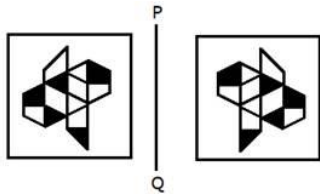


6546, SOLUTION, SSC CGL

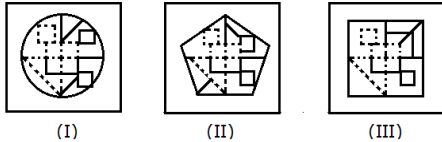
Ques 1. ANS (C) Solution:

Figure III is the correct mirror image of the given figure.



Ques 2. ANS (D) Solution:

Here, the figure is not embedded in figure (IV).



Ques 3. ANS (B) Solution:

'2567' is coded as 'BEFG' and '1428' is coded as 'ADBH'.

Here, in the numbers '2567' and '1428', the digits are replaced by the positional values of the alphabets.

A	B	C	D	E	F	G	H	I	J	K	L	M
1	2	3	4	5	6	7	8	9	10	11	12	13
Z	Y	X	W	V	U	T	S	R	Q	P	O	N
26	25	24	23	22	21	20	19	18	17	16	15	14

So, 3879 will be coded as CHGI.

Ques 4. ANS (D) Solution:

There are seven seats in a row numbered from 1 to 7 from west end. A, B, C, D, E, F and G are sitting in a row and facing north.

A, B and C are sitting on even numbered seats.

Statement I: D is to the immediate right of B. Three persons are sitting between A and B. A sits to the right of B.

1	2	3	4	5	6	7
	B	D			A	

F is between E and G.

1	2	3	4	5	6	7
E/G	B	D	C	F	A	E/G

So, F is sitting on the 5th seat.

Thus, statement I alone is sufficient.

Statement II: F is to the third left of A. Three persons are sitting between F and G.

	1	2	3	4	5	6	7
Case 1	F			A	G		
Case 2			F			A	G

Thus, statement II alone is not sufficient.

Ques 5. ANS (D) Solution:

The series will be:

x y z a bc xyz a b c

The pattern is xyz-abc-xyz-abc

Ques 6. ANS (C) Solution:

Ques 7. ANS (C) Solution:

$(33 + 52 + 11) \times 2 = 192$; $(27 + 19 + 32) \times 2 = 156$.

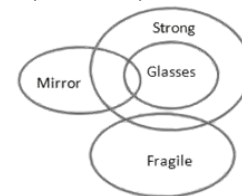
Similarly, $(18 + 22 + 25) \times 2 = 130$

Ques 8. ANS (A) Solution:

$19 + 2 \times 2 = 23$, $23 + 3 \times 3 = 32$, $32 + 4 \times 4 = 48$, $48 + 5 \times 5 = 73$, $73 + 6 \times 6 = 109$

Ques 9. ANS (A) Solution:

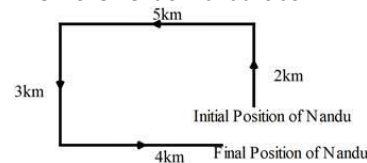
A possible representation is:



Thus only Conclusion (a) follows only.

Ques 10. ANS (B) Solution:

The movement of nandu is as:



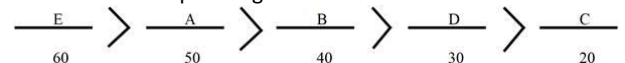
So Nandu is southwest of his initial position.

Ques 11. ANS (C) Solution:

Only one car had speed greater than car A.



Car D had speed lower than car B but greater than the speed of car C. Car E had speed higher than car B.



Ques 12. ANS (D) Solution:

From (a): $14 \times 18 = 3 - (24 \div 16)$

LHS = $14 \times 18 = 252$

RHS = $3 - (24 \div 16) = 3 - (3/2) = 3/2$

So, (a) is not correct.

From (b): $14 = 18 \div 3 \times (24 - 16)$

LHS = 14

RHS = $18 \div 3 \times (24 - 16) = 18 \div 3 \times 8 = 6 \times 8 = 48$

So, (b) is not correct.

From (c): $14 \times 18 \div 3 = (24 - 16)$

LHS = $14 \times 18 \div 3 = 14 \times 6 = 84$

RHS = $(24 - 16) = 8$

So, (c) is not correct.

From (d): $14 = 18 \times 3 - (24 + 16)$

LHS = 14

RHS = $18 \times 3 - (24 + 16) = 18 \times 3 - 40 = 54 - 40 = 14$

So, (d) is correct.

Ques 13. ANS (D) Solution:

The position values of the alphabets are used where A=1, B=2, C=3 and so on

A(1) x B(2)=B(2)

B(2) x C(3)=F(6)

C(3) x D(4)=L(12)

D(4) x E(5)= T(20) and not S(19).

Ques 14. ANS (D) Solution:

A (BC) D (EFGH) I (JK) L (MNOP) Q

R (STUV) W (XYZA) B (CDEF) G (HIJK) L

M (N) O (PQ) R (STU) V (WXYZ) A

Ques 15. ANS (D) Solution:

It is given that, $12c + 11b + 216d + 3b + 19$

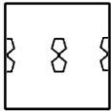
$= 12 \times 11 + 216 \div 3 + 19$

$= 132 + 72 + 19$

$= 41$

Ques 16. ANS (A) Solution:

The paper on unfolding will look like the following:



So, there will be only 2 pentagons.

