

# 6542 , SOLUTION , SSC CGL

Ques 1. ANS (A) Solution:

Option (b) (3 - 5 - 7)

Here, 3,5,7 are the consecutive prime numbers.

Option (c) (7 - 9 - 11)

Here, 7, 11, 13 are the consecutive prime numbers.

Option (d) (11 - 13 - 17)

Here, 11, 13, 17 are the consecutive prime numbers.

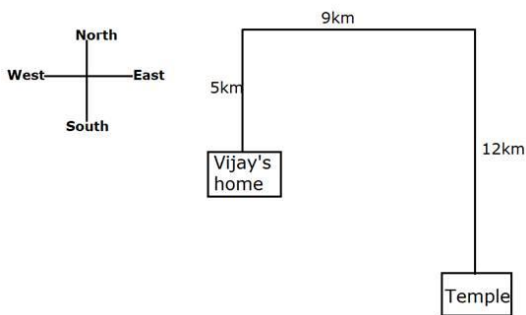
Option (a) (19 - 23 - 32)

Here, 19, 23 are the consecutive prime numbers. So, the next prime number will be 29.

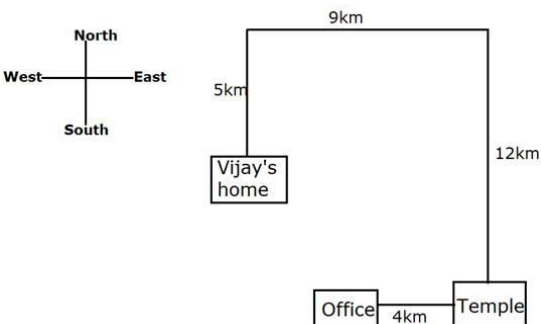
So, option (a) is odd from the rest.

Ques 2. ANS (A) Solution:

Vijay goes to office from his home and walks for 5km north, then he turns east and walks for 9km and then he turns right and walks for 12km and stops at Temple.



Then he turns west and walks for 4km to reach office.



Vijay's home is northwest of Temple.

Ques 3. ANS (C) Solution:

If we interchange the numbers 44 and 48, then the equations will be:

$$\begin{aligned} \text{I. } & 27 \times 8 - 44 + 384 \div 48 \\ & = 216 - 44 + 8 \\ & = 224 - 44 \\ & = 180. \end{aligned}$$

Thus, equation I is correct.

$$\begin{aligned} \text{II. } & 11 + 48 \div 8 - 44 \times 13 \\ & = 11 + 6 - 572 \\ & = -555. \end{aligned}$$

Thus, equation II is incorrect.

Ques 4. ANS (A) Solution:

The resultant is - 7 is deducted from four times of the number.

$$16 \times 4 = 64 - 7 = 57 \text{ \& } 27 \times 4 = 108 - 7 = 101$$

Similarly,  $21 \times 4 = 84 - 7 = 77$ .

Ques 5. ANS (B) Solution:

Two boxes are kept below B5 box.

Stack	Box
6	
5	
4	
3	B5
2	
1	

B2 box is kept immediately below B1 box.

B4 chocolate box is kept below B2 box and above B3 box.

Stack	Box	Box	Box	Box
6	B1	B1	B1	
5	B2	B2	B2	B1
4	B4	B4		B2
3	B5	B5	B5	B5
2	B3		B4	B4
1		B3	B3	B3

Two boxes are kept in between B3 box and B6 box.

Stack	Box
6	B1
5	B2
4	B6
3	B5
2	B4
1	B3

Two boxes are kept above box B6.

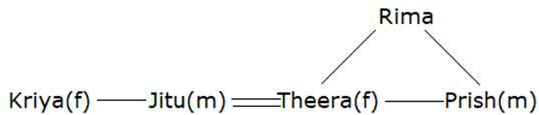
Ques 6. ANS (A) Solution:

Theera is the only sister of Prish who is the son of Rima.

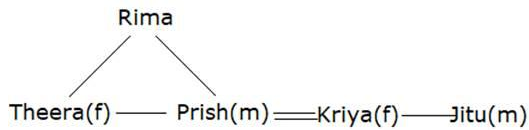
Jitu is the brother-in-law of Prish.

Kriya is the sister of Jitu.

Theera and Kriya have only one sibling.

