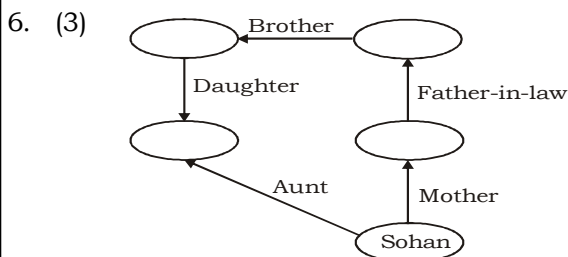


SSC MOCK TEST - 419 (SOLUTION)

1. (4) Arc is a part of Circle, Stem is a part of Plant.
2. (2) As, $743 \Rightarrow (7 + 3)^2 - 4^2 = 100 - 16 = 84$
Similarly, $625 \Rightarrow (6 + 5)^2 - 2^2 = 121 - 4 = \mathbf{117}$
3. (4) (1) $(6 + 5) \times (6 + 7) = 143$
(2) $(7 + 6) \times (7 + 8) = 195$
(3) $(8 + 7) \times (8 + 9) = 255$
(4) $(5 + 4) \times (5 + 6) = \mathbf{99 \neq 52}$
4. (1) As, $(35 + 5) \times (35 \div 5) = 280$
And, $(225 + 25) \times (225 \div 25) = 275$
Similarly, $(176 + 11) \times (176 \div 11) = 203$
5. (1) Let the present age of A and B are be $3x$ and x year respectively.
ATQ,
 $(x - 5) \times 4 = 3x - 5$
 $4x - 20 = 3x - 5$
 $x = 15$ year
 \therefore A's present age = $15 \times 3 = 45$ years



Hence, the lady is aunt of Raj.

7. (4) $6 \times 3 - 1 = 17$
 $17 \times 3 + 2 = 53$
 $53 \times 3 - 3 = 156$
 $156 \times 3 + 4 = 472$
 $472 \times 3 - 5 = \mathbf{1411}$
8. (3)

	+5	+4	+3	+2	+1	
X	F,	S	K,	O	O,	L
T	R,	J	T	I	U	
	-5	-4	-3	-2	-1	
9. (2) Bread is made up of Wheat, while Sauce is made up of Tomato.
10. (1) $kl\mathbf{opnb}/kl\mathbf{ppnb}/\mathbf{k}l\mathbf{qpn}\mathbf{b}/\mathbf{k}l\mathbf{rpn}\mathbf{b}$
11. (3) $(2)^3 = 8,$ $(3)^3 = 27 \neq 25$
 $(5)^3 = 125,$ $(7)^3 = 343$
 $(11)^3 = 1331,$ $(13)^3 = 2197$
12. (2)

13. (1) **In First Row,**

$$7 \times 3 + 7 = 28$$

In Second Row,

$$9 \times 8 + 9 = 81$$

In Third Row,

$$5 \times 9 + 5 = 50$$

14. (1) $30 * 56 * 8 * 15 * 21 = 216$

After put the sign,

$$30 \times 56 \div 8 - 15 + 21 = 216$$

$$30 \times 7 - 15 + 21 = 216$$

$$231 - 15 = 216$$

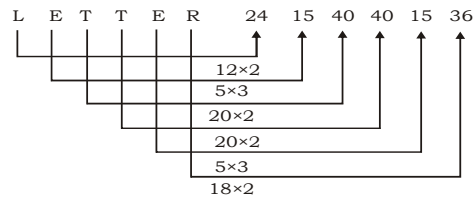
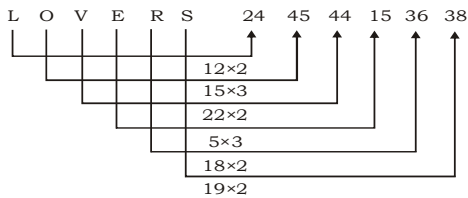
$$216 = 216$$

15. (4) Code is written as number of letters in the word.

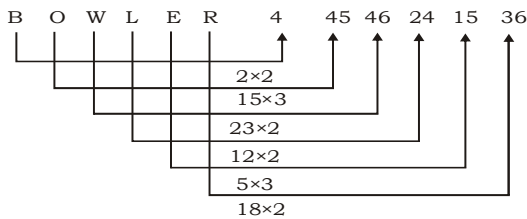
∴ Code of 'You are a good person' is '33146'.