Ques 17. ANS (D) Solution:

This is the correct form as per the order in dictionary.

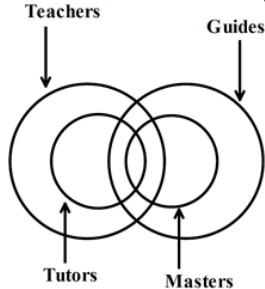
Veneration > Vengeance > Venomous > Ventilation > Ventrose

Ques 18. ANS (B) Solution:

The given statements are,

All tutors are teachers. All masters are guides. Some tutors are masters.

The basic minimum overlapping diagram is,



Here, some tutors are guides and some teachers are guides. Hence, conclusion II follows and conclusion I do not follow.

Ques 19. ANS (A) Solution:

$$10 \text{ --- } 10^2 = 100; 100 \times 3 = 300$$

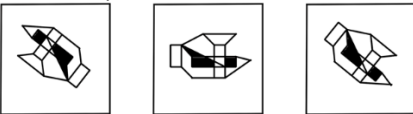
$$12 \text{ --- } 12^2 = 144; 144 \times 3 = 432$$

$$6 \text{ --- } 6^2 = 36; 36 \times 3 = 108$$

$$11 \text{ --- } 11^2 = 121; 121 \times 3 = 363$$

Ques 20. ANS (B) Solution:

Here, if the given figure is rotated by 135° in a clockwise manner and then by 315° in an anticlockwise manner, we get,

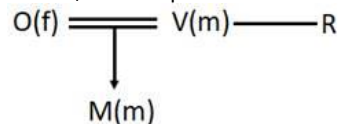


Ques 21. ANS (D) Solution:

Considering the last two sentences 'was' can be either oi or ji.

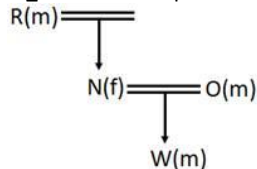
Ques 22. ANS (C) Solution:

O ∂ M $\$$ V € R implies:



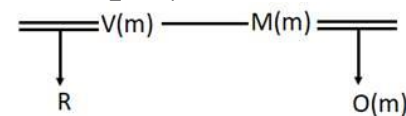
O is the sister-in-law of R, so this option is invalid.

R Σ N ∂ W $\$$ O implies:



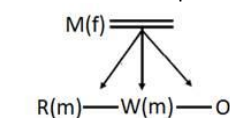
O is the son-in-law of R, so this option is invalid.

O $\$$ M € V Σ R implies:



R is the cousin of O, so this is the correct option.

R € W $\$$ M ∂ O implies:



R is the sibling of O, so this option is invalid.

Ques 23. ANS (A) Solution:

Let, the father's and son's age are $4X$ and X years respectively.

According to the question,

$$4X * X = 196$$

$$4x^2 = 196$$

$$x = 7$$

Present age of the father = 28 years

Present age of the son = 7 years

Ratio of their ages after 5 years = $(28 + 5) : (7 + 5)$

$$= 33 : 12 = 11 : 4$$

Ques 24. ANS (B) Solution:

Umpire gives decision in cricket similarly Judge gives a decision in court.

Ques 25. ANS (C) Solution:

In every pair except option (3), the sum of the first number and its cube is the second number.

$$7 + 343 = 350; 2 + 8 = 10 \text{ and } 5 + 125 = 130.$$

Ques 26. ANS (A) Solution:

Sarodi Saikia is an exponent of Sattriya dance.

Saikia received the Sangeet Natak Akademi Award in 2015. In 2022, the Government of Assam awarded the dancer the Bishnu Rabha Award.

Ques 27. ANS (C) Solution:

India have won the hockey World Cup just once. The men's team lifted the trophy in 1975. The women's team's best finish at the FIH Hockey World Cup is fourth. Since the 1970s, the Hockey World Cup has been the premier standalone tournament for the sport.

Ques 28. ANS (B) Solution:

Books	Authors
The Christmas Pig	JK Rowling
Whereabouts	Jhumpa Lahiri
The Living Mountain: A Fable for Our Times	Amitav Ghosh
Home in the World	Amartya Sen

Ques 29. ANS (C) Solution:

Near the undefined Great Basin - Mojave border lies Death Valley (now a national park), the lowest point in North America.

Ques 30. ANS (C) Solution:

Silly point is associated with cricket. Silly point is a fielding position, on the off side, square of the batsman's wicket, and very near the batsman.

Ques 31. ANS (A) Solution:

The city of Kota lies on the east bank of the river Chambal in southern Rajasthan. This view of the Chambal shows a ghat built at the base of a rocky cliff, with steps leading down to the water. Ghats were used for bathing, washing clothes, collecting water, and ceremonial purposes.

Ques 32. ANS (A) Solution:

Cheiraoba is considered one of the most important festivals of Manipur. It is celebrated with great pomp and joy, especially, by the Meiteis of the state. Usually celebrated in the month of April, it marks the beginning of the lunar new year for the Meiteis residing in Manipur and elsewhere.

While the followers of Sanamahism, Meitei's indigenous religion, celebrate it on the first day of the lunar new year, the followers of Vaishnav Hindus, celebrate it on the 13th or 14th of April every year according to the solar Hindu calendar.

