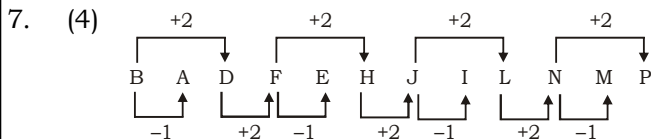
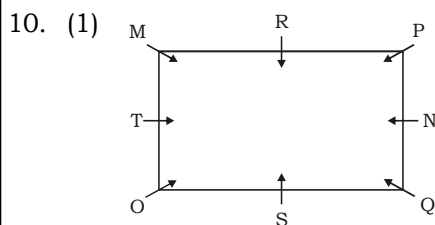


SSC MOCK TEST - 449 (SOLUTION)

1. (2) Hepatitis is caused by virus, while tuberculosis is caused by Bacteria.
2. (2) As, $(453 \div 3) + 3 = 154$
Similarly, $(561 \div 3) + 3 = 190$
3. (1) Asthma affects the lungs and Arthritis affects bones, while Conjunctivitis affects the eyes.
4. (3) Except 1895, others are divisible by 13.
5. (1) Except Ornithology, others are studies related to the body parts. Ornithology is related to the branch of zoology.
6. (3) $625 + 12^2 = 769$
 $769 + 13^2 = 938$
 $938 + 14^2 = 1134$
 $1134 + 15^2 = 1369$

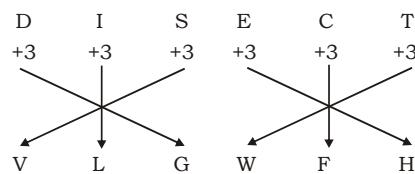
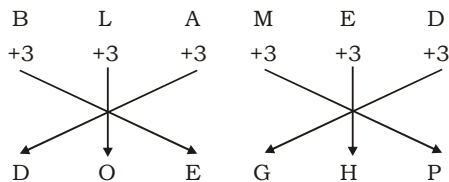


8. (3) As, $16 \times 83 = 1328 \Rightarrow 1 + 3 + 2 + 8 = 14$
Similarly, $16 \times 92 = 1472 \Rightarrow 1 + 4 + 7 + 2 = 14$
9. (3) lmjqr / rqjml / lmjqr

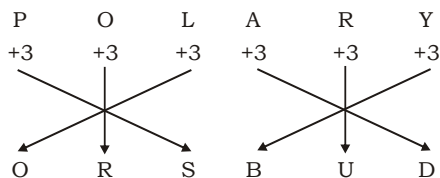


So, N is immediate left to P.

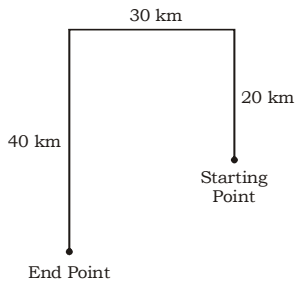
11. (2) As, And,



Similarly,



12. (3)



Kavita is in South-West.

13. (3) 2. Sketching → 3. Colouring → 4. Framing → 1. Displaying

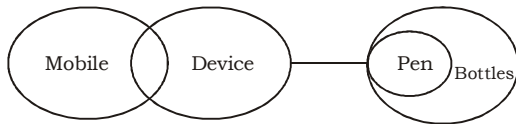
14. (1) As, $5 \times 2 - 3 = 7$

And $27 \times 2 - 23 = 31$

Similarly, $135 \times 2 - 69 = 201$

15. (3) 16. (3)

17. (4)



I. False

II. False

III. False

Hence, No conclusion follows.

