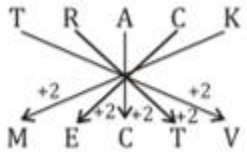
Solution

S1. Ans.(c)
Sol. Team contains player similarly, council contains minister.

S2. Ans.(b)
Sol.



similarly,

+2 in every letter.

S3. Ans.(a)
Sol.
850 = 8 + 5 + 0 =13
850 + 13 = 863
430 = 4 + 3 + 0 =7
430 + 7 = 437

S4. Ans.(a)
Sol. Cotton is different from others because cotton is not eatable.

S5. Ans.(d)
Sol. C and X is opposite letter, then X is the addition +3 in letter A, that sequence followed in each options, except (d) HSU.

S6. Ans.(b)
Sol.
$6 \times 4 = 24 \Rightarrow 24^2 = 576$
$3 \times 2 = 6 \Rightarrow 6^2 = 36$
$2 \times 7 = 14 \Rightarrow 14^2 = 196$
But
$1 \times 7 \Rightarrow 7^2 \neq 343$

S7. Ans.(b)
Sol.
Correct sequence is —
Yakking, Yakuzas, Yangtze, Yobbery, Yobbish
23145

S8. Ans.(b)

Sol.

A + K = 1 + 11 = 12

G + V = 7 + 22 = 29

P + O = 16 + 15 = 31

S9. Ans.(c)

Sol.

21, 26, 33, 42, 53, 66

5 7 9 11 13

S10. Ans.(b)

Sol.

Ratio of present age of Pankaj and Punit = 5 : 6

and given the sum of their age = 33

So, 5 + 6 = 11 ratio = 33

1 ratio = 3

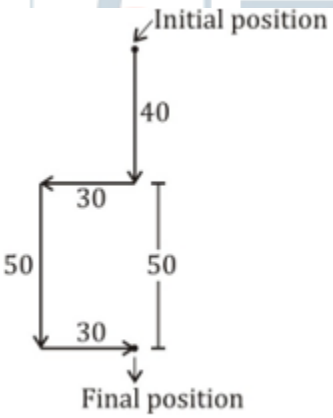
So, difference between age = 6 – 5

= 1 ratio

= 3 year

S11. Ans.(d)

Sol.



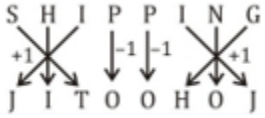
⇒ Total distance = 50 + 40 = 90 m

S12. Ans.(c)

Sol. Only SALTY word cannot be derived with CONSOLIDATE

S13. Ans.(d)

Sol. S – T, T – U, U – V , O- P ,R- S, N- O means in starting 3 and last 3 having +1 in each letters And in middle 2 letters -1 gap is there in letters.



S14. Ans.(c)

Sol.

$7 \times 6 + 5 - 4 = 33$

By using option (c)

$7 \times 5 - 6 + 4 = 33$

$35 - 2 = 33$

S15. Ans.(d)

Sol.

$\frac{3}{3} \times 3 = 3,\ \frac{48}{4} \times 3 = 36$ and $\frac{91}{13} \times 2 = 14$

S16. Ans.(a)

Sol.

$\Rightarrow 12 \times 13 = 156$

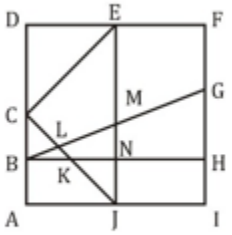
$\Rightarrow \frac{154}{14} = 11$

$\Rightarrow 15 \times 13 = 195$

S17. Ans.(c)

Sol.

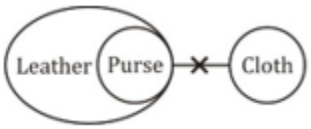
Total triangles = 2 + 1 + 3 + 1 + 2 + 1 = 10



⇒ Δ DEC, ΔCJA, ΔBLK, ΔBMN, ΔBHG, ΔCEJ, ΔNKJ, ΔJLM, ΔBLC, ΔCBK

S18. Ans.(b)

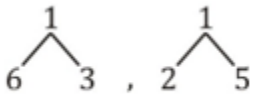
Sol.