Ques 33. ANS (B) Solution:

28th February is celebrated as National Science Day (NSD) in India. NSD is celebrated to commemorate discovery of the 'Raman Effect', which led to Sir C.V. Raman winning the Noble Prize.

Ques 34. ANS (B) Solution:

Weight of a body depends on mass (m) and acceleration due to gravity (g).

As the altitude on earth increases g decreases hence weight also decreases.

At the centre of the earth, g is equal to zero, hence weight is zero.

Moon's g value is 1/6th of earth's g value. Hence, weight of an object on Moon is less than that on earth.

Ques 35. ANS (D) Solution:

Microbes such as bacteria, fungi, and algae play an important role in the bioremediation of xenobiotic compounds like dyes and plastic including pesticides and insecticides like morpholine, methyl parathion, organophosphorus compounds, and benzimidazoles.

Bioremediation is a biotechnology procedure, in which microorganisms adapted to degrade pollutants from a contaminated site are stimulated to achieve a better biodegradation rate by enrichment with fertilizers and/or oxygen.

Ques 36. ANS (B) Solution:

चीन ने फेंगयुन-3 मेटेओरोलॉजिकल सैटेलाइट को सफलतापूर्वक लॉन्च करके एक महत्वपूर्ण माइलस्टोन हासिल किया है। यह सैटेलाइट जिउकान कॉस्मोड्रोम से गांसू प्रांत में स्थित चांग जैंग-4बी कैरियर रॉकेट का उपयोग करके लॉन्च किया गया था।

China has achieved an important milestone by successfully launching the Fengyun-3 meteorological satellite. The satellite was launched from the Jiuquan Cosmodrome in Gansu Province using a Chang'e Jing-4B carrier rocket.

Ques 37. ANS (C) Solution:

Combination reaction: two or more molecules combine together to form a compound.

Decomposition reaction: where a compound is break down into simple molecules.

Neutralization reaction: an acid and a base react with each other to form salt and water.

Displacement reaction: one element move from one compound to the other to form a new compound.

Ques 38. ANS (A) Solution:

The Government of India in the Union Budget 2021 announced the formation of National Asset Reconstruction Company Limited (NARCL) for aggregation and resolution of Non-Performing Assets (NPAs) in the Banking Industry. For any resolution of NPAs it acquires stressed assets of banks.

Additional Information

NARCL, a government entity, was incorporated with majority stake held by Public Sector Banks and balance by private banks with Canara Bank being the sponsor bank. It is registered with the Reserve Bank of India as an Asset Reconstruction Company under Securitisation and Reconstruction of Financial Assets and Enforcement of Security Interest Act, 2002.

Ques 39. ANS (B) Solution:

A large force acting for short time period to produce finite change in momentum is called impulse.

The quantity impulse is obtained by multiplying force and time.
Impulse = Force x time.

The unit of Impulse is Newton-seconds or Kg.m/s.

The unit of impulse is dimensionally equivalent unit of momentum.

Ques 40. ANS (C) Solution:

Hundi and Chitties (used in the southern region) were used as documents to facilitate transfer of money from one hand to another for trading activities.

Following are some Hundi as practised by Indian Merchant Communities:

Dhani-jog	Darshan	Payable to any person - no liability over who received payment.
Sahi-jog	Darshan	Payable to a specific person, someone 'respectable'. Liability over who received payment.
Firman-jog	Darshan	Hundi made payable to order.
Dekhan-har	Darshan	Payable to the presenter or bearer.
Dhani-jog	Muddati	Payable to any person - no liability over who received payment, but payment over a fixed term
Firman-jog	Muddati	Hundi made payable to order following a fixed term.
Jokhmi	Muddati	Drawn against dispatched goods. If goods are lost in transit, the drawer or holder bears the costs, and the Drawee carries no liability.

Ques 41. ANS (C) Solution:

Netaji Subhash Chandra Bose was born in Cuttack on January 23, 1897, which is Subhash Chandra Bose's birthday. He was a son of Prabhavati Dutt and Janakinath Bose. During the time of British

colonialism in India, he was an Indian nationalist whose unyielding patriotism, unwavering nerve, and bravery made him a national hero, whose praises are still sung with pride by every Indian citizen. During the Second World War, he attempted to expel the British with the aid of the Nazi Party and Imperial Japan, leaving a dubious legacy.

Ques 42. ANS (A) Solution:

The Jallianwala Bagh Massacre was a mass killing of peaceful protestors gathered in Jallianwala Bagh to protest against the Rowlatt Act. It took place in Amritsar, Punjab in 1919. General Dyer ordered to open fire on the unarmed Indian protestors. The Hunter Commission was appointed in 1919 to inquire into the Jallianwala Bagh Massacre. It submitted its report in 1920. General Dyer was later assassinated by Sardar Udham Singh in Britain.

Ques 43. ANS (A) Solution:

कर्नाटक बैंक और पैसालो डिजिटल लिमिटेड, भारतीय रिजर्व बैंक के साथ पंजीकृत एक गैर-जमा लेने वाली एनबीएफसी ने लघु आय खंड को वित्तीय सहायता प्रदान करने और देश के सूक्ष्म और लघु उद्यम खंड को गति देने के लिए एक सह-उधार व्यवस्था में प्रवेश किया है।

पैसालो डिजिटल लिमिटेड के उप प्रबंधनिर्देशक – शांतनु अग्रवाल Karnataka Bank and Paisalo Digital Limited, a non-deposit taking NBFC registered with Reserve Bank of India have entered into a co-lending arrangement to provide financial support to the small income segment and give impetus to the micro and small enterprise segment of the country. have entered.