18. (2) Son age five years ago = 18 years

Son present age = $18 + 5 = 23$ years

Father age at the time of birth of his son = son present age = 23 years

Present age of father = $23 + 23 = 46$ years

19. (4) 20. (3)

21. (1) $105 \div 5 \times 18 + 35 - 28 = 31$

After changing 5 and 35,

$105 \div 35 \times 18 + 5 - 28 = 31$

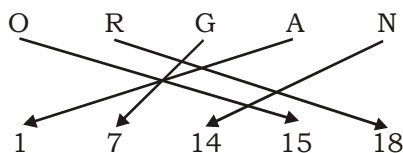
$3 \times 18 + 5 - 28 = 31$

$59 - 28 = 31$

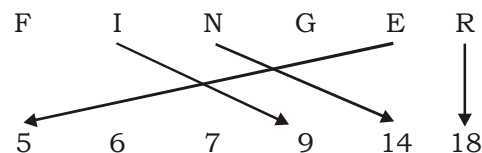
$31 = 31$

22. (2)

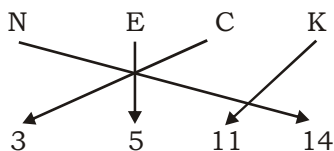
23. (2) As,



And,



Similarly,



24. (4)

25. (3)

KD

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

26. (4) Chinese company Yangtze power has developed world's largest electric cruise ship.
(1) This cruise ship has a 7,500-kilowatt-hour massive battery.
(2) This battery has been manufactured by Contemporary Amperex Technology.
(3) This ship has been built for the purpose of taking passengers for sightseeing on the Yangtze River.
27. (4) The International Day for the Elimination of Racial Discrimination has been observed annually on 21 March across the globe.
(1) The theme of this year's observance of the International Day for the Elimination of Racial Discrimination was 'Voice for action against racism'.
(2) This day also encouraged people globally to strengthen their voices against racism and a safe environment for all those speaking out against racism.
28. (1) Tobin tax is a tax which is imposed on a short term currency transactions.
29. (3) Indian Army has participated in the 21st KHAAN QUEST multinational military exercise in Ulaanbaatar, Mongolia from 27 July to 9 August 2024. Co-sponsored by the U.S. Indo-Pacific Command and hosted by the Mongolian Armed Forces, KHAAN QUEST promotes regional peace and security.
30. (1) Snell's law was discovered by Willebrord Snell in the year 1621. It describes relationship between the angle of incidence and angle of refraction.
31. (1) She had made an immense contribution towards restoring peace in Maoist affected areas of State.
32. (2) Thermal radiation is measured by Bolometer.
Dynamometer measures electrical power.
Crescograph measures the growth in plants.
Fathometer measures depth of the ocean.
33. (2) Benzene is carcinogenic element. Important carcinogenic elements are cadmium, nickel, arsenic, beryllium and chromium.
34. (4) Toxoplasmosis is caused by Toxoplasma gondii which is a protozoan parasite.
Anemia is caused by deficiency of Vitamin B12.
Ariboflavinosis is caused by deficiency of Vitamin B2.
Beriberi is caused by lack of thiamine (vitamin B1).
35. (2) The principle of Maximum social advantage is considered as the 'Principle of Public Finance'. It was formulated by Hugh Dalton and Professor Pigou. It works as fundamental principle for fiscal operation of government .
36. (2) Hukam Singh known as Sardar Hukam Singh was elected the second Deputy Speaker(1956-1957) and third Speaker of the Lok Sabha (1962 - 1967). He was the governor of Rajasthan from 1967 to 1972. M. A. Ayyangar was the first Deputy Speaker of Lok Sabha (1952-1956).
37. (2) Maharaja Sawai Pratap Singh had built the Hawa Mahal in the year 1799. Ustad Lal Chand was the architect of this monument. This monument has 953 windows.
38. (3) A Kashmiri Century: Portrait of a Society in Flux is authored by Khemlata Wakhlu who is social worker, writer and a politician . She has devoted her fifty years in the development of Kashmiri people.
39. (4) Important Plant Hormones nitric oxide, abscisic acid, ethylene, gibberellin, cytokinin, salicylic acid, and auxin.
40. (1) The survey stated that worker population ratio increased to 35.3% compared to 34.7% in 2017-18. In Urban India Unemployment rate fell to 7.7% in 2018-19.
41. (2) The Godavari River is the largest river in peninsular India and is also known as Vriddha Ganga. The main tributaries of Godavari river are Pravara, Poorna, Manjra, Penganga, Wardha, Wainganga, Pranhita.
42. (1) Tamilians celebrate Tamil New Year on April 14 which is popularly known as Puthandu. Puthandu, also known as Varusha pirappu, marks Tamil New Year and is observed on first day of Tamil month Chithirai.

