S1. Ans.(c)
Sol.

S2. Ans.(a)
Sol.
$(4×2, 4×3, 4×6) = (8, 12, 24)$
Same as → $(3×2, 3×3, 3×6) = (6, 9, 18)$

S3. Ans.(d)
Sol.
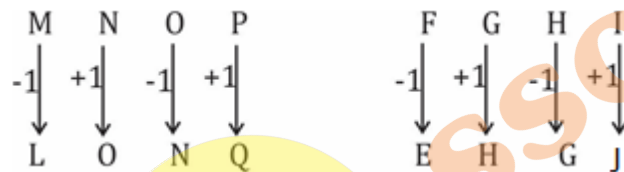
S4. Ans.(d)
S5. Ans.(b)

S6. Ans.(b)
Sol. $7×4+4 = 32$
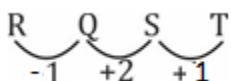Same as $13×7+7 = 98$

S7. Ans.(a)
Sol. Audience is present in cinema same as congregation is present in church OR temple

S8. Ans.(b)
Sol.

Except (b), all other follow above pattern

S9. Ans.(d)
Sol. (5, 13, 12) – triplet

(6, 10 ,8) is also triplet

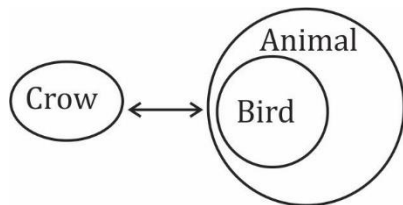## S10. Ans.(c)
Sol. C A B

$3 \times 1 \times 2 = 6$

B E D

$2 \times 5 \times 4 = 40$

H A D

$8 \times 1 \times 4 = 32$

S11. Ans.(d)
Sol.
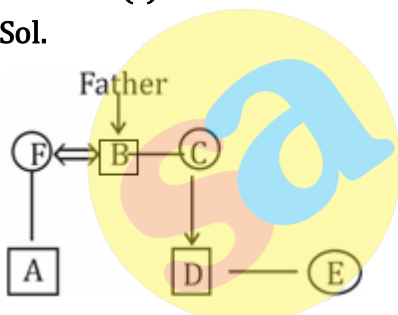

I. ×

II. ✓

III. ×

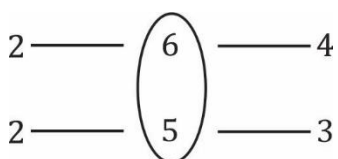I & III are positive and negative so either I or III and II follow.

S12. Ans.(c)
Sol.

F is sister-in-law of C

S13. Ans.(a)
Sol.

3 at the top

S14. Ans.(c)
Sol.

C	O	M	P	U	T	E	R
1	2	3	4	5	6	7	8

O	C	R	E	P	M	T	U
2	1	8	7	4	3	6	5

Same as

D	A	U	G	H	T	E	R
1	2	3	4	5	6	7	8

A	D	R	E	G	U	T	H
2	1	8	7	4	3	6	5

S15. Ans.(a)
S16. Ans.(c)

S17. Ans.(c)
Sol. Except Tapti, all remaining rivers meet in Bay of Bangal. Tapti meets in Arabian sea.

S18. Ans.(b)
Sol. $10 - 5 / 10 \times 8 + 10 = 16$
$10 - ½ \times 8 + 10 = 16$
$20 - 4 = 16$
$16 = 16$

S19. Ans.(d)
Sol. b a c d c a / b a c d c a / b a c d c a

S20. Ans.(a)
Sol. $217 = 6^3 + 1$
$28 = 3^3 + 1$
$65 = 4^3 + 1$

S21. Ans.(a)
Sol.
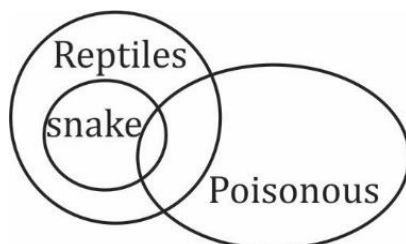
S22. Ans.(d)
Sol.