Deputy Managing Director of Paisalo Digital Limited – Shantanu Agarwal

Ques 44. ANS (D) Solution:

भारत का पहला ड्रोन फोरेंसिक लैब एंड रिसर्च सेंटर केरल में स्थापित किया गया है। केरल के मुख्यमंत्री, पिनारई विजयन ने केरल राज्य पुलिस साइबरडोम में राज्य पुलिस विभाग की 'ड्रोन फोरेंसिक प्रयोगशाला' का उद्घाटन किया।

India's first Drone Forensic Lab and Research Center has been established in Kerala. The Chief Minister of Kerala, Pinarayi Vijayan inaugurated the 'Drone Forensic Laboratory' of the State Police Department at the Kerala State Police Cyberdome.

Ques 45. ANS (B) Solution:

दादा साहेब फाल्के अंतरराष्ट्रीय फिल्म समारोह 2023 का आयोजन मुंबई में किया गया। इस अवार्ड शो में विवेक अग्निहोत्री द्वारा निर्देशित फिल्म द कश्मीर फाइल्स को बेस्ट फिल्म का अवार्ड दिया गया। एस एस राजामौली द्वारा निर्देशित फिल्म RRR को इस अवार्ड शो में 'फिल्म ऑफ द ईयर' चुना गया है।

Dadasaheb Phalke International Film Festival 2023 was organized in Mumbai. In this award show, the film The Kashmir Files directed by Vivek Agnihotri was given the Best Film Award. The film RRR directed by SS Rajamouli has been chosen as the 'Film of the Year' at this award show.

Ques 46. ANS (D) Solution:

All states in the Indian Union do not have identical powers. Some states enjoy special powers under certain provisions of the Constitution of India (Article 371) due to their peculiar social and historical circumstances. These special powers are especially enjoyed in relation to the protection of land rights of indigenous peoples, their culture and also preferential employment in government services.

Ques 47. ANS (A) Solution:

Bindusara is the son of Chandragupta of the Mauryan Dynasty. He is said to have ascended the throne in 298 BCE. As per the works of the Buddhist monk Taranath of Tibet, Bindusara is said to have destroyed kings and nobles of about sixteen cities and reduced to submission all the territory between the eastern and western seas (presumably the Arabian Sea and the Bay of Bengal).

Ques 48. ANS (C) Solution:

The epicenter is the projection to the surface, perpendicular to the hypocenter that reflects the intensity of an earthquake, a product of the liberation of tensions in the failure or weakness area in the Earth's crust.

Ques 49. ANS (C) Solution:

The Bohag Bihu, also called the Rongali Bihu is a festival of merriment and heralds the Assamese New Year and the onset of spring. The first day of the Bohag Bihu is called Goru Bihu. Bulls and cows are bathed with turmeric, fed with gourds and brinjals and provided with new attaching ropes. The second day of the Rongali Bihu festival (the first day of the Assamese New Year) is called the Manuh Bihu.

Ques 50. ANS (A) Solution:

Stratosphere-It consists of the Ozone layer (ozonosphere) . The ozone layer is the concentration of Ozone in the stratosphere that absorbs harmful ultraviolet radiations.

Troposphere-It is the innermost and thinnest layer of Earth's atmosphere.

Ionosphere-It is the outermost layer of Earth's atmosphere that contains electrically charged ions that reflect the radio waves back to the Earth making radio communication possible.

Ques 51. ANS (B) Solution:

Statement A:

In a rhombus, diagonals are unequal, and bisect each other at right angles. Therefore, A is not true.

Statement B:

In a square, diagonals are equal, and bisect each other at right angles. Therefore, B is true.

Ques 52. ANS (D) Solution:

Let the average speed of the train without stoppage = s km/h

Required time = 20 min/hour

$$[(s - 50)/s] * 60 = 20$$

$$3s - 150 = s$$

$$2s = 150$$

$$s = 75$$

So, the average speed of the train without stoppage = 75 km/h

Ques 53. ANS (D) Solution:

$$8a^3 + 27b^3 = (2a + 3b)(4a^2 + 9b^2 - 6ab) = 16$$

$$4*(4a^2 + 9b^2 - 6ab) = 16$$

$$4a^2 + 9b^2 - 6ab = 4 \text{ -----(1)}$$

$$(2a + 3b)^2 = 4^2$$

$$4a^2 + 9b^2 + 12ab = 16 \text{ -----(2)}$$

On solving equation (1) and (2),

$$18ab = 12$$

$$ab = 2/3$$

$$\text{And } 4a^2 + 9b^2 = 16 - 12*2/3 = 8$$

$$16a^4 + 81b^4 = (4a^2 + 9b^2)^2 - 72a^2b^2$$

$$= 8^2 - 72*4/9$$

$$= 64 - 32$$

$$= 32$$

Ques 54. ANS (A) Solution:

If two sides of a triangle are a and b then the range of third side is between (a + b) and (a - b).

So, the range is between (23 - 14) and (23 + 14) i.e. 9 and 37.

Hence, option a is correct.