43. (1) Preventive detention act comes under the article 22
 Right to Freedom(article 19 to 22)
 Right to equality (article 14 to 18)
 Right against exploitation (article 23-24)
 Right of Constitutional remedies (article 32)
44. (4) India's highest civilian award Bharat Ratna and Padma Vibhushan were started in the year 1954. Padam Vibhushan later became Padam Vibhushan, Padam Bhushan and Padam Shri in 1955.
45. (2) Shahnama was written by Ferdowsi under the patronage of Samanid dynasty.
 Akbarnama was written by AbulFazal.
 Baburnama also known as Tuzuk-i-Baburi is the autobiography of Babur. It was written in Chagtai Turkic by Babur.
 Humayunama was written by Humayun's half sister Gulbadan Begum.
46. (2) Sargent commission was related to the development of Education and Literacy in India. It came under the tenure of governor general lord Wavell in the year 1944. Simon commission came in tenure of lord Erwin in the year 1928.
47. (3) Thermodynamic temperature is measured in Kelvin which is the SI unit of temperature. Siemens is a unit of Conductance (electrical). Torr is a unit of pressure. Coulomb is the SI unit of electric charge.
48. (2) On 25 July 2024, Union Minister for Information and Broadcasting, Ashwini Vaishnaw, announced the winners of the 10th National Community Radio Award and inaugurated India's 500th Community Radio Station at the Indian Institute of Mass Communication in Aizawl, Mizoram.
49. (2) Article 326- Elections in Lok Sabha and Vidhan Sabha will be on Adult Suffrage.
 Article 315- Establishment of central and state civil services.
 Article 338- National commission for Scheduled caste and Scheduled tribes.
 Article 343- Hindi will be the official language of Union.
50. (4) Phanek-Innaphi is the traditional dress of Manipur.
 It is worn by Manipuri women.
 Sarong or a wraparound skirt is called Phanek and a Shawl or cloth wrap for the upper body is known as Innaphi.
51. (4) Let the quantity of the chemical in the bottle originally be x liters.
 ATQ,

$$\text{Then, quantity of chemical left in bottle after 5 operation} = \frac{x \left(1 - \frac{12}{x}\right)^5}{x} = \frac{32}{243}$$

$$\left(1 - \frac{12}{x}\right)^5 = \left(\frac{2}{3}\right)^5$$

$$\frac{x-12}{x} = \frac{2}{3}$$

$$3x - 36 = 2x$$

$$\therefore x = 36 \text{ litres}$$

Hence, 36 litres of chemical was the bottle hold originally.

52. (1) If the length of train-B be x metre.

ATQ,

$$\text{Speed of train} = \frac{240+x}{50} = \frac{240}{15}$$

$$\frac{240+x}{50} = 16$$

$$240+x=800$$

$$x=560 \text{ metre}$$

53. (1) Let the numbers be $2x$ and $3x$.

ATQ,

$$\frac{2x+4}{3x+4} = \frac{5}{7}$$

$$15x+20=14x+28$$

$$x=28-20=8$$

$$\text{Difference between numbers} = 3x - 2x = x = 8$$

54. (3) Let the total sum be ₹ x .