1. ×
2. ×
3. ✓

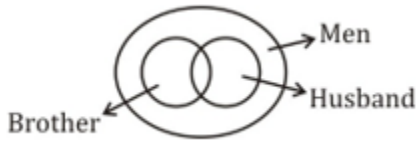
S19. Ans.(c)

Sol.



So, remaining digit in dice is 4.

S20. Ans.(b)
Sol.



S21. Ans.(d)
S22. Ans.(b)
S23. Ans.(b)
S24. Ans.(a)
S25. Ans.(c)

S26. Ans.(a)
Sol. The law of demand is a microeconomic law that states, all other factors being equal, as the price of a good or service increases, consumer demand for the good or service will decrease, and vice versa. But in Gifffen Goods a higher price causes an increase in demand (reversing the usual law of demand). The increase in demand is due to the income effect of the higher price outweighing the substitution effect.

S27. Ans.(a)
Sol. An oligopoly is a market form where in a market or industry is dominated by a small number of sellers and large number of buyers. A monopoly is a form of market having one or two firms dominate the market but there are large number of buyers. In Perfect Competition Market there are large number of sellers and buyers.

S28. Ans.(b)
Sol. The Constitution guarantees six fundamental rights to Indian citizens as follows: (i) right to equality, (ii) right to freedom, (iii) right against exploitation, (iv)right to freedom of religion, (v) cultural and educational rights, and (vi) right to constitutional remedies.

S29. Ans.(b)
Sol. The 44th amendment of the constitution took place in 1978 and article 359 was amended and it provided that article 20&21 could not be suspended even during declaration of emergency.

S30. Ans.(a)
Sol. Charles John Canning was the first viceroy of India.He was Governor General of India from 1856 and after passing of Government of India Act 1858 which created office of Viceroy, he became the first Viceroy of India.

S31. Ans.(b)
Sol. The Nyaya Sutras is an ancient Indian Sanskrit text composed by Akṣapada Gautama, and the foundational text of the Nyaya school of Hindu philosophy.

S32. Ans.(d)
Sol. The Mariana Trench or Marianas Trench is the deepest part of the world's oceans. It reaches a maximum-known depth of 10,994 metres (36,070 ft).It is in the pacific ocean.

S33. Ans.(a)
Sol. The Maasai are a Nilotic ethnic group inhabiting southern Kenya and northern Tanzania. They are among the best known local populations due to their residence near the many game parks of the African Great Lakes, and their distinctive customs and dress

S34. Ans.(c)
Sol. A pacemaker is a small device that's placed in the chest or abdomen to help control abnormal heart rhythms. This device uses electrical pulses to prompt the heart to beat at a normal rate.

S35. Ans.(b)
Sol. Hemoglobin is the protein molecule in red blood cells that carries oxygen from the lungs to the body's tissues and returns carbon dioxide from the tissues back to the lungs.

S36. Ans.(b)
Sol. Anemia is a condition in which person don't have enough healthy red blood cells to carry adequate oxygen to the body's tissues. Iron deficiency anemia is caused by a shortage of iron in body. Bone marrow needs iron to make hemoglobin. Without adequate iron, body can't produce enough hemoglobin for red blood cells.

S37. Ans.(c)
Sol. Echo is a reflection of sound that arrives at the listener with a delay after the direct sound.The reflecting object must be more than 17m from the sound source for echo to be perceived by a person located at the source.

S38. Ans.(d)
Sol. A black board appears black because it absorbs all the colors of white light and reflects none.

S39. Ans.(d)
Sol. A motherboard (sometimes alternatively known as the mainboard, system board, baseboard, planar board or logic board) is the main printed circuit board (PCB) found in general purpose microcomputers and other expandable systems. It holds and allows communication between many of the crucial electronic components of a system, such as the central processing unit (CPU) and memory, and provides connectors for other peripherals.

S40. Ans.(a)
Sol. Galvanisation is the process of applying a protective zinc coating to iron or steel, to prevent rusting. The most common method is hot dip galvanizing, in which steel sections are submerged in a bath of molten zinc.