		Milk	Juice
A	→	$2_{\times 3} = 6$	$1_{\times 3} = 3 \Rightarrow 3_{\times 3}$
B	→	4	$5 \Rightarrow 9$

$$10 \qquad 8$$
$$5 : 4$$

S23. Ans.(d)
Sol. Both are opposite to each other (antonyms)

S24. Ans.(b)
S25. Ans.(d)

S26. Ans.(c)
Sol. When chlorine and bromine atoms come into contact with ozone in the stratosphere, they destroy ozone molecules. One chlorine atom can destroy over 100,000 ozone molecules before it is removed from the stratosphere.

S27. Ans.(d)
Sol. Andre Marie Ampere, French physicist who founded and named the science of electrodynamics, now known as electromagnetism. His name endures in everyday life in the ampere, the unit for measuring electric current.

S28. Ans.(a)
Sol. Ala-ud-din Khilji was the first Muslim ruler whose empire covered almost whole of India up to its extreme south. He fought many battles, conquered Gujarat, Ranthambhor, Chittor, Malwa, and Deccan. During his reign of 20 years, Mongols invaded the country several times but were successfully repulsed.

S29. Ans.(a)
Sol. Bandipur National Park established in 1974 as a tiger reserve under Project Tiger, is a national park located in the Indian state of Karnataka, which is the state with the second highest tiger population in India.

S30. Ans.(a)
Sol. The Bagh Caves are a group of nine rock-cut monuments, situated among the southern slopes of the Vindhyas in Bagh town of Dhar district in Madhya Pradesh state in central India.

S31. Ans.(b)
Sol. Galvanization is the process of applying a protective zinc coating to steel or iron, to prevent rusting. The most common method is hot-dip galvanizing, in which the parts are submerged in a bath of molten zinc.

S32. Ans.(b)
Sol. Aihole (city of temples) was the first capital of Chalukyas and it was centre of trade which was later developed into religious centre having number of temples around. The capital of Chlukyas was later moved to Badami during Pulakesin I. Badami is also known as Vatapi. Jayasimha was the first ruler of this dynasty.

S33. Ans.(d)
Sol. In February 2019, India won one gold medal and five silver medals at the MakranCup Boxing in Chabahar, Iran.

S34. Ans.(b)
Sol. National champion Deepak Singh (49kg) was the lone Indian boxer to notch up a gold, while five others claimed silver medals in the Makran Cup in Chabahar, Iran.

S35. Ans.(c)
Sol. World Water Day 2019 was observed on 22nd march with the theme 'Leaving no one behind' to focus on marginalised groups.

S36. Ans.(c)
Sol. Ministry of Human Resource Development implemented the Midday Meal scheme. The Ministry of Human Resource Development is the nodal agency for sanctioning funds and supply of food grains (central assistance) to the states on behalf of the Government of India.

S37. Ans.(a)
Sol. The Slave Dynasty was the first Muslim dynasty that ruled India. Qutub-ud-din Aibak, a slave of Muhammad Ghori, who became the ruler after the death of his master, founded the Slave Dynasty
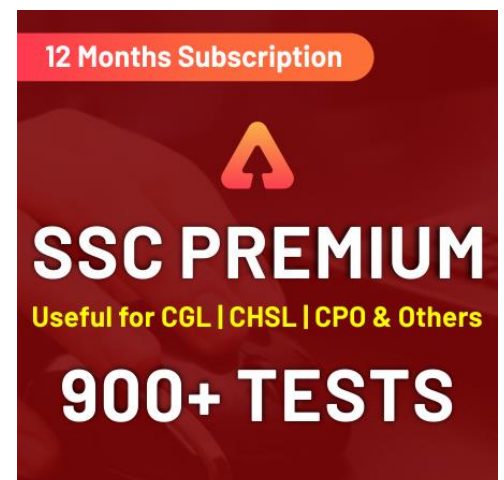
S38. Ans.(a)
Sol. Lok Adalats have been given statutory status under the Legal Services Authorities Act, 1987. Under the said Act, the award (decision) made by the Lok Adalats is deemed to be a decree of a civil court and is final and binding on all parties and no appeal against such an award lies before any court of law.