ATQ,

$$\frac{2}{3}x \times \frac{12 \times 6}{100} + \frac{1}{3}x \left(1 + \frac{10}{100}\right)^2 - \frac{x}{3} = ₹1650$$

$$\frac{48x}{100} + \frac{21x}{300} = 1650$$

$$\frac{144x+21x}{300} = 1650$$

$$\therefore x = \frac{1650 \times 300}{165} = ₹ 3000$$

55. (4) $x^4 - 62x^2 + 1 = 0$

$$x^2 + \frac{1}{x^2} = 62$$

$$\left(x + \frac{1}{x}\right) - 2 \times x \times \frac{1}{x} = 62$$

$$x + \frac{1}{x} = \sqrt{64} = 8$$

Now,

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

$$8^3 = x^3 + \frac{1}{x^3} + 3 \times 8$$

$$x^3 + \frac{1}{x^3} = 512 - 24$$

$$\therefore x^3 + x - 3 = 488$$

56. (2) $6 \times (\text{side})^2 = 13.5$

$$\text{Side} = \sqrt{\frac{13.5}{6}} = 1.5 \text{ cm}$$

$$\therefore \text{Diagonal} = \sqrt{3} \times \text{side} = 1.5\sqrt{3} \text{ cm}$$

57. (2) $\sec 31^\circ = x$

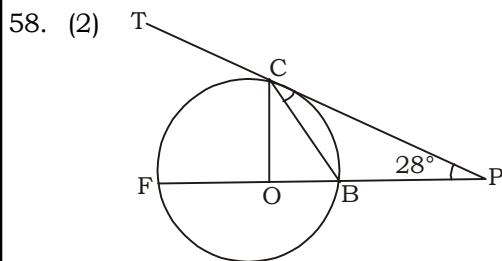
$$\sin^2 59^\circ + \frac{1}{\sec^2 31^\circ} - \frac{1}{\sin^2 59^\circ \operatorname{cosec} 259^\circ}$$

$$= \sin^2(90^\circ - 31^\circ) + \frac{1}{\sec^2 31^\circ} - 1$$

$$= \cos^2 31^\circ + \frac{1}{\sec^2 31^\circ} - 1$$

$$= \frac{1}{\sec^2 31^\circ} + \frac{1}{\sec^2 31^\circ} - 1$$

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



In $\triangle OCP$,

$$\angle OCP + \angle OPT + \angle COP = 180^\circ$$

$$90^\circ + 28^\circ + \angle COP = 180^\circ$$

$$\angle COP = 180^\circ - 118^\circ = 62^\circ$$

In $\triangle OCB$,

$$\angle OCB + \angle OBC + \angle COB = 180^\circ$$

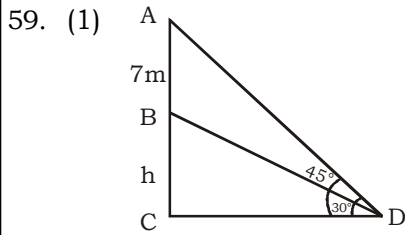
$$x + x + 62^\circ = 180^\circ$$

$$(\text{Let } \angle OCB = \angle OBC = x^\circ)$$

$$x = \frac{180^\circ - 62^\circ}{2} = 59^\circ$$

$$\angle OCB + \angle BCP = 90^\circ$$

$$\therefore \angle BCP = 90^\circ - 59^\circ = 31^\circ$$



Let the height of tower be h m.

total height of tower and

$$\text{Flag staff} = \frac{7}{\left(1 - \frac{\tan 30^\circ}{\tan 45^\circ}\right)} = \frac{7}{\left(1 - \frac{1}{\sqrt{3} \times 1}\right)} = \frac{7\sqrt{3}}{\sqrt{3}-1}$$

$$\text{Height of tower (h)} = \frac{7\sqrt{3}}{\sqrt{3}-1} - 7$$

$$= 7 \left(\frac{\sqrt{3}-\sqrt{3}+1}{\sqrt{3}-1} \right) = \frac{7}{\sqrt{3}-1} \text{ m}$$

