \text{ years}$$

∴ Present age of son = 20 years

17. (C)



I. False

II. False

III. True

Hence, only conclusion III follows.

18. (C)

19. (A)

20. (B) From statement I, II and III,

$$C < U > B < D$$

Hence, B is shorter than U and D.

21. (C) Opposite faces of given cubes:

$$\% \rightarrow \#$$

$$@ \rightarrow +$$

$$\& \rightarrow *$$

22. (B)

23. (A)

24. (A)

25. (A)

26. (D) Jagjivan Ram, who was India's defence minister during the 1971 war, was instrumental in the creation of the 'Joint Command' of Bangladesh and Indian Forces for the final assault which led to victory.

27. (D) Pancreas makes about 8 ounces of digestive juice filled with enzymes. These are the different enzymes: Lipase. This enzyme works together with bile, which your liver produces, to break down fat in your diet.

30. (C) Adventure sports enthusiast Ajeet Bajaj on Wednesday became the first Indian to ski to the North Pole.
31. (A) The Nilgiris-Eastern Ghats reserves which includes Nagarahole spread across Karnataka, Kerala and Tamil Nadu is known as "Asia's elephant empire", with about 10,000 elephants. India is home to the largest number of Asiatic Elephants.
32. (C) Gluteus maximus is the largest muscle in the human body. It is large and powerful because it has the job of keeping the trunk of the body in an erect posture. It is the chief antigravity muscle that aids in walking up stairs.
33. (C) According to the India State of Forest Report, 2011, released by the Forest Survey of India (FSI) on February 7, the total forest cover in the country is now at 6,92,027 sq km. This accounts for 21.05 per cent of the total geographical area of India.
34. (B) 'High Gate', or the "Door of victory", was built in 1575 A.D. by Mughal emperor Akbar to commemorate his victory over Gujarat. It is the main entrance to the Jama Masjid at Fatehpur Sikri, which is 43 km from Agra, India. Buland Darwaza is the highest gateway in the world and is an example of Mughal architecture.
36. (D) NASA partnership with the Indian Space Research Organisation (ISRO) NISAR is a joint Earth-observing mission between NASA and the Indian Space Research Organization (ISRO) with the goal to make global measurements of the causes and consequences of land surface changes using advanced radar imaging.
37. (A) Seismology is the study of earthquakes and the structure of the earth, by both naturally and artificially generated seismic waves.
39. (C) The Pushkar Fair, also called the Pushkar Camel Fair or locally as Kartik Mela or Pushkar ka Mela is an annual multi-day livestock fair and cultural fete held in the town of Pushkar. It is famous for its camel trading event.
40. (C) Vijaya Vittala Temple is the Prominent attractions of Hampi, Vittala Temple Complex is the most extravagant architectural showpiece of Hampi.
43. (B) Fathimath Dhiyana Saeed is a Maldivian diplomat, and was the Secretary-General of the South Asian Association for Regional Cooperation (SAARC). She was the first woman to hold this post since the organization's inception in 1985.
46. (B) Beriberi is a disease caused by a vitamin B-1 deficiency, also known as thiamine deficiency. There are two types of the disease: wet beriberi and dry beriberi. Wet beriberi affects the heart and circulatory system.
47. (B) Nichrome is used to make the coils used in water heaters. It is an alloy of chromium and nickel present in proportions of 80% and 20% respectively. It is extensively used, as nichrome has high resistance and good heat emitting properties.
50. (D) India is ranked 122nd on a new Global Youth Development Index measuring the condition of young people across 181 countries, released by the Commonwealth Secretariat in London on Tuesday.