S39. Ans.(b)
Sol. NH 44 covers the North-South Corridor of NHDP and it is officially listed as running over 3,745 km (2,327 mi) from Srinagar to Kanyakumari. It is the longest national highway in India.

S40. Ans.(b)
Sol. The Indian Space Research Organization (ISRO) chairman and Padma Bhushan awardee, K Radhakrishnan created and unleashed a historical moment when Mars Orbiter became the first Indian space craft to enter Martian orbit in a maiden attempt.

S41. Ans.(d)
Sol. The Slave dynasty was founded by Quṭb al-Dīn Aibak, a favourite slave of the Muslim general and later sultan Muḥammad of Ghori.

S42. Ans.(d)
Sol. Nathu La was reopened following numerous bilateral trade agreements in 2006 which coincided with the "year of friendship" between the two Asian Giants. Prior to the opening of the pass, trade was carried through the port of Tianjin.

S43. Ans.(b)
Sol. The Rabindranath Tagore Literary Prize 2019 was awarded to author Rana Dasgupta for his 2010 novel "Solo" which is a tale of estrangement and the ultimate failure of material existence.

S44. Ans.(b)
Sol. . The colourful art named Nandna block print, which uses graceful yet aligned arrangements of motifs on fabric, is practised in Tarapur village of Madhya Pradesh.

S45. Ans.(a)
Sol. Quaternary sector of the economy represents the knowledge portion of the economy. This is said to be a sub classification of the tertiary sector which includes activities like technological development, R&D etc. This sector is basically involved in domains which are given the responsibility of improving the quality of services offered in the economy. They may include High Quality Education, Software Developers, Statisticians, Brokerage and Accounting Firms etc.

S46. Ans.(d)
Sol. Article 19 (1) (d): The right of every citizen to move freely throughout the territory of India.

S47. Ans.(b)
Sol. Among the following metals Gold is the most ductile.

S48. Ans.(b)
Sol. International Day of Forests 2019 was observed on March 21st with the theme 'Forests and Education' to raise awareness on how sustainably managed forests provide a wide array of contributions. International Day of Forests 2019 promotes education to Learn to Love Forests.

S49. Ans.(b)
Sol. Among the following Calcium is the most reactive metal.

S50. Ans.(d)
Sol. Kailash Satyarthi is the seventh Indian to win a Nobel Prize and the second to win the Peace Prize after Mother Teresa.

S51. Ans.(b)
Sol.
Let the CP = 100

92   110.5

18.5 $\longrightarrow$ 92.5

1 $\longrightarrow$ 5

100 $\longrightarrow$ 500

CP = 500

to gain 12 %

$= 500 + \frac{500 \times 12}{100}$

$= 560$

S52. Ans.(b)
Sol.
P = 15000

CI = 16%

CI for I year = 150×16

= 2400

II year = 2400 + 384

III year = 2400 + 768 + 61.44

Difference between II and III year = 445.44

S53. Ans.(c)
Sol.

$= \left(5 + \frac{3}{5} \times 5\right) \div \left(\frac{3}{18}\right) \text{ of } \left(4 \times \frac{4}{16} + \frac{4}{4} \times 4\right)$

$= 8 \div \frac{1}{6} \text{ of } 5$

$= \frac{8}{5} \times 6$

$= \frac{48}{5}$

$= 9\frac{3}{5}$

S54. Ans.(a)
Sol. Average of 13 number = 80

First 5 number = 74.5

Next five no. = 82.5

= -5.5×5 + 2.5× 5

= -27.5 + 12.5

= -15 (15 is add in reamaning three no.)