60. (1)

$$1 - \frac{\sin^2 A}{1 + \cos A} + \frac{1 + \cos A}{\sin A} - \frac{\sin A}{1 - \cos A}$$

$$= \frac{\sin^2 A}{1 + \cos A} - \frac{\sin A}{1 - \cos A} = \frac{\sin^2 A (1 - \cos A) + \sin(1 + \cos A)}{1^2 + \cos^2 A}$$

$$= \frac{\sin^2 A (1 - \cos A) + \sin A (1 + \cos A)}{\sin^2 A}$$

$$= (1 - \cos A) + \frac{(1 + \cos A)}{\sin A}$$

$$\frac{\sin^2 A}{1 + \cos A} - \frac{\sin A}{1 - \cos A} = (1 - \cos A) + \frac{(1 + \cos A)}{\sin A}$$

$$1 - \frac{\sin^2 A}{1 + \cos A} + \frac{1 + \cos A}{\sin A} - \frac{\sin A}{1 - \cos A}$$

$$= 1 - \left[(1 - \cos A) + \frac{1 + \cos A}{\sin A} \right] + \frac{(1 + \cos A)}{\sin A}$$

$$= 1 - \left[(1 - \cos A) + \frac{1 + \cos A}{\sin A} \right] + \frac{(1 + \cos A)}{\sin A} = \cos A$$

61. (1) $2x + \frac{2}{x} = 3$

$$x + \frac{1}{x} = \frac{3}{2}$$

On cubing both sides,

$$x^3 + \frac{1}{x^3} + 3 \times x \times \frac{1}{x} \left(x + \frac{1}{x} \right) = \frac{27}{8}$$

$$x^3 + \frac{1}{x^3} + 3 \times \frac{3}{2} = \frac{27}{8}$$

$$x^3 + \frac{1}{x^3} = \frac{27}{8} - \frac{9}{2}$$

$$x^3 + \frac{1}{x^3} = \frac{-9}{8}$$

$$x^3 + \frac{1}{x^3} + 2 = 2 - \frac{9}{8}$$

$$x^3 + \frac{1}{x^3} + 2 = \frac{7}{8}$$

62. (1) Let the LCM be L and HCF be H.

Then,

$$L = 4H$$

$$\text{Now, } H + 4H = 125$$

$$5H = 125$$

$$H = 25$$

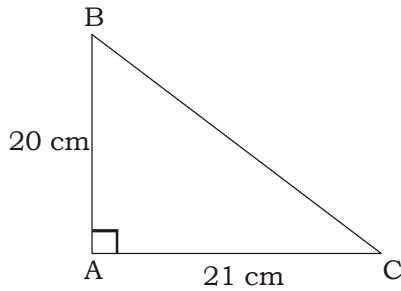
$$L = 25 \times 4 = 100$$

$$\text{Second Number} = \frac{100 \times 25}{100} = 25$$

63. (3) $\left(1 - \frac{1}{3}\right)\left(1 - \frac{1}{4}\right)\left(1 - \frac{1}{5}\right) \dots \dots \left(1 - \frac{1}{n}\right)$

$$= \frac{2}{3} \times \frac{3}{4} \times \frac{4}{5} \times \dots \dots \times \frac{n-1}{n} = \frac{2}{n}$$

64. (1)



In $\triangle ABC$,

$$AC = \sqrt{21^2 + 20^2} = \sqrt{441 + 400} = \sqrt{841} = 29 \text{ cm}$$

$$\sin B = \frac{AC}{BC} = \frac{21}{29}$$

$$\cot C = \frac{AC}{AB} = \frac{21}{20}$$

$$\sin B - \cot C = \frac{21}{29} - \frac{21}{20} = \frac{420 - 609}{580} = \frac{-189}{580}$$