16. (1) As,

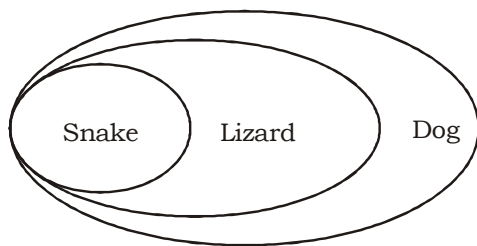
And,



Similarly,



17. (3)



I. False II. True III. True

Only Conclusion II and III follow.

18. (3)

19. (4) As, $75 + 69 = 144$

$$144 + 73 = 217$$

Similarly, $36 + 69 = 105$

$$105 + 73 = \mathbf{178}$$

20. (2) 3. Southern → 6. Sovereignty → 5. Spacious → 1. Speaking → 4. Stampede → 2. Standardize

21. (1)

22. (3)

23. (3)

24. (2)

25. (4)

26. (2) Sultan Haitham bin Tarik was on state visit to India from December 16, 2023. Trade between India and Oman has a history of several millenniums and archaeological excavations in Oman have unearthed evidence to show Indo-Oman trade during the Classical Age dated to circa third century BCE.
27. (4) The G7 nations will ban imports of rough diamonds directly from Russia starting January 1, 2024. The ban will also include Russian diamonds that have been processed in third countries starting March 1, 2024. The G7 will also implement a full traceability system by the beginning of September. The restrictions will apply to diamonds of one carat and above, expanding to half a carat or lower from September with traceability systems.
29. (2) A Municipal Corporation is a local governing body for cities, towns and villages. The British East India Company set up the first Municipal Corporation in 1687-88, in Madras.
30. (2) The Central Board of Indirect Taxes and Customs (CBIC) has constituted Customs, Central Excise and Service Tax Settlement Commission. It aims to resolve and settle the show-cause notices issued under the Customs Act, Central Excise Act and Service Tax regime.
31. (3) On 14 December 1990, the United Nations General Assembly designated October 1 as the International Day of Older Persons.
33. (2) Because the colour of chlorophyll is green, so it strongly absorbs blue and red colours of electromagnetic spectrum of the Sun.
34. (3) The Houthi movement, officially named Ansar Allah or “Supporters of God,” is a Shia Islamist political and military organization originating in Yemen’s Saada Governorate in the 1990s. Belonging to a clan from Yemen’s northwestern Saada province, the Houthis adhere to the Zaidi branch of Shiite Islam.
38. (1) The major constituent of biogas is methane (55-70%), CO₂ (30-45%) and some traces of gases such as H₂S and ammonia.
39. (1) Cow milk has 3-4 percent of fat, while buffalo milk has about 7.2%.
41. (4) The water pollution in the rivers is measured by the amount of dissolved oxygen. Dissolved oxygen (DO) is a measure of how much oxygen is dissolved in the water. Dissolved oxygen (DO) is the amount of oxygen available to living aquatic organisms. The amount of dissolved oxygen indicates its water quality.
42. (1) It uses the centrifugal force to move the particles to the bottom of the tube. In the above processes, both processes use the centrifugal force and act in the same manner. So, we can say that the working principle of the washing machine is centrifugation.
43. (1) Astronomical unit is the average distance between the Earth and the sun during an ear. It is useful to measure and report large distances. Q. Polar is located at a distance of 434 light-years from Earth.
44. (2) Puerto Miranda is an oil port situated on the east side of Lake Maracaibo in Venezuela opposite to the city of Maracaibo and is operated by the Venezuelan State Oil Company (PDVSA PETROLEO, S.A.) It is the largest crude oil export port in South America.
46. (2) Presently, markets in agricultural products are regulated under the Agricultural Produce Market Committee (APMC) Act enacted by State Governments. There are about 2477 principal regulated markets based on geography (the APMCs) and 4843 sub-market yards regulated by the respective APMCs in India.
49. (1) Stormy weather condition is indicated by a sudden fall in barometer reading. Because decrease of pressure indicates the advent of storms.

51. (4) ATQ,

	Spirit	:	Water
Initial ratio	7×3	:	6×3
Final ratio	3×7	:	2×7

Spirit is added not Water. So Water will be equal.