Let 13th no. = x

12th no. = x - 6
11th no. = x
Sum of 3 number = 240 + 15
3x – 6 = 240 + 15
3x = 261
X = 87
Average of 11th and 13th no. $= \frac{87+87}{2}$
= 87

S55. Ans.(d)
Sol. Let CP = 100
MP = 140
Discount = 25%
SP $= 140 - \frac{140 \times 25}{100} = $ 140-35
SP = 105
Profit $= \frac{5}{100} \times 100$
= 5%

S56. Ans.(a)
Sol. $(a + b + c)^2 = 20 + 2 \times 8$
$= 20 + 16 = 36$
a+b+c =6
find the value ,
$\frac{1}{2} \times 6[2a^2 + 2b^2 + 2c^2 - 2(ab + bc + ca)]$
$= 3[2 \times 20 - 2 \times 8]$
$= 3[40 - 16] = 72$

S57. Ans.(c)
Sol. $\frac{\sin\theta - \cos\theta + 1}{\sin\theta + \cos\theta - 1} = ?$
Put θ = 45°
$= \frac{\frac{1}{\sqrt{2}} - \frac{1}{\sqrt{2}} + 1}{\frac{1}{\sqrt{2}} + \frac{1}{\sqrt{2}} - 1}$
$= \frac{1}{\sqrt{2} - 1} \times \frac{\sqrt{2} + 1}{\sqrt{2} + 1}$
$= \frac{\sqrt{2} + 1}{2 - 1}$
$= \sqrt{2} + 1$
Checking options
in option(c) $\rightarrow \sqrt{2} + 1$

S58. Ans.(c)
Sol. Let income of B = 100
A = 150
A is increase by 40% = $150 + \frac{150 \times 40}{100}$
= 210
B is increase by 90 % = 100+90
= 190
Sum of increase income = 400
Percentage increase = $\frac{150}{250} \times 100$
= 60%

S59. Ans.(d)
Sol. AR = 5 = AP
PB = 7 = BQ
RC = 6 = QC
So, BC = BQ + QC
= 7 + 6
BC = 13
Perimeter = 12+11+13
= 36cm.

S60. Ans.(c)
Sol. $\frac{(2x)^3 - (3y)^3}{(2x - 3y)} = Ax^2 + Bxy + Cy^2$
$4x^2 + 9y^2 + 6xy = Ax^2 + Bxy + Cy^2$
Comparing both sides
A = 4, B = 6, C = 9
= (8+6-9)
= 5

S61. Ans.(d)
Sol. No. is divisible by 88
So it is divisible by 8 and 11
= $\frac{4y2}{8}$
y = 3, 7
2 0 7 4 x 4 3 2
2   3   x-4   1
= x – 4 + 6
= x + 2
So x should be 9
y = 3
(4x+3y)
= 4×9+3×3
= 36+9
= 45

S62. Ans.(d)
Sol.

A = 1 ───────── 10

B = 2 ───── 10   5

C = 1$\frac{1}{4}$ ⇒ $\frac{5}{4}$ ──── 8

At 9am, A and C are open
= 10 – 8
= 2
In 2 hour = 4
A is closed and B is on = 5 – 8
= -3
= 3 unit out
time ⇒ $\frac{4}{3} = 1\frac{1}{3}$ = 1h 20min
so in next 1h 20min, tank is empty
total h = 2+1h 20min
= 3h 20min
9am + 3h 20min = 12.20pm

S63. Ans.(b)
Sol.

AB = BC
Then ∠ACB = ∠ BAC
∠ BCA = 30°
In ΔABC
∠ABP = 50° (∵ A+B+C = 180)
So
∠ACD=∠ABD = 50° (angles on same chord)

S64. Ans.(a)
Sol. $\frac{54}{270} \times 360$
= 18×4
= 72°

S65. Ans.(c)

Sol. ATQ.