65. (4) C.P. for Malkhan Singh = ₹ x

$$\text{M.P.} = x + \frac{50}{100} \times x = ₹ 1.5x$$

S.P. by Malkhan Singh = C.P. of LG

$$= 1.5x - 1.5x \times \frac{20}{100} = ₹ 1.2x$$

S.P. by LG = ₹ $(1.2x + 20)$

A.T.Q,

$$1.2x + 20 = x + \frac{30}{100} \times x$$

$$1.2x + 20 = 1.3x$$

$$x = 20 \times 10$$

$$x = ₹ 200$$

$$\text{C.P. of LG} = 1.2 \times 200 = ₹ 240$$

$$\text{Profit percent} = \frac{20}{240} \times 100 = 8.33\%$$

66. (3) Let A be x .

$$\text{Then, } \frac{1}{6} C = x$$

$$C = 6x$$

$$\text{And } B = 2x$$

Now, Average of A, B and C = 24

$$\frac{x + 2x + 6x}{3} = 24$$

$$3x = 24$$

$$x = \frac{24}{3} = 8$$

$$\text{Now, difference between A and C} = 6x - x = 5x = 5 \times 8 = 40$$

67. (2) Amount of milk in 48 litres of mixture = $\frac{5}{5+x} \times 48 = \frac{240}{5+x}$ litres

So, amount of water in 48 litres of mixture = $\frac{48x}{5+x}$ litres

ATQ,

$$\frac{240}{5+x} : \left[\frac{48x}{5+x} + 12 \right] = 2 : 1$$

$$\frac{240}{5+x} = \left[\frac{96x}{5+x} + 24 \right]$$

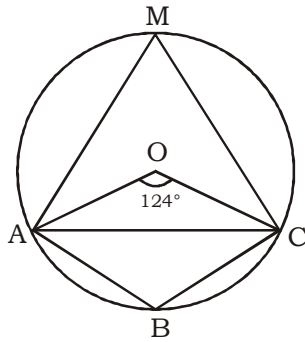
$$240 = 96x + 120 + 24x$$

$$120x = 240 - 120 = 120$$

$$x = \frac{120}{120} = 1$$

68. (2) Required Population = $\frac{22100}{85} \times 100 \times \frac{100}{130} = 20000$

69. (2)



$$\angle AOC = 124^\circ$$

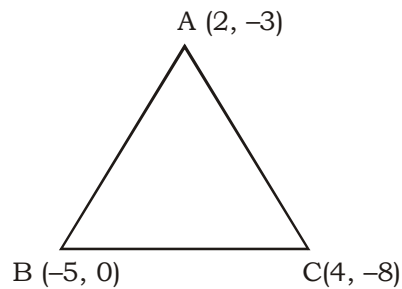
$$\angle AMC = \frac{124^\circ}{2} = 62^\circ$$

(The angle subtended by an arc at the is double the angle subtended by it at any point on the remaining part of circle.)

$$\angle ABC = 180^\circ - 62^\circ = 118^\circ$$

$$\angle CBP = 180^\circ - 118^\circ = 62^\circ$$

70. (3)



$$\text{Required centroid} = \left(\frac{2+(-5)+4}{3}, \frac{-3+0+(-8)}{3} \right) = \left(\frac{1}{3}, \frac{-11}{3} \right) = (1, -11)$$

71. (3) Let the speed of boat in still water be x kmph and that of current be y kmph.