Ques 55. ANS (A) Solution:

Since h = 2r

$$\text{Volume of the cone} = 19.404 \text{ cm}^3$$

$$\pi r^2 h / 3 = 19.404$$

$$\frac{22 \times r^2 \times 2r}{3 \times 7} = 19.404$$

$$r^3 = \frac{19.404 \times 3 \times 7}{22 \times 2}$$

$$r^3 = 0.441 \times 21$$

$$r = 2.1 \text{ cm}$$

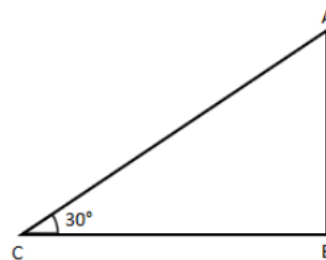
Ques 56. ANS (C) Solution:

If the difference of the sum of alternative digits of a number is divisible by 11, then that number is divisible by 11 completely.

$$\text{So, } 7 - 6 + 3 - 5 + 6 - 8 + 9 - 4 + 6 - T + 5 = 13 - T$$

Smallest value of T will be 2.

Ques 57. ANS (C) Solution:



$$BC = 510 \text{ m}$$

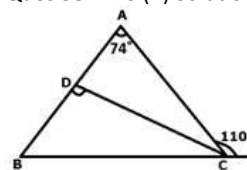
$$\tan 30^\circ = \frac{AB}{BC}$$

$$\frac{1}{\sqrt{3}} = \frac{AB}{510}$$

$$AB = 170\sqrt{3} \text{ m}$$

$$50\% \text{ of height of tower} = \frac{170\sqrt{3}}{2} = 85\sqrt{3} \text{ m}$$

Ques 58. ANS (B) Solution:



Since, CD is the bisector of $\angle ACB$.

$$\text{So, } \angle BCD = (180^\circ - 110^\circ) / 2 = 35^\circ$$

$$\angle CBD = 110^\circ - 74^\circ = 36^\circ$$

In $\triangle CBD$ -

$$\angle CBD + \angle BDC + \angle DCB = 180^\circ$$

$$\angle BDC = 180^\circ - 35^\circ - 36^\circ$$

$$\angle BDC = 109^\circ$$

Ques 59. ANS (A) Solution:

$$(x + 2y)^3 + (x - 2y)^3 - x^3 + (2y)^3 + 3x^2 \times 2y + 3x(2y)^2 + [x^3 - (2y)^3 - 3x^2 \times 2y + 3x(2y)^2]$$

$$= 2x^3 + 3x(2y)^2 + 3x(2y)^2$$

$$= 2x^3 + 24xy^2$$

Ques 60. ANS (B) Solution:

$$\cot A = 15/8$$

$$\tan A = 8/15$$

$$\tan 2A = \frac{2 \tan A}{1 - \tan^2 A}$$

$$= \frac{2 \times \left(\frac{8}{15}\right)}{1 - \left(\frac{8}{15}\right)^2}$$

$$= \frac{\frac{16}{15}}{1 - \frac{64}{225}}$$

$$= \frac{\frac{16}{15}}{\frac{161}{225}}$$

$$= \frac{16 \times 225}{15 \times 161}$$

$$= \frac{240}{161}$$

Ques 61. ANS (C) Solution:

Let each instalment amount is ₹x.

According to the question:

$$P \left(1 + \frac{R}{100} \right)^2 = x \left(1 + \frac{R}{100} \right)^1 + x$$

$$4620 \left(1 + \frac{10}{100} \right)^2 = x \left(1 + \frac{10}{100} \right)^1 + x$$

$$4620 * 1.21 = x * 1.1 + x$$

$$2.1x = 4620 * 1.21$$

$$x = 2200 * 1.21$$

$$x = 2662$$

Hence, value of each instalment = ₹2662

Ques 62. ANS (C) Solution:

If $r_1 + r_2 = C_1 C_2$, then there are 3 common tangents (2 direct and 1 transverse).

Ques 63. ANS (B) Solution:

SP = Rs. 166.44 and profit percentage = 14%

So, CP = $100/114 * 166.44$ = Rs. 146

Now new SP = Rs. 154.76

Hence, profit percentage = $(154.76 - 146)/146 * 100 = 6\%$

Ques 64. ANS (A) Solution:

Let the selling price = m

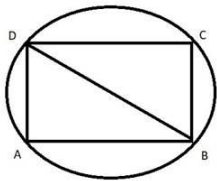
Cost price = 0.72m

$$\text{Profit percentage} = \frac{m - 0.72m}{0.72m} * 100$$

$$= \frac{0.28}{0.72} * 100$$

$$= 38.89\%$$

Ques 65. ANS (B) Solution:



In ΔADB ,

$$\angle ABD = 180 - (\angle ADB + \angle DAB)$$

$$= 180 - (35 + 100)$$

$$= 45^\circ$$

Since quadrilateral ABCD is a cyclic quadrilateral.