$$\frac{21-x}{22-x} = \frac{60-x}{64-x}$$

$21 \times 64 - 21x - 64x + x^2 = 60 \times 22 - 22x - 60x + x^2$

$21 \times 64 - 60 \times 22 = 85x - 82x$

$1344 - 1320 = 3x$

$24 = 3x$

$x = 8$

mean proportional between

9 and 64

$$\frac{9}{x} = \frac{x}{64}$$

$x^2 = 9 \times 64$

$x = 3 \times 8$

$x = 24$

S66. Ans.(a)

Sol. Average of D $= \frac{285}{5}$

$= 57$

E in 2018 $= 70$

Percentage $= \frac{13}{70} \times 100$

$= \frac{130}{7} \Rightarrow 18.57$

S67. Ans.(b)

Sol. Production of type B $= 54+45+47+50+40$

$= 236$

Production of type A, B and D in 2017

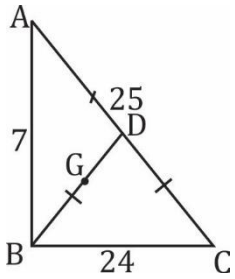$= 43+50+67$

$= 160$

$= \frac{236-160}{160} \times 100$

$= \frac{76}{16} \times 10$

$= \frac{95}{2}$

$= 47.5$

S68. Ans.(b)
Sol.

In right angle triangle
ΔABC
AD = CD =BD
Median divide hypotenuse in equal two parts
$AD = CD = \frac{25}{2} = BD$
$BG = \frac{2}{3} \times BD$
$= \frac{2}{3} \times \frac{25}{2}$
$= \frac{25}{3} = 8\frac{1}{3}$ cm

S69. Ans.(d)
Sol.
$\sqrt{(x^2 - y^2)^2}$
$= x^2 - y^2$
$= a^2 + \frac{1}{a^2} + 2 - a^2 - \frac{1}{a^2} + 2$
$= 4$

S70. Ans.(a)
Sol.
R = 9
r = ?
h = 1.4m = 140cm
V = 7480cm³
$\pi (R^2 - r^2)h = 7480$
$\frac{22}{7}(81 - r^2)140 = 7480$
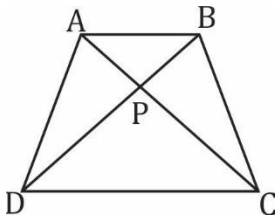$81 - r^2 = 17$
$r^2 = 64$
r = 8
thickness = R - r
= 9 – 8
= 1cm

S71. Ans.(b)
Sol.

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

$$= \frac{1}{\sin\theta.\cos\theta} \times \sqrt{\frac{\sin^2\theta(1-\cos^2\theta)}{\cos^2\theta}}$$

$$= \frac{1}{\sin\theta.\cos\theta} \times \frac{\sin\theta.\sin\theta}{\cos\theta} = \sin\theta.\sec^2\theta$$

S72. Ans.(b)
Sol.

AP = 3x - 1

PC = 5x - 3

BP = 2x + 1

PD = 6x - 5

$$\frac{AP}{PC} = \frac{BP}{PD}$$

(3x-1) (6x-5) = (2x+1) (5x - 3)

$18x^2 - 21x + 5 = 10x^2 - x - 3$

$8x^2 - 20x + 8 = 0$

$2x^2 - 5x + 2 = 0$

$2x^2 - 4x - x + 2 = 0$

2x (x-2) -1 (x-2) = 0

x = 2, ½

PD = 12-5 = 7

BP = 5

DB = 12cm

S73. Ans.(a)
Sol. $12\cot^2\theta - 31\mathrm{cosec}\theta + 32 = 0$

$12\cos^2\theta - 31\sin\theta + 32\sin^2\theta = 0$

$12 - 12\sin^2\theta - 31\sin\theta + 32\sin^2\theta = 0$

$20\sin^2\theta - 31\sin\theta + 12 = 0$

$20\sin^2\theta - 16\sin\theta - 15\sin\theta + 12 = 0$

$4\sin\theta (5\sin\theta - 4) - 3 (5\sin\theta - 4) = 0$

$\sin\theta = \frac{4}{5}, \frac{3}{4}$

when $\sin\theta = \frac{4}{5}$

$\tan\theta = \frac{4}{3}$

when $\sin\theta = \frac{3}{4}$

$\tan\theta = \frac{3}{\sqrt{7}}$

$\tan\theta = \frac{3}{\sqrt{7}}$ or $\frac{3\sqrt{7}}{7}$

S74. Ans.(c)