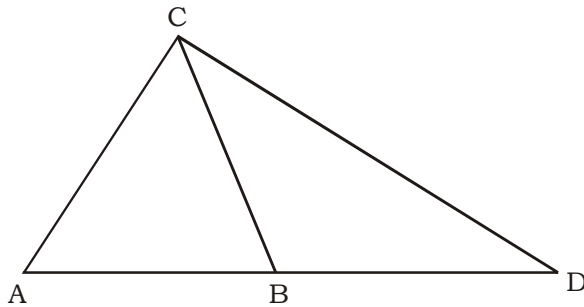
51. (A) 
$$\frac{1 + \frac{1}{7 \frac{3}{5}}}{2 + \frac{1}{3 + \frac{1}{1 + \frac{1}{4}}}} \div 0.5 = \frac{1 + \frac{5}{38}}{2 + \frac{1}{3 + \frac{4}{5}}} \div 0.5$$

$$= \frac{\frac{43}{38}}{2 + \frac{5}{19}} \div 0.5 = \frac{\frac{43}{38}}{\frac{43}{19}} \div 0.5$$

$$= \frac{1}{2} \div 0.5 = \frac{1}{2} \times \frac{1}{0.5} = 1$$

52. (C)  $4^{11} + 4^{12} + 4^{13} + 4^{14}$   
 $= 4^{11}(4^0 + 4^1 + 4^2 + 4^3)$   
 $= 4^{11}(1 + 4 + 16 + 64)$   
 $= 4^{11} \times 85$   
 It is divisible by 5.

53. (D)



In  $\triangle ABC$ , AB is extended to D such that  $BC = BD$ .

Thus,  $\angle BCD = \angle CDB$

Given,  $\angle ABC = 140^\circ$

$\angle ABC = \angle BCD + \angle BDC$  (exterior angle is equal to the sum of their opposite interior angles)

$$\angle BCD + \angle BDC = 140^\circ$$

$$\angle BCD = \angle BDC = \frac{140}{2} = 70^\circ \quad (\because \angle BCD = \angle BDC)$$

Now,  $\triangle ACD$  becomes a right angled  $\triangle$ .

Thus,  $\angle ACD = 90^\circ$

$$\angle ACB + \angle BCD = 90^\circ$$

$$\angle ACB + 70^\circ = 90^\circ$$

$$\angle ACB = 90^\circ - 70^\circ = 20^\circ$$

In  $\triangle ABC$ ,

$$\angle A + \angle ABC + \angle ACB = 180^\circ$$

(Sum of all the angles in triangle is  $180^\circ$ )

$$\angle A + 140^\circ + 20^\circ = 180^\circ$$

$$\angle A = 180^\circ - 160^\circ = 20^\circ$$

54. (C) Upstream speed = 22 km/hr  
 Downstream speed = 36 km/hr

$$\therefore \text{Average speed} = \frac{2ab}{a+b}$$

$$= \frac{2 \times 22 \times 36}{22 + 36} = \frac{44 \times 36}{58}$$

$$= 27 \frac{9}{29} \text{ km/hr}$$

55. (D) CP of an article = ₹ 2500

$$\text{SP of an article} = 2500 \times \frac{125}{100} = ₹ 3125$$

$$\text{Net profit} = (3125 - 2500 - 175) = ₹ 450$$

$$\therefore \text{Profit\%} = \left( \frac{450}{2500} \times 100 \right) \% = 18\%$$

56. (B) Let the number of students in section B = x

$$\text{Number of students in section A} = x \times \frac{125}{100} = 1.25x$$

ATQ,

$$x + 1.25x = 135$$

$$2.25x = 135$$

$$x = \frac{135}{2.25} = 60$$

Number of students in section B = 60

Number of students in section A = 60 × 1.25 = 75

Let the average score of section A be y.

$$\text{Average score of section B} = y \times \frac{120}{100} = 1.2y$$

ATQ,

$$75 \times y + 60 \times 1.2y = 135 \times 98$$

$$75y + 72y = 135 \times 98$$

$$147y = 135 \times 98$$

$$y = \frac{135 \times 98}{147} = 90$$

$\therefore$  Average score of students in section A = 90

57. (A)  $\sin\theta + \cos\theta = \frac{9}{8}$

Squaring both sides,

$$\sin^2\theta + \cos^2\theta + 2\sin\theta.\cos\theta = \frac{81}{64}$$

$$1 + 2\sin\theta.\cos\theta = \frac{81}{64}$$

$$2\sin\theta.\cos\theta = \frac{81}{64} - 1$$

$$2\sin\theta.\cos\theta = \frac{17}{64}$$

$$\therefore \sin\theta.\cos\theta = \frac{17}{64 \times 2} = \frac{17}{128}$$

58. (A) Let his capital be ₹ x.