Spirit : Water = Total

Initial ratio	7	:	6)	4	= 13
Final ratio	9	:	6			

13 unit = 104 litres

1 unit = 8 litres

∴ 2 unit = 8 × 2 = 16 litres

52. (2) $\frac{8 \text{ person} \times 8 \text{ hour}}{12000} = \frac{16 \text{ person} \times 5 \text{ hour}}{\text{Amount}}$

∴ Amount = $\frac{16 \text{ person} \times 5 \text{ hour} \times 12000}{8 \text{ person} \times 8 \text{ hour}} = ₹15000$

53. (1)

	Let total capacity	efficiency
A = 10	30	3
B = 15		2

A fills 3 unit in first minute and B empties 2 unit in second minute.

(A - B)'s efficiency = (3 - 2) in 2 minutes = 1 unit in 2 minutes

Efficiency Minute

1 unit 2

27 unit = 27 × 2 = 54 minutes

Next 3 unit, only A can fill in 1 minute

27 + 3 unit = 54 + 1

∴ 30 unit = 55 minutes

54. (2) Speed of man in still water, u = 3.75 km/hr

Speed of the stream, v = 2.25 km/hr

Upstream speed = (u - v) = (3.75 - 2.25)km/hr = 1.5 km/hr

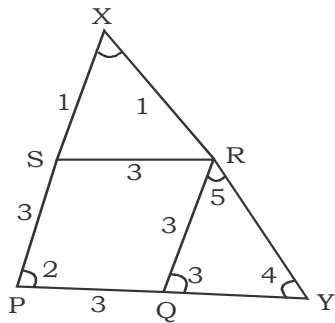
Upstream time = $\frac{\text{Distance}}{\text{Upstream speed}} = \frac{18 \text{ km}}{1.5 \text{ km/hr}} = 12 \text{ hr}$

Downstream speed = x + y = (3.75 + 2.25) km/hr = 6 km/hr

Downstream time = $\frac{\text{Distance}}{\text{Downstream speed}} = \frac{18 \text{ km}}{6 \text{ km/hr}} = 3 \text{ hr}$

∴ Total time = (12 + 3) = 15 hours

55. (3)



PQRS is a rhombus

$PQ = QR = RS = SP$

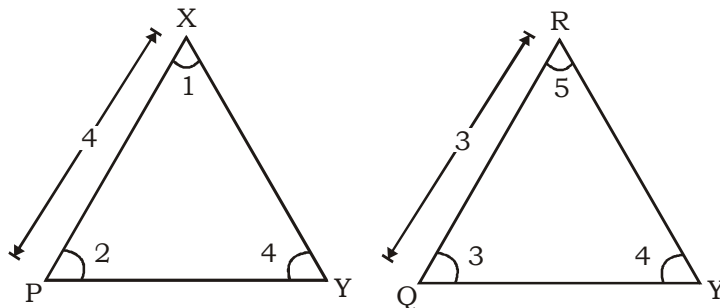
$$SX = \frac{1}{3}PQ \quad (\text{Given})$$

$$\frac{SX}{PQ} = \frac{1}{3}$$

In a rhombus $\angle 2 = \angle 3$

$\triangle PXY \sim \triangle QRY$

$\angle Y$ is common and $\angle 2 = \angle 3$



$$\frac{PX}{QR} = \frac{PY}{QY}$$

$$\frac{PX}{QR} = \frac{4}{3}$$

$$\frac{PQ + QY}{QY} = \frac{4}{3}$$

$$\frac{PQ}{QY} + 1 = \frac{4}{3}$$

$$\frac{PQ}{QY} = \frac{4}{3} - 1$$

$$\frac{PQ}{QY} = \frac{1}{3}$$

$\therefore PQ : QY = 1 : 3$

56. (3) Average weight of the 12 employees increased by $4\frac{1}{2}$ kg.

$$\text{Total increased weight} = 12 \times 4\frac{1}{2} \text{ kg} = 12 \times \frac{9}{2} \text{ kg} = 54 \text{ kg}$$

$$\text{Weight of old employees} = 38 \text{ kg}$$

$$\therefore \text{Weight of new employees} = (54 + 38) = 92 \text{ kg}$$

57. (2) $2\operatorname{cosec}^2 23^\circ \cdot \cot^2 67^\circ - \sin^2 23^\circ - \sin^2 67^\circ - \cot^2 67^\circ$

$$2\operatorname{cosec}^2 23^\circ \cdot \cot^2 (90 - 23^\circ) - \sin^2 23^\circ - \sin^2 (90 - 23^\circ) - \cot^2 67^\circ$$

$$2\operatorname{cosec}^2 23^\circ \cdot \tan^2 23^\circ - (\sin^2 23^\circ + \cos^2 23^\circ) - \cot^2 67^\circ$$