S41. Ans.(a)
Sol. Dry ice, sometimes referred to as "cardice", is the solid form of carbon dioxide. It is used primarily as a cooling agent. Its advantages include lower temperature than that of water ice and not leaving any residue. It is useful for preserving frozen foods where mechanical cooling is unavailable.

S42. Ans.(c)
Sol. An ecosystem is a community of living organisms in conjunction with the nonliving components of their environment, interacting as a system. These biotic and abiotic components are regarded as linked together through nutrient cycles and energy flows and thus represent the most complex trophic level.

S43. Ans.(b)
Sol. Andhra Pradesh is the first and only State in India providing of "Health for All" with an objective of providing quality health to the entire population of the State by launching "Aarogya Raksha".

S44. Ans.(a)
Sol. Wilhelm Conrad Roentgen, a German professor of physics, was the first person to discover electromagnetic radiation in a wavelength range commonly known as X-rays today.

S45. Ans.(c)
Sol. In Water Polo, each team made up of six field players and one goalkeeper. Except for the goalkeeper, players participate in both offensive and defensive roles. Water polo is typically played in an all-deep pool seven feet (or two meters) deep.

S46. Ans.(a)
Sol. Lavani is a genre of music popular in Maharashtra.Lavani is a combination of traditional song and dance, which particularly performed to the beats of Dholki, a percussion instrument. Lavani is noted for its powerful rhythm. Lavani has contributed substantially to the development of Marathi folk theatre.

S47. Ans.(d)
Sol. The Asian Awards is an award ceremony which takes place in the United Kingdom that recognises and rewards exemplary achievement across 14 categories that include business, philanthropy, entertainment, culture and sport. Anil Agarwal (founder chairman of Vedanta Resources) chosen as enterpreneuer of the year 2016 for Asian Awards.

S48. Ans.(a)
Sol. Azad Bachpan ki Aur is the first hindi book written by 2014 Nobel Peace Prize Winner Kailash Satyarthi.It is a book on articles written by Kailash Satyarthi about landmark movements, judgments, events and prominent policy intervention in his three-decade-long struggle for child rights.

S49. Ans.(c)

Sol. India will organise the fifth edition of the mega cultural festival 'India by the Nile' in Egypt to showcase the diversity of the country's culture, arts and cuisine for building enduring partnership between the two ancient civilization. This year India is celebrating 70 years of independence as well as 70 years of diplomatic relations with Egypt.

S50. Ans.(b)

Sol. Sheikh Hasina Wazed is the current Prime Minister of Bangladesh, in office since January 2009.Sheikh Hasina political career has spanned more than four decades.

S51. Ans.(b)

Sol.

$$\frac{12}{(\sqrt{5}+\sqrt{3})}+\frac{18}{(\sqrt{5}-\sqrt{3})}$$

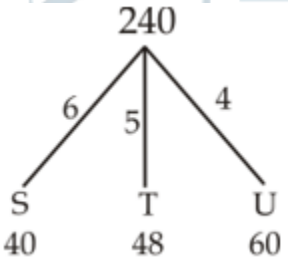
$$\Rightarrow \frac{12(\sqrt{5}-\sqrt{3})+18(\sqrt{5}+\sqrt{3})}{2}$$

$$\Rightarrow 6\sqrt{5}-6\sqrt{3}+9\sqrt{5}+9\sqrt{3}$$

$$\Rightarrow 3(5\sqrt{5}+\sqrt{3})$$

S52. Ans.(d)

Sol.



Total work = 240

⇒ work done by S in last two days = 12

⇒ work done by S & T in last 3 days after S two days = (6 + 5) ×3 = 33

So, remaining work to be completed by S, T & U = 240 − (12 + 33) = 195

So, No of days taken by S, T & U = $\frac{195}{(6+5+4)}$ =13

So,

Received amount is accordingly to efficiency and number of day

S : T : U = 18 × 6 : 16 × 5 : 13 × 4

= 108 : 80 : 52

So,

S's share ratio = $\frac{10800}{240} \times 108 = 4860$

S53. Ans.(c)

Sol. Required amount

$= \frac{1}{2}$ (sum of parallel side) × height * cost

$= \frac{1}{2}(2.56 + 3.44) \times 1.44 \times 1800$

= 7776

S54. Ans.(c)

Sol. Marked price

$= \frac{1599}{82} \times 100 = 1950$

S55. Ans.(d)

Sol. Given that,

$\frac{D}{S} = 1.5$ ..(i)

and,

W = S – 600 ..(ii)

and,

3S + 2D + W = 19000 ..(iii)

$3S + 2 \times \frac{3}{2}S + (S - 600) = 19000$

7S = 19600

$\Rightarrow 3S = \frac{19600}{7} \times 3 = 8400$

S56. Ans.(c)

Sol.