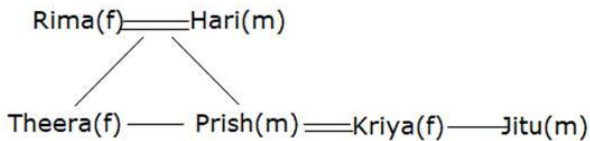


OR



Hari is the father-in-law of Kriya.

There are six members in a family.



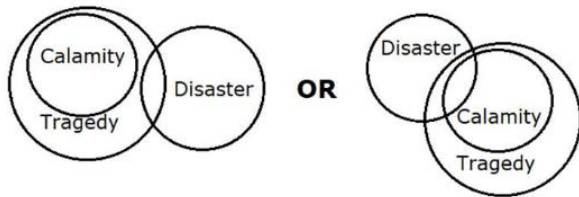
So, Kriya is a wife of Prish.

Ques 7. ANS (C) Solution:

Statements:

All calamity is tragedy

Some disaster is tragedy



(I) (II)

Some calamity is disaster: All calamity is tragedy. Some disaster is tragedy. From figure II, some calamity is disaster.

No calamity is disaster: All calamity is tragedy. Some disaster is tragedy. From figure I, no calamity is disaster.

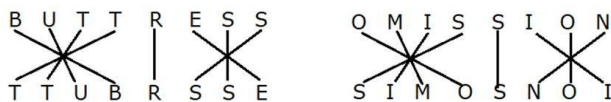
Hence, either conclusion I or conclusion II follows.

Ques 8. ANS (C) Solution:

Here, the pattern is:

A (1)	B (2)	C (3)	D (4)	E (5)	F (6)	G (7)	H (8)	I (9)	J (10)	K (11)	L (12)	M (13)
Z (26)	Y (25)	X (24)	W (23)	V (22)	U (21)	T (20)	S (19)	R (18)	Q (17)	P (16)	O (15)	N (14)
W (23)	H (8)	E (5)	A (1)	T (20)	WHEAT							
23+2=25	8+2=10	5+2=7	1+2=3	20+2=22	25107322							
M (13)	A (1)	I (9)	Z (26)	E (5)	MAIZE							
13+2=15	1+2=3	9+2=11	26+2=28	5+2=7	15311287							
F (6)	L (12)	O (15)	U (21)	R (18)	FLOUR							
6+2=8	12+2=14	15+2=17	21+2=23	18+2=20	814172320							

Ques 9. ANS (B) Solution:



Similarly,

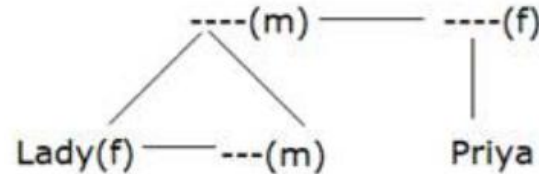


ADMITTED = IMDATDET

Ques 10. ANS (B) Solution:

Introducing the lady to her son, Priya said, "Her sister's father is the brother of my mother."

Thus, lady's sister's father is the brother of Priya's mother.



Thus, the lady is the cousin of Priya.

Ques 11. ANS (C) Solution:

From the above given four different positions of the same cube, it can be concluded that,

· Face having alphabet 'S' is not opposite to faces with alphabets O, Q, P and B because these alphabets are adjacent to the face with alphabet 'S'.

So, the face having alphabet 'S' is opposite to the face having alphabet 'J'.

Ques 12. ANS (B) Solution:

$$\begin{aligned} \text{Option a) } & 100 \div 5 - 90 \times 3 + 40 = 250 \\ & = 20 - 270 + 40 \\ & = 60 - 270 = -210 \end{aligned}$$

So, option a) is incorrect.

$$\begin{aligned} \text{Option b) } & 100 \div 5 + 90 \times 3 - 40 = 250 \\ & = 20 + 270 - 40 \\ & = 290 - 40 = 250 \end{aligned}$$

So, option b) is correct.

$$\begin{aligned} \text{Option c) } & 100 - 5 \div 90 + 3 \times 40 = 250 \\ & = 100 - 0.05 + 120 \\ & = 220 - 0.05 = 219.95 \end{aligned}$$

So, option c) is incorrect.

$$\begin{aligned} \text{Option d) } & 100 + 5 - 90 \div 3 \times 40 = 250 \\ & = 100 + 5 - 30 \times 40 \\ & = 100 + 5 - 1200 \\ & = -1095 \end{aligned}$$

So, option d) is incorrect.