Sol. $t_1 = \frac{49}{8}$

$t_2 = 8$

$s_1 = ?$

$s_2 = 16.8$

$s_1 = s_2 \sqrt{\dfrac{t_2}{t_1}}$

$= 16.8 \times \sqrt{\dfrac{8 \times 8}{49}}$

$= 16.8 \times \dfrac{8}{7}$

$= \dfrac{134.4}{7}$

$= 19.2 \text{ km/h}$

S75. Ans.(d)

Sol.

$\dfrac{53 + 67}{47 + 43}$

$= 120 : 90$

$= 4 : 3$

S76. Ans.(a)

Sol. **Apiary** : a place where bees are kept; a collection of beehives

Stable : A stable is a building in which livestock, especially horses, are kept.

Sanctuary : A place where birds or animals can live and be protected, especially from being hunted or dangerous conditions.

S77. Ans.(b)

Sol. Replace "it improve" with "it will improve". This is a first conditional sentence. The format of first conditional is (IF + simple present, simple future).

S78. Ans.(a)
Sol. **Give someone the cold shoulder** means to intentionally ignore someone or treat someone in an unfriendly way.

S79. Ans.(b)
Sol. **Eminent** means (of a positive quality) present to a notable degree.
Inconspicuous means not clearly visible or attracting attention.

S80. Ans.(b)
Sol. **Basilica** is a large oblong hall or building with double colonnades and a semicircular apse, used in ancient Rome as a law court or for public assemblies.
Slab a large, thick, flat piece of stone or concrete, typically square or rectangular in shape.
Pillar is a strong column made of stone, metal, or wood that supports part of a building.

S81. Ans.(b)
Sol. The phrase **'Pull Yourself Together'** means to get control of your emotions and actions.

S82. Ans.(c)
S83. Ans.(a)
S84. Ans.(b)
S85. Ans.(a)
S86. Ans.(d)

S87. Ans.(d)
Sol. Correct spelling is **Experience** which means practical contact with and observation of facts or events.

S88. Ans.(c)
Sol. Correct active voice is "**They brought up their children with great care**".

S89. Ans.(d)

S90. Ans.(b)
Sol. The noun following the phrase "one of the" is always a plural noun, whereas use of verbs as singular or plural will entirely depend upon the subject of the statement. So, replace "tropical cyclone" with "tropical cyclones".

S91. Ans.(b)
Sol. Use **present perfect continuous** as the process of solving the problem started 2 hours ago (in the past) and still continues. Thus option B is correct.

S92. Ans.(c)
Sol. INDELIBLE: (of ink or a pen) making marks that cannot be removed.
Illegal means contrary to or forbidden by law, especially criminal law.
Illegible means not clear enough to be read.
Ineffective means not producing any significant or desired effect.

S93. Ans.(c)
Sol. Agony: extreme physical or mental suffering.
Anxiety means a feeling of worry, nervousness, or unease about something with an uncertain outcome.
Distress means extreme anxiety, sorrow, or pain.
Misery means a state or feeling of great physical or mental distress or discomfort.

S94. Ans.(d)
Sol. Replace "were" with "was". We use every + singular noun to refer individually to all the members of a complete group of something. The verb that follows is of singular nature hence, the error is in option (d).

S95. Ans.(d)
S96. Ans.(a)

S97. Ans.(c)
Sol. Correct passive form is "**Let the outer gate be locked at night**"

S98. Ans.(b)
Sol. Triumph means a great victory or achievement.

S99. Ans.(a)

S100. Ans.(a)
Sol. Correct spelling is **contemporary** which means living or occurring at the same time.