Let 3 consecutive even number = 2, 4, 6

& it's average $= \frac{2+4+6}{3} = 4$

and next 5 even number = 8, 10, 12, 14, 16

& it's average $= \frac{8+10+12+14+16}{5} = 12$

& total average of 8 number $= \frac{72}{8} = 9$

So, its increment = (A + 5)

S57. Ans.(c)

Sol.

We know that

If he sells in 50% loss for article

= 18450

So, if he want to earn 50% profit then

= 18450 × 3 = 55350

S58. Ans.(a)

Sol. $2\% = \frac{102}{100} = \frac{51}{50}$

$$\begin{array}{cc} 50 & 51 \\ 50 & 51 \\ \hline 2500 & 2601 \end{array}$$

So, given that amount after 2 year ago = 26010
It is compared with amount of ratio it is
to times its's original value
So, population before 2 year ago = 2500 × 10= 25000

S59. Ans.(d)

Sol. Relative speed $= \frac{\text{Distance}}{\text{Time}}$
when in opposite direction speed $(S_1 + S_2)$
So,
Speed of another train S_2

$$(40 + S_2) = \frac{(100 + 150)}{9} \times \frac{18}{5}$$

$S_2 = 60$ km/hr

S60. Ans.(d)

Sol. Rate = 20% per half/year

$$\begin{array}{ccc} & 5 & 6 \\ \text{Actual Amount} & 5 & 6 \\ 20{,}000 \xleftarrow{\times 800} & \frac{5}{25} & \frac{6}{36} \end{array}$$

11

So, compound interest = 800 × 11 = 8800

S61. Ans.(b)

Sol. Roots of given equation
x = 5, 3
And
y = 5, –7
So, common root = 5
So, difference of cube and square of common roots
= 125 – 25 = 100

S62. Ans.(b)

Sol.

$x = \frac{1}{3}, y = 4$

So,

$$\frac{y + x}{y - x} = \frac{4 + \frac{1}{3}}{4 - \frac{1}{3}} = \frac{13}{11}$$

S63. Ans.(d)

Sol.

$x^2 + \frac{1}{x^2} = 6 \Rightarrow x^4 + 1 = 6x^2$

$x^4 - 6x^2 + 1 = 0$

So, Put $x^2 = y$

$y^2 - 6y + 1 = 0$

$y = 3 \pm 2\sqrt{2}$

$x^2 = 3 \pm 2\sqrt{2}$

$x = \sqrt{3 + 2\sqrt{2}} = (\sqrt{2} + 1)$

And,

$x = \sqrt{3 - 2\sqrt{2}} = (\sqrt{2} - 1)$

So, it's roots are = $\pm\left(\sqrt{2} + 1\right) \pm \left(\sqrt{2} - 1\right)$

So, the difference $[\sqrt{2} + 1 - \sqrt{2} + 1 - \sqrt{2} + 1 + \sqrt{2} + 1] = 4$

S64. Ans.(c)

Sol.

$x + \frac{1}{x} = \sqrt{13} \quad \Rightarrow x^2 + \frac{1}{x^2} = 11$

$\left(x - \frac{1}{x}\right) = 3$

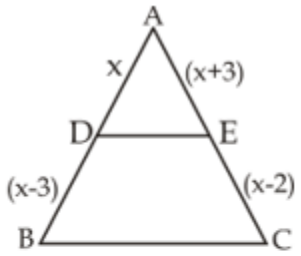
$\left(x^2 + \frac{1}{x^2}\right)\left(x^3 - \frac{1}{x^3}\right) = \left(x^5 - \frac{1}{x^5}\right) - \left(x - \frac{1}{x}\right)$