Ques 13. ANS (B) Solution:

P Q R S T U

I (J) K (L) M (N) O (P) Q (R) S

N (OPQR) S (TUVW) X (YZAB) C (DEFG) H (IJKL) M

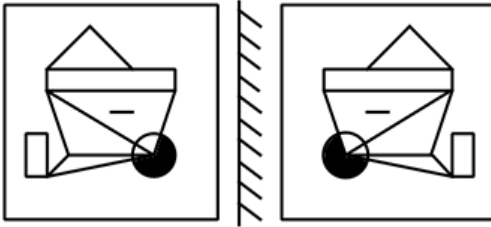
Ques 14. ANS (D) Solution:

The square moves by one place in an anti-clockwise direction and it does not appear in the immediate next step. The symbol at the centre increases by one in the following step and then again decreases by one in the immediately next step. The line segment in the corner moves by one place in an anti-clockwise

direction. Hence, figure (IV) will come next in the given figure series.

Ques 15. ANS (C) Solution:

Figure (III) would resemble a mirror image of the given figure.



Ques 16. ANS (B) Solution:

Here, the position of letters in alphabetical order is considered.

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

MAN = 13 + 1 + 14 = 28; 28 x 2 = 56.

MATERIAL = 13 + 1 + 20 + 5 + 18 + 9 + 1 + 12 = 79; 79 x 2 = 158.

Similarly, SPEECHLESS = 19 + 16 + 5 + 5 + 3 + 8 + 12 + 5 + 19 + 19 = 111; 111 x 2 = 222

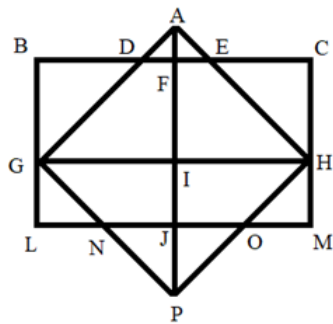
Ques 17. ANS (A) Solution:

784 - 58 = 726; 726 + 12 = 738; 738 - 58 = 680; 680 + 12 = 692; 692 - 58 = 634; 634 + 12 = 646

Ques 18. ANS (C) Solution:

Idle is an antonym for persevere similarly disgust is an antonym for relish.

Ques 19. ANS (C) Solution:

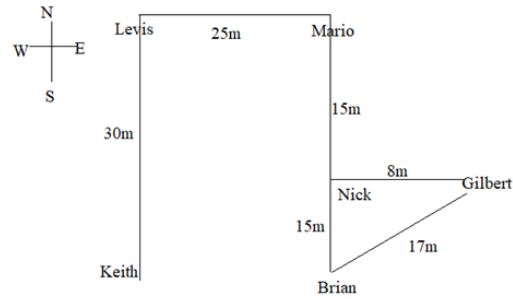


The triangles are - AFD, AFE, ADE, AIG, AIH, AGH, NJP, OJP, NPO, PIG, PIH, GPH, AGP, AHP, BGD, ECH, GLN, HOM.

So, there are 18 triangles.

Ques 20. ANS (A) Solution:

Levis stands 25m to the west of Mario. Nick stands 15m to the south of Mario. Gilbert stands 8m to the east of Nike. Keith stands 30m to the south of Levis. Brian stands 17m to the southwest of Gilbert.



The distance between Nick and Brian

=

$$\sqrt{17^2 - 8^2} = \sqrt{289 - 64} = 15m$$

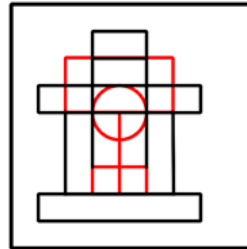
Ques 21. ANS (A) Solution:

The correct series is as:

4694 4694 4694 4694

Ques 22. ANS (A) Solution:

The given figure is embedded in figure a.



Ques 23. ANS (B) Solution:

E = 5 and 5 \* 3 = 15 = O

H = 8 and 8 \* 3 = 24 = X

A = 1, and 1 \* 3 = 3 = C

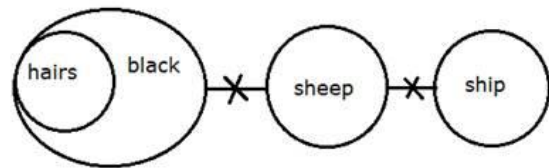
L = 12 but no letter has rank 36.

So, LZ is the odd one out.