$$= \frac{2}{\sin^2 23^\circ} \cdot \frac{\sin^2 23^\circ}{\cos^2 23^\circ} - 1 - \cot^2 67^\circ$$

$$= \frac{2}{\cos^2 23^\circ} - 1 - \cot^2 67^\circ$$

$$= 2\sec^2 23^\circ - 1 - \cot^2 (90 - 23^\circ)$$

$$= 2\sec^2 23^\circ - 1 - \tan^2 23^\circ$$

$$= 2\sec^2 23^\circ - (1 + \tan^2 23^\circ)$$

$$= 2\sec^2 23^\circ - \sec^2 23^\circ = \sec^2 23^\circ$$

58. (4) By investing the sum at $(r + 6)\%$ per annum for 3 years, it would fetch $= 3 \times 6 = 18\%$ more interest.

$$18\% = 9450$$

$$1\% = \frac{9450}{18}$$

$$\therefore 100\% = \frac{9450}{18} \times 100 = ₹52500$$

59. (3) $x + y + z = 9$ (i)

$$xy + yz + zx = -28$$
(ii)

$$x^3 + y^3 + z^3 = 309$$
(iii)

Squaring equation (i) both sides,

$$x^2 + y^2 + z^2 + 2(xy + yz + zx) = 81$$

$$x^2 + y^2 + z^2 = 81 + 56$$

$$x^2 + y^2 + z^2 = 137$$

We know that,

$$x^3 + y^3 + z^3 - 3xyz = (x + y + z)(x^2 + y^2 + z^2 - xy - yz - zx)$$

$$309 - 3xyz = 9[137 - (-28)]$$

$$309 - 3xyz = 9(137 + 28)$$

$$-3xyz = 1485 - 309$$

$$-3xyz = 1176$$

$$\therefore xyz = -392$$

60. (1) $\frac{1}{3} + \left[\frac{19}{4} - \left(3\frac{1}{6} - \frac{7}{3} \right) \right]$
 $\frac{\left(\frac{1}{5} \text{ of } \frac{1}{5} \div \frac{1}{5} \right) \div \left(\frac{1}{5} \div \frac{1}{5} \times \frac{1}{5} \right)}$

$$= \frac{\frac{1}{3} + \left[\frac{19}{4} - \left(\frac{19-14}{6} \right) \right]}{\frac{1}{5} \div \frac{1}{5}} = \frac{\frac{1}{3} + \left[\frac{19}{4} - \frac{5}{6} \right]}{\frac{1}{5} \times 5}$$

$$= \frac{1}{3} + \left[\frac{57-10}{12} \right] = \frac{1}{3} + \frac{47}{12} = \frac{4+47}{12} = \frac{51}{12} = 4.25$$

61. (4) Let the total number of voter be x.

Number of voters who did not cast their votes = 20% of x = $\frac{x}{5}$

Winning candidates votes = 55% of x = $\frac{11x}{20}$

Other candidates votes = $\frac{11x}{20} - 2180$

ATQ,

$$\frac{x}{5} + \frac{11x}{20} + \frac{11x}{20} - 2180 + 320 = x$$

$$x - \frac{26x}{20} = 1860$$

$$\frac{6x}{20} = 1860$$

$$\therefore x = \frac{1860 \times 20}{6} = 6200$$

62. (3) CP for 1 banana = ₹ $\frac{9}{10}$

SP for 1 banana = ₹ $\frac{10}{9}$

SP > CP

$$\text{Profit} = \text{SP} - \text{CP} = ₹ \left(\frac{10}{9} - \frac{9}{10} \right) = \frac{100 - 81}{90} = ₹ \frac{19}{90}$$

$$\therefore \text{Profit}\% = \frac{\text{Profit} \times 100}{\text{CP}} = \frac{\frac{19}{90} \times 100}{\frac{9}{10}} = \frac{19 \times 100 \times 10}{90 \times 9} = 23 \frac{37}{81}\%$$

63. (1) The remainder when 10^1 is divided by 6 is 4
 The remainder when 10^2 is divided by 6 is 4
 The remainder when 10^3 is divided by 6 is 4
 The remainder when 10^4 is divided by 6 is 4
 Thus the remainder is always 4.