ATQ,

$$\frac{x}{3} \times 7 + \frac{x}{4} \times 8 + \frac{5x}{12} \times 10 = 1122$$

$$\frac{7x}{300} + \frac{8x}{400} + \frac{5x}{120} = 1122$$

$$\frac{28x + 24x + 50x}{1200} = 1122$$

$$\frac{102x}{1200} = 1122$$

$$\therefore x = \frac{1122 \times 1200}{102} = ₹ 13200$$

59. (D) 20% of A = 25% of B = 15% of C

$$A : B : C = \frac{1}{20} : \frac{1}{25} : \frac{1}{15} = 15 : 12 : 20$$

$$\therefore \text{Required difference} = \frac{164500}{47} \times 3 = ₹ 10500$$

60. (C) Let the number be 16a and 16b.

ATQ,

$$16a \times 16b = 16 \times 1232$$

$$ab = 77$$

Then possible pairs of a and b are (1 × 77) and (7 × 11)

But since both are three digits number.

$$\text{So, first number} = 7 \times 16 = 112$$

$$\text{Second number} = 11 \times 16 = 176$$

$$\therefore \text{Required sum} = 112 + 176 = 288$$

61. (C)  $\alpha + \beta = 1$  and  $\alpha\beta = 1$

$$\alpha^2 + \beta^2 = (\alpha + \beta)^2 - 2\alpha\beta$$

$$\alpha^2 + \beta^2 = 1 - 2 = -1$$

$$\text{Roots of new equation} = \alpha^3\beta \text{ and } \beta^3\alpha$$

$$\text{Sum of roots} = \alpha^3\beta + \beta^3\alpha = \alpha\beta (\alpha^2 + \beta^2) = 1 \times -1 = -1$$

$$\text{Product of roots} = \alpha^4 \beta^4 = 1$$

$$\therefore \text{Equation} = x^2 - (\text{Sum of roots})x + \text{product of roots} = 0$$

$$= x^2 - (-1)x + 1 = 0$$

$$= x^2 + x + 1 = 0$$

62. (B) Area of circle =  $\pi r^2$

$$\pi r^2 = 5544$$

$$r^2 = \frac{5544}{22} \times 7$$

$$r^2 = 1764$$

$$r = 42 \text{ cm}$$

$$\text{Perimeter of circle} = 2\pi r$$

$$= 2 \times \frac{22}{7} \times 42 = 264 \text{ cm}$$

$$\text{Perimeter of rectangle} = \frac{264}{2} = 132 \text{ cm}$$

$$2(l + b) = 132$$

$$50 + b = 66$$

$$b = 66 - 50 = 16 \text{ cm}$$

$$\therefore \text{Area of rectangle} = 50 \times 16 = 800 \text{ cm}^2$$

63. (A) Let the investment of C is x months.

$$\begin{aligned} \text{Ratio of annual investment of A, B and C} &= 25000 \times 12 : 30000 \times 12 : 40000 \times x \\ &= 300 : 360 : 40x = 15 : 18 : 2x \end{aligned}$$

$$\text{Share of C in the annual profit} = \frac{x}{33 + 2x} \times 260000 = 20000$$

$$\frac{x}{33 + 2x} = \frac{1}{13}$$

$$13x = 33 + 2x$$

$$11x = 33$$

$$x = 3$$

$$\therefore \text{Required month} = 3 \text{ months}$$

64. (B) Let the present age of A be x years and present age of B be y years.