$$x + y = \frac{4.8}{\frac{8}{60}} = \frac{4.8 \times 60}{8}$$

$$x + y = 36 \quad \dots(i)$$

$$\text{and, } x - y = \frac{4.8}{\frac{9}{60}} = \frac{4.8 \times 60}{9}$$

$$x - y = 32 \quad \dots(ii)$$

By equation (i) – (ii),

$$x + y - x + y = 36 - 32 = 4$$

$$2y = 4$$

$$\therefore y = \frac{4}{2} = 2 \text{ km/h}$$

72. (4) The average number of women who study in various streams in ITI from MP in 2015

$$= \frac{245 + 685 + 1750 + 140 + 160}{5} = \frac{2980}{5} = 596$$

The average number of women who study from UP in 2016

$$= \frac{110 + 280 + 1050 + 100 + 160}{5} = \frac{1700}{5} = 340$$

$$\therefore \text{Required difference} = 596 - 340 = 256$$

73. (2) Required% = $\frac{3675 - 2980}{2980} \times 100 = \frac{695}{2980} \times 100 = 23.32\%$

74. (3) Production cost = $24 \left[\frac{10}{100} \times \frac{3}{10} + \frac{17}{100} \times \frac{8}{17} \right]$
 $= 24[0.03 + 0.08] = 24 \times 0.11 = ₹2.64 \text{ crore}$

75. (2) $Q_{1_1} = 24 \times \frac{20}{100} \times \frac{2}{5} = ₹1.92 \text{ crore}$

$$R_{1_2} = 24 \times \frac{15}{100} \times \frac{7}{15} = ₹1.68 \text{ crore}$$

$$\therefore \text{Difference} = 1.92 - 1.68 = ₹0.24 \text{ crore} = ₹24 \text{ lakh}$$

MEANINGS IN ALPHABETICAL ORDER

| | | |
|--------------|--|--|
| Alimony | a husband's or wife's court-ordered provision for a spouse after separation or divorce | गुजारा-भत्ता |
| Aromatic | having a pleasant and distinctive smell | सुगन्धित |
| Assassin | a murderer of an important person in a surprise attack for political or religious reasons | हत्यारा |
| Befit | be appropriate for | के अनुकूल |
| Clad | clothed | कपड़े पहने हुए |
| Commensurate | corresponding in size or degree; in proportion | (किसी वस्तु) के अनुरूप |
| Condole | express sympathy for (someone) | दुःख में हमदर्दी दिखाना |
| Console | comfort (someone) at a time of grief or disappointment | सांत्वना देना |
| Fable | a short story, typically with animals as characters, conveying a moral | जानवरों के किरदारों वाली एक नीति कथा |
| Fiasco | a complete failure | असफलता |
| Kleptomaniac | a person who cannot control their desire to steal things, usually because of a medical condition | वह व्यक्ति जो आमतौर पर अपनी चिकित्सीय स्थिति के कारण चीजों को चोरी करने की अपनी इच्छा को नियंत्रित नहीं कर सकता हो |
| Optometrist | A person who has a profession of examining the eyes for visual defects and prescribing corrective lenses | आँखों के लिए लेंस बनाने वाला |
| Pantheist | one who practice a doctrine that equates God with the forces and laws of the universe | वह ब्रह्मांड की शक्तियों और उसके को भगवान मानता है |
| Parsimony | extreme unwillingness to spend money or use resources | मितव्ययिता |
| Pedantic | showing much knowledge | पांडित्य पूर्ण |
| Perennial | lasting or existing for a long or apparently infinite time | चिरस्थायी |
| Philanderer | a man who readily or frequently enters into casual sexual relationships with women | स्त्री लोलुप |
| Rhetoric | the art of effective or persuasive speaking or writing | वाकपटु |
| Tart | sharp or acid in taste | खट्टा |
| Verbatim | in exactly the same words | शब्दशः |

SSC MOCK TEST - 449 (ANSWER KEY)

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

76. (4) No error

77. (1) 'Bacteria' is a plural noun, hence it is followed by a plural verb. Change 'is' into 'are'.

86. (3) Verb 'prefer' is followed by 'to'.

87. (3) No improvement. 'Taxes' is Third Person Plural Noun, therefore, 'they' should be used for it.

90. (2) The correct spelling of 'Optomatrist' is 'Optometrist'.

91. (2) The correct spelling of 'Perenial' is 'Perennial'.