So, the required remainder = $\frac{4 + 4 + 4 + \dots + 78 \text{ times}}{6}$

= $\frac{4 \times 78}{6} \Rightarrow$ remainder 0

Thus the remainder is 0

64. (3) Given LCM = 385
 HCF = 7
 Let the numbers are $7x$ and $7y$
 \therefore LCM = $7xy$
 $7xy = 385$
 $xy = 55$

Possible co-prime factors are $\begin{bmatrix} 1, & 55 \\ 5, & 11 \end{bmatrix}$

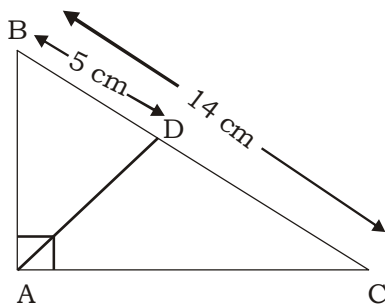
Possible numbers are $7x$ and $7y = \begin{bmatrix} 7, & 385 \\ 35, & 77 \end{bmatrix}$

Difference of the number = 42

So, required number = (35, 77)

\therefore Sum of the numbers = $(35 + 77) = 112$

65. (2)



$CD = (14 - 5)\text{cm} = 9 \text{ cm}$

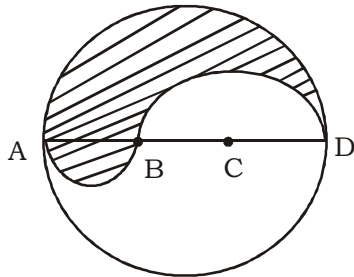
We know that,

$AD^2 = BD \times CD$

$AD^2 = 9 \times 5$

$AD = \sqrt{9 \times 5} = 3\sqrt{5} \text{ cm}$

66. (1)



$$AB = BC = CD = \frac{24}{3} = 8 \text{ cm}$$

r_1 = radius of circle whose diameter is AB

r_2 = radius of circle whose diameter is AD

r_3 = radius of circle whose diameter is BD

∴ Perimeter of shaded portion = $\pi r_1 + \pi r_2 + \pi r_3$

$$= \pi(4 + 12 + 8)\text{cm} = \left(\frac{22}{7} \times 24\right)\text{cm} = \frac{528}{7}\text{cm} = 75\frac{3}{7}\text{cm}$$

67. (4) $\tan 16^\circ = \frac{A}{B}$

$$\tan(90^\circ - 74^\circ) = \frac{A}{B} \quad [\because \tan(90^\circ - \theta) = \cot\theta]$$

$$\cot 74^\circ = \frac{A}{B}$$

$$\frac{\sec^2 74^\circ}{1 + \cot^2 74^\circ} = \frac{\sec^2 74^\circ}{\operatorname{cosec}^2 74^\circ} \quad [\because 1 + \cot^2\theta = \operatorname{cosec}^2\theta]$$

$$= \frac{\sin^2 74^\circ}{\cos^2 74^\circ} = \tan^2 74^\circ$$

$$= \frac{1}{\cot^2 74^\circ} = \frac{1}{\left(\frac{A}{B}\right)^2} = \frac{B^2}{A^2}$$

68. (4) $2 \sin\left(\frac{\pi x}{2}\right) = x^2 + \frac{1}{x^2}$

Put the value of $x = 1$

$$2 \sin\left(\frac{\pi}{2}\right) = 1^2 + \frac{1}{1^2}$$

$$2 = 2$$

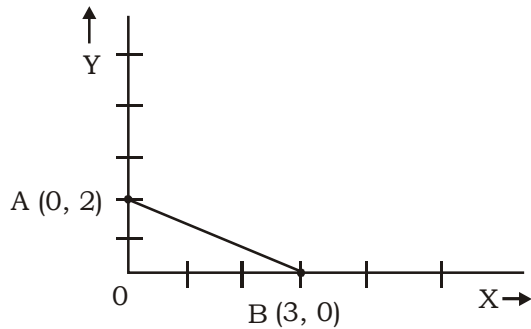
LHS = RHS

Hence value of $x = 1$

$$\text{So, } x - \frac{1}{x} = 1 - \frac{1}{1} = 0$$

69. (3) $4x + 6y = 12$

x	0	3
y	2	0



OA = 2 units

OB = 3 units

\therefore Area of $\triangle OAB = \frac{1}{2} \times b \times h = \left(\frac{1}{2} \times 3 \times 2 \right) \text{units}^2 = 3 \text{units}^2$