So,

$$\angle ADB + \angle CDB + \angle ABD + \angle DBC = 180$$

$$35 + 40 + 45 + \angle DBC = 180$$

$$\angle DBC = 180 - 120$$

$$\angle DBC = 60^\circ$$

Ques 66. ANS (A) Solution:

Work done by Sanjay, Ajay and Vijay together in a day = $1/30$

Work done by Vijay in a day = $1/80$

Work done by Sanjay and Ajay together in a day = $1/30 - 1/80 = 1/48$

Time taken by Sanjay and Ajay together = 48 days

Ques 67. ANS (C) Solution:

Number of students studying science in the year 2019 = 18% of 2000 = 360

Number of students studying science in the year 2020 = 19% of 2400 = 456

Required ratio = 360 : 456 = 15 : 19

Ques 68. ANS (B) Solution:

$$p(p+1) + \sqrt{(p+1)(p-5) + 4p+5}$$

$$= p(p+1) + \sqrt{p^2 - 4p - 5 + 4p + 5}$$

$$= p(p+1) + p$$

$$= p + 1$$

Ques 69. ANS (D) Solution:

Since, the jugs are similar.

Ratio of their volumes will be equal to the ratio of cubes of their respective heights.

80: Capacity of bigger jug = $8^3 : 12^3$

Capacity of bigger jug = 270 cm^3

Ques 70. ANS (C) Solution:

The temperature recorded on Monday and Tuesday together

$$= 20^\circ + 45^\circ = 65^\circ$$

The temperature recorded on Friday and Saturday together

$$= 25^\circ + 55^\circ = 80^\circ$$

$$\text{Required difference} = 80^\circ - 65^\circ = 15^\circ$$

Ques 71. ANS (D) Solution:

Total number of terms = 47^{th}

Sum of first three terms of the series = $4 + 1 - 5 = 0$

So, till 45^{th} term the sum of the series will be 0.

And 46^{th} term = 4 and 47^{th} term = 1

So, sum of the series will be $4 + 1 = 5$

Ques 72. ANS (D) Solution:

$$\sec 2\theta = \operatorname{cosec}(\theta - 36^\circ)$$

$$\operatorname{cosec}(90^\circ - 2\theta) = \operatorname{cosec}(\theta - 36^\circ)$$

$$90^\circ - 2\theta = \theta - 36^\circ$$

$$3\theta = 126^\circ$$

$$\theta = 42^\circ$$

Ques 73. ANS (A) Solution:

Total sales of company in 1998 = 20% of 9 crore = 1.8 crore

Total sales of company in 2000 and 2003 together = $(16+9)\%$ of 9 crores = 2.25 crore

Required percentage = $1.8 * 100/2.25 = 80\%$

Ques 74. ANS (B) Solution:

When a number 9685 is divided by "Q", then quotient is 56 and the remainder is 53.

$$\Rightarrow 9685 = Q * 56 + 53$$

$$\Rightarrow Q = (9685 - 53)/56$$

$$\Rightarrow Q = 172$$

Ques 75. ANS (D) Solution:

$$\text{Income} = 27550 * 100/95 = ₹29000$$

$$\text{Tax} = 29000 - 27550 = ₹1450$$

$$\text{Tax in next year} = 1450 * 110/100 = ₹1595$$

$$\text{Net Income received in next year} = 29000 - 1595 = ₹27405$$

Ques 76. ANS (B) Solution:

Megalomania - delusion about one's own power or importance; obsession with the exercise of power. Monomania - exaggerated or obsessive enthusiasm for or preoccupation with one thing. Pyromania - an obsessive desire to set fire to things. So, option (b) is the correct answer.

Ques 77. ANS (B) Solution:

'anchor' means a person who announces or presents a TV or radio program. This is what closely resembles the meaning stated in the question.

'anthropologist' means one who studies the evolution of mankind.

'chauffeur' means a person employed to drive a private or hired car.

'astronaut' means a person who is trained to travel in a spacecraft.

Therefore, the correct answer is option b).

Ques 78. ANS (B) Solution:

The word 'frugal' means 'sparing or economical as regards money or food'.

Let's look at the meanings of the given options.

Imprudent: not showing care for the consequences of an action; rash.

Economical: giving good value or return in relation to the money, time, or effort expended.

Negligent: failing to take proper care over something.

Honest: free of deceit; truthful and sincere.

Among the given options, 'economical' is the most appropriate synonym of the underlined word.

Hence, option (b) is the correct answer.

Ques 79. ANS (D) Solution:

'Credulous' (Adj) means Having or showing too great a readiness to believe things. 'Apprise' (inform or tell (someone)) and 'repel' (drive or force (an attack or attacker) back or away) can be rejected as they are unrelated to the word. 'Gullible' means Easily persuaded to believe something; credulous. Hence, option (b) can also be rejected as it is the same meaning as the word. The adjective 'worldly' means experienced and sophisticated. It is the most appropriate antonym of the given word. Hence, option (d) is the correct answer.

Ques 80. ANS (D) Solution:

'Prejudicial' means 'Harmful to someone or something; detrimental.'. Options (b) and (c) can be rejected as they are unrelated to the word. 'Detrimental' means 'Tending to cause harm.'. Hence, option (a) can also be rejected as it is the same meaning as the word. 'Obscure' means 'Not discovered or known about; uncertain.'. 'Attune' means 'Make receptive or aware.'. 'Beneficial' (resulting in good; favourable or advantageous) is the most appropriate antonym of the given word. Hence, option (d) is the correct answer.

Ques 81. ANS (A) Solution:

The correct answer is(a) The empire is being expanded slowly but surely by the Targaryen princess.

The subject of the Active Voice is changed into the object of the Passive Voice. Also, the object of the Active Voice is changed into the subject of the Passive Voice.

The usage of a helping verb is necessary while changing the voice of the sentence from Active to Passive.

The preposition "by" is used before the object made in Passive Voice. However, it is optional in some cases.