2 years ago,

$$\text{Age of A} = (x - 2) \text{ years}$$

$$\text{Age of B} = (y - 2) \text{ years}$$

ATQ,

$$(x - 2) = 2(y - 2)$$

$$x - 2 = 2y - 4$$

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

6 years hence,

$$\text{Age of A} = (x + 6) \text{ years}$$

$$\text{Age of B} = (y + 6) \text{ years}$$



ATQ,

$$x + 6 + y + 6 = 67$$

$$x + y = 67 - 12$$

$$x + y = 55$$

$$2y - 2 + y = 55 \quad [\text{From (i)}]$$

$$3y = 57$$

$$y = \frac{57}{3} = 19 \text{ years}$$

Put the value of y in equation (i),

$$x = 2 \times 19 - 2 = 36 \text{ years}$$

∴ Age of A = 36 years

65. (A)

	Total work	
P → 12	36	3
Q → 18		2

(P + Q)'s one day work = 3 + 2 = 5 unit

(P + Q)'s 6 day work is 5 × 6 = 30 unit

Work left = 36 - 30 = 6 unit

$$\therefore \text{Fraction of work left} = \frac{\text{Work left}}{\text{Total work}} = \frac{6}{36} = \frac{1}{6}$$

66. (C) Let the salary of Mohan be ₹ 100.

He spends 10% of the salary on food

Amount spend on food is 10% of 100 = ₹ 10

He spends 20% of remaining amount on transportation and insurance

Amount spend on transportation is 20% of 90 = ₹ 18

He spends 5% of remaining amount on insurance

Amount spend on insurance is 5% of 72 = ₹ 3.6

He spends 25% of remaining amount on medicine and education

Amount spend on medicine and education is 25% of 68.4 = ₹ 17.1

The amount he is left with to save = 100 (10 + 18 + 3.6 + 17.1) = ₹ 51.3

$$\text{Now, the percentage of amount saved} = \left( \frac{51.3}{100} \times 100 \right) \% = 51.3\%$$

67. (A)  $\frac{2 \sin \theta - \cos \theta}{\cos \theta + \sin \theta} = 1$

Dividing numerator and denominator by  $\sin \theta$ ,

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

$$\frac{2 - \cot \theta}{\cot \theta + 1} = 1$$

$$2 - \cot \theta = \cot \theta + 1$$

$$2 \cot \theta = 1$$

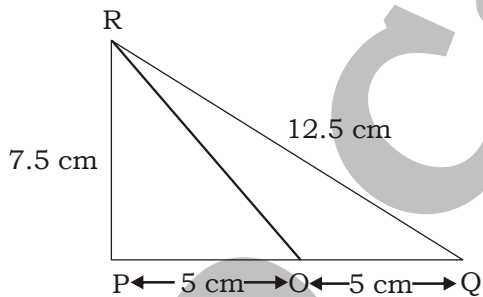
$$\cot \theta = \frac{1}{2}$$

68. (D)  $\left(x + \frac{1}{x}\right)\left(x - \frac{1}{x}\right)\left(x^2 + \frac{1}{x^2} - 1\right)\left(x^2 + \frac{1}{x^2} + 1\right)$

$$= \left(x^2 - \frac{1}{x^2}\right)\left[\left(x^2 + \frac{1}{x^2}\right)^2 - 1\right]$$

$$= \left(x^2 - \frac{1}{x^2}\right)\left(x^4 + \frac{1}{x^4} + 1\right) = x^6 - \frac{1}{x^6}$$

69. (C)



In  $\triangle PQR$ ,

$$(PR)^2 + (PQ)^2 = (QR)^2$$

$$(PQ)^2 = (QR)^2 - (PR)^2$$

$$(12.5)^2 - (7.5)^2$$

$$156.25 - 56.25 = 100$$

$$PQ = 10 \text{ cm}$$

In  $\triangle RPO$ ,

$$(RP)^2 + (PO)^2 = (RO)^2$$

$$(7.5)^2 + (5)^2 = (RO)^2$$

$$(RO)^2 = 81.25$$

$$\therefore RO = \frac{5\sqrt{13}}{2} \text{ cm}$$

70. (C) Let the length of each train be  $x$  m.