70. (3) Volume of frustum of a cone = $\frac{\pi h}{3} (R^2 + r^2 + Rr)$

$h = 21 \text{ cm}, R = 3 \text{ cm}$ and $r = 2 \text{ cm}$

$= \frac{22}{7 \times 3} \times 21 (3^2 + 2^2 + 3 \times 2) \text{cm}^3 = 22 \times 19 = 418 \text{ cm}^3$

71. (4) $\sqrt{x} + \frac{1}{\sqrt{x}} = 3$

Squaring both sides,

$$\left(\sqrt{x} + \frac{1}{\sqrt{x}} \right)^2 = (3)^2$$

$$x + \frac{1}{x} = 9 - 2 = 7$$

Again squaring both sides

$$\left(x + \frac{1}{x} \right)^2 = (7)^2$$

$$x^2 + \frac{1}{x^2} = 49 - 2 = 47$$

$$\frac{x^4 + 1}{x^2} = 47$$

$$x^4 + 1 = 47x^2$$

$$x^4 - 47x^2 = -1$$

$\therefore x^2(x^2 - 47) = -1$



Campus

K D Campus Pvt. Ltd

1997, GROUND FLOOR OPPOSITE MUKHERJEE NAGAR POLICE STATION, OUTRAM LINES, GTB NAGAR, NEW DELHI – 09

72. (3) Production of wheat in the year 2002 = 300 tonnes

Production of wheat in the year 2003 = 500 tonnes

$$\text{Required increase\%} = \left(\frac{500 - 300}{300} \right) \times 100 = \left(\frac{200}{300} \times 100 \right) \% = 66 \frac{2}{3} \%$$

73. (1) Required average = $\frac{3297 + 2523 + 2860 + 2660 + 2770 + 2665 + 2899}{7} = \frac{19674}{7}$

= \$2810.57 million \approx \$2811 million

74. (2) Required ratio = $200 \times \frac{120}{100} : 320 = 240 : 320 = 3 : 4$

75. (1) Required average = $\frac{3.34 + 5.83 + 1.69}{3} = \frac{10.86}{3} = ₹3.62 \text{ lakh}$

MEANINGS IN ALPHABETICAL ORDER

Autonomy	the right or condition of self-government	स्वयं शासन
Blatant	(of bad behavior) done openly and unashamedly	मुखर
Broad	having an ample distance from side to side; wide	विस्तृत
Calligrapher	someone skilled in penmanship	सुंदर लिखावट वाला व्यक्ति
Cannibalism	act of feeding on human flesh	नरमांस-भक्षण
Cartographer	a person who draws or produces maps.	वह व्यक्ति जो मानचित्र बनाता हो
Concede	admit that something is true or valid	स्वीकार करना
Confer	grant or bestow (a title, degree, benefit, or right)	उपाधि प्रदान करना
Confide	tell someone about a secret or private matter	गुप्त बात कहना
Confined	limited to a certain extent	सीमित
Connoisseur	A critical judge of any art and craft	विशेषज्ञ
Constituent	a component part of something	घटक
Contemporaries	Persons living at the same time	समकालीन
Convalescent	One who is recovering health after illness	स्वास्थ्य प्रदान करने वाला व्यक्ति
Cynosure	One who is a centre of attraction	आकर्षण बिंदु
Debonair	A person having a sophisticated charm	सुशील व्यक्ति
Demagogue	A leader who sways his followers by his oratory	वाक-चातुर्य जननेता
Denominator	a divisor	भाजक
Dilettante	A dabbler (not serious) in art, science and literature	(कला, विज्ञान और साहित्य आदि के मामले में) शौकिया, अनाड़ी
Exaggerated	regarded or represented as larger, better, or worse than in reality	अतिशयोक्तिपूर्ण
Exemplary	serving as a desirable model	अनुकरणीय
Futile	incapable of producing any useful result	व्यर्थ
Magnitude	the great size or extent of something	परिमाण, मात्रा
Parity	the state or condition of being equal	समता
Valour	great courage in the face of danger	साहस
Vociferously	in a loud and forceful manner	तेज आवाज में

SSC MOCK TEST - 419 (ANSWER KEY)

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

76. (2) Since the indirect speech is in past tense, 'is' should be changed into 'was'.
77. (3) 'is' should be changed into 'are', as the subject is plural.
87. (2) 'A few' is used with countable nouns. e.g- rats.
90. (2) The correct spelling of 'Convelescent' is 'Convalescent'.
91. (2) The correct spelling of 'Demogogue' is 'Demagogue'.