The Active voice in this question is in Present Continuous. Thus, the Passive voice will also be in Present Continuous.

The format of Active voice is: Subject + am/is/are + Verb (ing) + Object.

Thus, in Passive voice, the format will be: Subject (Objective case) + am/is/are + being + V3 + by + Object (Subjective case).

For example:

o Arnab is typing a document. (Active Voice)

o A document is being typed by Arnab. (Passive Voice)

The options except (a) don't follow the correct grammatical format of the Passive Voice.

Therefore, the correct answer is: The empire is being expanded slowly but surely by the Targaryen princess.

Ques 82. ANS (C) Solution:

In the family way: pregnant.

It is in context to the fact that the person is on sabbatical for a few days because she is pregnant.

The rest of the meanings are incorrect.

Therefore, the correct answer is (c), Pregnant.

Ques 83. ANS (C) Solution:

If we read the sentences, we can see that B is the introductory sentence as it tells us that the author tried to persuade himself to be bold, but it didn't work. A follows next, as it delves deeper into the author's psychology. It mentions that as he watched the scruffy-looking boy move closer, he was trembling in his shoes.

Then, C follows as it highlights that the author had been staring at him for quite some time. D is the last sentence as it describes the bully who was obnoxious and yelled at the other children.

Therefore, the correct answer is (c) BACD.

Ques 84. ANS (A) Solution:

'Audible' means loud enough to be heard. Hence, (a) is the correct answer.

'Edible' means fit to be consumed.

'Legible' means that is clear enough to be read easily.

'Tariff' means a list of duties payable on exports or imports.

Ques 85. ANS (C) Solution:

'It + Be verb' (am, is, are, was, were, will be, have been, has been, had been) is always followed by a Subjective Pronoun. Thus, 'it' must be followed by 'we'. Hence, the sentence needs an

improvement. Thus, the given sentence and option (a) are incorrect.

The sentence starts with 'If'. 'If' denotes that the given sentence is a conditional statement. If the condition is in the present tense (don't agree), then its result should be in the future (denoted by 'will'). So, option (b) is incorrect as 'would' is used in place of 'will'. Thus, 'we who will' should replace 'us who will'.

Therefore, the correct answer is (c), we who will.

The corrected form of the sentence is: If the shareholders don't agree to the proposition, it is we who will convince them.

Ques 86. ANS (D) Solution:

The given sentence is grammatically correct. We generally use "prefer.....to" when we talk about two nouns. Here 'brooding' (think deeply about something) is a gerund which can act as a noun.

Hence, option (d) is the correct answer.

Ques 87. ANS (D) Solution:

'Little' is used with only uncountable nouns. So, we cannot use it with the plural noun 'drops'. So, 'little' should be replaced with 'few' to rectify the given sentence. Therefore, the error is in the part in option (d).

The correct sentence is: Happiness is a perfume you cannot pour on others without getting a few drops on yourself.

Hence, option (d) is the correct answer.

Note: Countable and uncountable nouns: 1. Countable nouns are the class of nouns that can be counted, for example, 'table' - one table, two tables, three tables, etc. 2. Uncountable nouns are the nouns that cannot be counted or usually are not counted, for example, light, water, milk, information, furniture, etc. They do not generally have a plural form and can't be preceded by 'a' or 'an'. Many abstract nouns are typically uncountable. Some uncountable nouns can be used in the plural as well, depending on the meaning or context of the word.

Ques 88. ANS (A) Solution:

The error lies in Option (a).

"frequently visits Garrison" should replace "visits Garrison frequently".

Adverbs of time are generally placed before the verb they modify.

Some adverbs of time are:

o Always

o Often

o Already

o Never

o Frequently

Example:

o Our aunt often visits us during weekdays.

Therefore, the corrected form of the sentence is: Tommy Shelby frequently visits Garrison as he is the owner of the pub.

Ques 89. ANS (C) Solution:

'Off' is the correct choice for the given blank because 'off' in this case would convey the meaning of 'abstaining from', which would provide an appropriate meaning of avoiding food from the time the speaker had stomach ache. Commonly, 'over' is used to show that something is above or higher than something else, 'for' is used to show that something is intended to be given to someone and 'from' is used to show the place where or the time when someone or something starts.

Hence, option (c) is correct.

Ques 90. ANS (A) Solution:

Indefinite pronouns refer to things or people in general instead of being specific or definite.

'Another' is an indefinite pronoun used to express an additional (extra) or different person or thing.

'Anything' is an indefinite pronoun that means 'no matter what thing'.

'Anyone' is an indefinite pronoun that means 'no matter what person'.

'Everyone' is an indefinite pronoun that means 'all people'.

Now, options c) and d) are incorrect because the statement talks about a milkshake (a thing).

'Anything' is incorrect to be used here because the speaker does want just any other thing. The speaker wants to have more milkshakes (only). So, option b) is incorrect.

Hence, option a) is correct.

Ques 91. ANS (A) Solution:

In Cold Blood – without feeling or mercy; ruthlessly; in a cruel and deliberate way

Usage: Evans had been murdered in cold blood.

Hence, option (a) is the correct answer.

Ques 92. ANS (D) Solution:

In the case of Interrogative sentences like this, "said" in Direct Speech is changed into "enquired (of)", "wanted to know", "asked", etc.

In Indirect speech, the verb is always placed after the subject, unlike in Direct Speech.