$\Rightarrow x^3 - \frac{1}{x^3} - 3 = 27 + 9 = 36$

So, required value, $\left(x^5 - \frac{1}{x^5}\right) = 11 \times 36 - 3 = 393$

S65. Ans.(d)

Sol.



from property

$\frac{AD}{DB} = \frac{AE}{EC}$

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

$x = \frac{9}{2} = 4.5$

S66. Ans.(c)

Sol.

$$S = \frac{18+24+30}{2} = 36$$

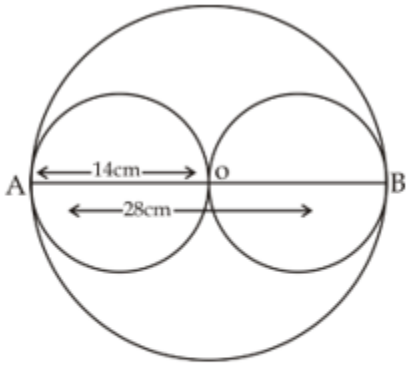
Area of triangle $= \frac{4}{3}\sqrt{s(s-a)(s-b)(s-c)}$

$= \frac{4}{3} \times \sqrt{36(6)(12)(18)}$

$= 288\ cm^2$

S67. Ans.(c)

Sol.



So, required area

$= [\pi R^2 - (2\pi r^2)] = \left[\frac{22}{7} \times 14 \times 14 - 2 \times \frac{22}{7} \times 7 \times 7\right]$

$= 616 - 308$

$= 308$

S68. Ans.(c)

Sol. From Gergonne theorem,

$$\frac{OE}{AE} + \frac{OD}{CD} + \frac{OF}{BF} = 1$$

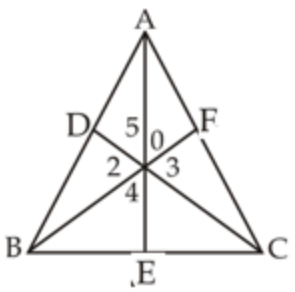
$$\frac{4}{9} + \frac{2}{5} + x = 1$$

$$x = \frac{OF}{BF} = 7/45$$

BO/OF =38/7

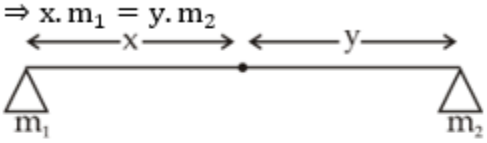
ALTERNATE SOLUTION:

By mass point theorem–



$\frac{m_1}{m_2} = \frac{y}{x}$

$\Rightarrow x.m_1 = y.m_2$



⇒ We take the point value of 0 = 45

Because that is the multiple 5 & 9 = 45

So, at point A the value is AE = 45 ⇒ OA = 25, OE = 20

At point C the value is CD = 45 ⇒ OC = 27, OD = 18

So, point value at point A = 20 , E=25 & C = 18

So, at point F the value = 20+18 =38

And, at point B = value of point E- value of point C = 25 – 18 = 7

BO x 7 = OF x 38

So, $\frac{BO}{OF} = \frac{38}{7}$

S69. Ans.(a)

Sol.

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

$$= \frac{2}{2\sin\frac{\theta}{2}\cos\frac{\theta}{2}} = \frac{2}{\sin\theta} = 2\text{cosec}\theta$$

S70. Ans.(d)

Sol.

$$\frac{(\sec^3 x - \tan^3 x)}{(secx - tanx)} - 2\tan^2 x - secx\ tanx$$

$= [\sec^2 x + \tan^2 x + \sec x \tan x] - 2\tan^2 x - \sec x \tan x$

$= \sec^2 x - \tan^2 x = 1 + \tan^2 x - \tan^2 x = 1$

S71. Ans.(d)

Sol.