$$\text{Speed of first train} = \frac{x}{6} \text{ m/s}$$

$$\text{Speed of second train} = \frac{x}{8} \text{ m/s}$$

$$\text{Now, Relative speed} = \frac{x}{6} + \frac{x}{8} = \frac{4x + 3x}{24} = \frac{7x}{24} \text{ m/s}$$

$$\therefore \text{Required time to pass each other} = \frac{x + x}{\frac{7x}{24}} = \frac{2x \times 24}{7x} = \frac{48}{7} \text{ seconds}$$

71. (C) Total CP of product A =  $900 + 300 = ₹1,200$

$$\therefore \text{SP} = 1200 \times \frac{105}{100} = ₹1260$$

72. (B) SP of product C =  $2000 + 500 + 250 = ₹2750$

$$\text{CP of product B} = 800 + 300 = ₹1100$$

$$\therefore \text{Required \%} = \left( \frac{2750}{1100} \times 100 \right) \% = 250\%$$

73. (B) Loss on product D =  $₹ \left( \frac{5000}{95} \times 5 \right)$

$$\text{Loss on product B} = ₹300$$

$$\therefore \text{Required ratio} = \frac{5000 \times 5}{95} : 300 = 50 : 57$$

74. (B) Total CP of product E =  $6000 + 400 = ₹6400$

$$\text{SP of product E} = 6400 \times \frac{107}{100} = ₹6848$$

$$\text{SP of product C} = 2000 + 500 + 250 = ₹2750$$

$$\therefore \text{Required difference} = 6848 - 2750 = ₹4098$$

75. (D) Total CP of product A =  $900 + 300 = ₹1200$

$$\text{SP of product A} = 1200 \times \frac{90}{100} = ₹1080$$

$$\text{Total CP of product E} = 6000 + 400 = ₹6400$$

$$\text{SP of product E} = 6400 \times \frac{107}{100} = ₹6848$$

$$\therefore \text{Required less\%} = \left[ \frac{6848 - 1080}{6848} \times 100 \right] \% = 84.22\% \approx 84\%$$

**MEANINGS IN ALPHABETICAL ORDER**

Amicable	(of relations between people) having a spirit of friendliness; without serious disagreement or rancor	मैत्रीपूर्ण
Botanist	an expert in or student of the scientific study of plants	वनस्पति विज्ञानिक
Climax	the most intense, exciting, or important point of something; a culmination or apex	उत्कर्ष
Controversy	disagreement, typically when prolonged, public, and heated	विवाद
Culmination	the highest or climactic point of something, especially as attained after a long time	परिणति
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
Florist	a person who sells and arranges plants and cut flowers	फूलवाला
Gaunt	(of a person) lean and haggard, especially because of suffering, hunger, or age	कृष
Lean	be in or move into a sloping position	दुबला
Lethal	sufficient to cause death	जानलेवा
Nutritionist	a person who studies or is an expert in nutrition	पोषण
Plump	having a full rounded shape	मोटा
Prologue	a separate introductory section of a literary or musical work	प्रस्ताव
Reeked	smell strongly and unpleasantly; stink	धूआं देना
Thesaurus	a book that lists words in groups of synonyms and related concepts	कोष
Trace	find or discover by investigation	निशान
Virulent	(of a disease or poison) extremely severe or harmful in its effects	विषैला

**SSC MOCK TEST - 305 (ANSWER KEY)**

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

76. (C) Replace 'were' with 'was' in the part (C)
77. (C) In the part (C) remove definite article 'the'.
90. (D) The correct spelling is 'Manageable'.
91. (D) The correct spelling of 'Contrapsion' is 'Contraption', 'Cunstruction' is 'Construction' and 'Controdition' is 'Contradiction'.