If there is a question in the Direct Speech whose answer can come as "Yes" or "No" in the Indirect Speech, we should use the conjunctions "if" or "whether".

For example:

Ravi said to me, "Is she studying?" (Direct Speech)

Ravi asked me if she was studying. (Indirect Speech)

When converting direct speech into indirect speech, the present modal verbs (can/may/must/will/shall) should be changed into past modal verbs (could/might/had to/would/should).

The following things in the sentence should change when changed from Direct speech to Indirect Speech:

Inverted commas ("...") are replaced with 'whether'.

The pronoun 'you' is changed into 'I'.

'Can' is changed into 'could'.

Therefore, the correct answer is: The carpenter asked me whether I could crack on with the mallet.

Ques 93. ANS (B) Solution:

Use of plural helping verb 'are' before the blank suggests the use of plural noun after it, so this eliminates 'answer' and 'response'.

'Passive' is an adjective but the blank will take a noun as suggested by the use of noun 'reactions' given in the sentence with the blank (to maintain parallelism in the sentence). Hence, the answer is option b) 'responses' (means 'answer or reaction').

Note - Parallelism: In grammar, parallelism, also known as parallel structure or parallel construction, is a balance within one or more sentences of similar phrases or clauses that have the same grammatical structure. Given below is an example which shows a sentence in two forms (parallel in structure and lacking parallelism): Lacking parallelism: Prerna likes cooking, dancing and to sing. Parallel: Prerna likes cooking, dancing and singing.

Ques 94. ANS (D) Solution:

The blank 'B' will take a root verb as suggested by the use of modal verb 'can' before it. So, this eliminate 'felt' and 'experienced'.

'Accept' does not fit contextually in the blank 'B'. Hence, the answer is option d) 'feel'.

Note: Modal verb: A verb used with another verb to express an idea such as possibility that is not expressed by the main verb. The modal verbs in English are "can," "could," "may," "might," "must," "ought," "shall," "should," "will," and "would." They do not change their form (spelling) and they have no infinitive or participle (past/present). Example: I can speak Spanish. Here 'can' expresses the ability of the person to speak (main verb) Spanish. This ability cannot be expressed by the main verb 'speak'.

Ques 95. ANS (B) Solution:

As per the sentence with blank 'C', the blank will take a word opposite to 'simple' as suggested by the use of pair 'short or enduring' (means 'lasting over a period of time') which present opposite ideas. 'Smooth' and 'plain' deliver the same meaning as 'simple'. Similarly, 'Comprehensible' (means 'able to be understood') does not fit in the given blank. Hence, the answer is option b) 'complex' (which means 'consisting of many different and connected parts' and is opposite in meaning to 'simple').

Ques 96. ANS (A) Solution:

The sentence after the one with the blank 'D' talks about the 'behaviours' mentioned in the sentence with the blank 'D'

(suggested by the pronoun 'they' mentioned in it). It also says that these behaviours are 'outwardly' (means 'clear to observe'). So, the use of words 'covert' (means 'secret') and 'secret' is incorrect for them. 'Superstitious' (means 'having belief in superstitions') does not fit contextually in the given blank. Hence, the answer is option a) 'overt' which means 'obvious' or 'unconcealed'.

Ques 97. ANS (C) Solution:

Use of word 'without' does not make any sense in the given blank. The given blank 'E' will take an adjective to maintain parallelism in the sentence (as suggested by the use of 'covert' which is an adjective). So, this eliminates 'secretively' (adverb). Similarly, 'enigma' which is a noun can also be eliminated. Behaviours which are 'outwardly' are talked about in the previous sentences so the sentence with the blank 'E' might talk about behaviours which are 'hidden'. So, the use of word 'internal' fits in the blank 'E'. Hence, the answer is option c).

Note: Parallelism: In grammar, parallelism, also known as parallel structure or parallel construction, is a balance within one or more sentences of similar phrases or clauses that have the same grammatical structure. Given below is an example which shows a sentence in two forms (parallel in structure and lacking parallelism): Lacking parallelism: Prerna likes cooking, dancing and to sing. Parallel: Prerna likes cooking, dancing and singing.

Ques 98. ANS (B) Solution:

'Consent' means to express willingness. 'Dissent' means to disagree. So, the two words can be used as antonyms of each other. Hence, (b) is the correct answer.

'Distract' means to divert the attention of.

'Retard' means to keep delaying; to continue to hinder.

'Exclude' means to expel, to put out.

Ques 99. ANS (A) Solution:

The word 'baffle' means 'totally bewilder or perplex'.

Let's look at the meanings of the given words.

Puzzle: cause (someone) to feel confused because they cannot understand something.

Influence: the power to affect, change or control somebody/something.

Scold: to speak to someone angrily because you disapprove of their behaviour.

Annoy: to make someone angry.

Among the given options, 'puzzle' is the most appropriate synonym of the underlined word.

Hence, option (a) is the correct answer.

Ques 100. ANS (D) Solution:

The correct spelling of option (d) is 'haemorrhage'.

'Paralysis' means a complete or partial loss of function especially when involving the motion or sensation in a part of the body.

'Martyr' means one who sacrifices one's life to sustain a cause.

'Dungeon' means an underground prison or vault, built underneath a castle.

'Haemorrhage' means a lot of bleeding inside the body.

Hence, option (d) is the answer.

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