$\sin^2\theta + \cos^2\theta = 1$ (Squaring both sides)

$\Rightarrow \sin^4\theta + \cos^4\theta = 1 - 2\sin^2\theta \cos^2\theta$ (again squaring)

$\Rightarrow \sin^8\theta + \cos^8\theta + 2\sin^4\theta.\cos^4\theta = 1 + 4\sin^4\theta.\cos^4\theta - 4\sin^2\theta\cos^2\theta$

$\Rightarrow \sin^8\theta + \cos^8\theta - 1 = 2\sin^4\theta.\cos^4\theta - 4\sin^2\theta.\cos^2\theta$

$0 = 2\sin^4\theta . \cos^4\theta - 4\sin^2\theta \cos^2\theta$

$\sin^2\theta \cos^2\theta = 2$

S72. Ans.(b)

Sol. Highest marks in Mathematics = 475

English = 407

Science = 471

Hindi = 439

S73. Ans.(c)

Sol.

max marks in all the 4 subjects
Student 1 = 354
Student 2= 356
Student 2 = 379
Student 4 = 338
Student 5 = 365

S74. Ans.(b)

Sol.

According to the given condition
the marks ⇒ Student 1 = 373
Student 2 = 382
Student 3 = 390
Student 4 = 376
Student 5 = 379

S75. Ans.(c)

Sol. Required Percentage

$$= \frac{\frac{407}{5}}{\frac{439}{5}} \times 100 = 92.71\%$$

S76. Ans. (a)

Sol. It should be "My sister-in law" instead of "My sister-in-laws".

S77. Ans. (a)

Sol. It should be "kinds of" instead of "kind of" because "these" is plural determiner which makes the noun plural in front of it.

S78. Ans. (c)

Sol. Concede means admit or agree that something is true after first denying or resisting it.

S79. Ans. (a)

Sol. "swear in : to make someone give a formal promise in a law court or at an officialceremony"

S80. Ans. (b)

Sol. Cantankerous means bad-tempered, argumentative, and uncooperative. **Quarrelsome** means given to or characterized by quarrelling.

S81. Ans. (c)

Sol. Connoisseur means an expert judge in matters of taste. Hence **Discerning Judge** is the correct choice.

S82. Ans. (d)
Sol. Nugatory means of no value or importance and **Productive** means producing or able to produce large amounts of goods, crops, or other commodities.

S83. Ans. (a)
Sol. Naïve means (of a person or action) showing a lack of experience, wisdom, or judgement and **artful** means clever or skilful, especially in a crafty or cunning way.

S84. Ans. (b)
Sol. Mealy-mouthed means hesitant or unwilling to state something bluntly and directly, especially facts or opinions that are considered divisive or controversial.

S85. Ans. (d)
Sol. By fits and starts means in short, inconsistent, and irregular intervals, as of motion or progress.

S86. Ans. (b)
Sol. We need to write main verb "helped" and its object "her" after helping verb "had" and then "not only " and "but also" should be introduced.

S87. Ans. (a)
Sol. 'ago' is used with past indefinite tense thus 'finished' should be used instead of "had finished".

S88. Ans. (b)
Sol. Blasphemy means the action or offence of speaking sacrilegiously about God or sacred things; profane talk.
Atheist means a person who disbelieves or lacks belief in the existence of God or gods.
Bellicose means demonstrating aggression and willingness to fight.

S89. Ans. (d)
Sol. Egotist means a person who is excessively conceited or absorbed in themselves; self-seeker.
Elite means a select group that is superior in terms of ability or qualities to the rest of a group or society.
Emetic means a medicine or other substance which causes vomiting.

S90. Ans. (d)
Sol. Sovereignty means the authority of a state to govern itself or another state.

S91. Ans. (b)
Sol. Perseverance means persistence in doing something despite difficulty or delay in achieving success.

S92. Ans. (a)
Sol. The correct arrangement is, "RSQP"

S93. Ans. (c)
Sol. The correct arrangement is, "RSQP"

S94. Ans. (c)
Sol. The correct voice is, "Why is money wasted by you?"

S95. Ans. (a)
Sol. The correct narration is, "**The doctor wanted to know what he could do for her.**"

S96. Ans. (a)
Sol. Tremendous

S97. Ans. (b)
Sol. Unprecedented

S98. Ans. (c)
Sol. Bleak

S99. Ans. (d)
Sol. True

S100. Ans. (a)
Sol. prone