Ques 24. ANS (D) Solution:

Here, the number of people who are graduates in engineering but in neither science nor architecture = 32 + 35 = 67

Ques 25. ANS (C) Solution:



Some ship are hairs: There is no direct relation between hairs and ship. Thus, there is a possibility that some ship are hairs. So, conclusion I is false.

No hair is sheep: All hairs are black and no black is sheep. Thus, no hair is sheep. So, conclusion II is true.

Ques 26. ANS (D) Solution:

GDP growth rate was increased during post-reforms era especially between 2005 and 2008 India witnessed growth rate of 9%.

India saw the surge of Foreign Direct Investment (FDI) flows into the country.

According to the reports, poverty declined faster but inequality increased in the post-reform period.

India's foreign exchange reserves increased enormously after the 1991 reforms.

Share of India's exports in world trade also increased. Agriculture, which accounted for nearly 30 per cent of the total GDP in 1991, now accounts for nearly 18 per cent of the economy.

Ques 27. ANS (D) Solution:

Anuradha Pal, the disciple of Ustad Alla Rakha and Zakir Hussain, is globally renowned for her articulation, rhythmic artistry and virtuosic repertoire. She became India's first female professional Tabla player. She founded the first ever all-female Indian Classical music band, Stree Shakti in 1996.

Ques 28. ANS (C) Solution:

Ugadi is a Hindu festival, celebrated in the south Indian states of Andhra Pradesh, Karnataka and Telangana. The festival marks the beginning of a new Hindu calendar year and is celebrated on the first day of "Chaitra" month, which falls in the months of March-April as per the Gregorian calendar.

Ques 29. ANS (B) Solution:

Detritivores and decomposers make up the last part of food chains.

Detritivores are organisms that eat non-living plant and animal remains. For example, scavengers such as vultures eat dead animals. Dung beetles eat animal feces.

Decomposers, like fungi and bacteria, complete the food chain.

Decomposers turn organic wastes, such as decaying plants, into inorganic materials, such as nutrient-rich soil.

They complete the cycle of life, returning nutrients to the soil or oceans for use by autotrophs. This starts a whole new series of food chains.

Ques 30. ANS (A) Solution:

Current through a given area of a conductor is the net charge passing per unit time through the area.

Current is a scalar quantity, hence does not follow vector law of addition.

The SI unit of electric current is ampere.

Ques 31. ANS (B) Solution:

पीएम मोदी के संसदीय क्षेत्र वाराणसी के लाल बहादुर शास्त्री इंटरनेशनल एयरपोर्ट पर देश के पहले रीडिंग लाउंज का उद्घाटन किया गया है. यहां पर वाराणसी से जुड़ी पुस्तकों को रखा गया है.

The country's first reading lounge has been inaugurated at Lal Bahadur Shastri International Airport in PM Modi's parliamentary constituency Varanasi. Books related to Varanasi have been kept here.

Ques 32. ANS (C) Solution:

River	Located in
A. Danube	i. Europe
B. Yellow	ii. China
C. Ob	iii. Russia
D. Orange	iv. South Africa

Ques 33. ANS (D) Solution:

An experimental geothermal power plant of 5 MW capacity has been set up at Manikaran in Himachal Pradesh.

Manikaran geothermal field extends from Harihar temple at the entrance of the village to the confluence of the Parbati River with the Brahmaganga Nala.

Geothermal energy is an alternative renewable source of energy, derived from natural heat stored in the deep interior of the Earth.

Geothermal power plants are used to generate electricity using geothermal energy (internal thermal energy of the Earth).

Ques 34. ANS (A) Solution:

The world famous Khajuraho temple complex consisting of many temples including the Lakshmana temple, Vishwanatha temple and Kandariya Mahadeva temple was built by the Chandelas of Bundelkhand who ruled from Khajuraho.

Ques 35. ANS (D) Solution:

There are four named ocean basins: the Atlantic, Pacific, Indian, and Arctic. The Pacific Ocean is the largest ocean on Earth, covering more than one-third of the Earth's surface and nearly half of Earth's water surface. All of the world's continents could fit into the Pacific basin.

Ques 36. ANS (A) Solution:

The chlorophyll molecule consists of a central magnesium atom surrounded by a nitrogen-containing structure called a porphyrin ring; attached to the ring is a long carbon - hydrogen side chain, known as a phytol chain.

Chlorophyll is found in virtually all photosynthetic organisms, including green plants, cyanobacteria, and algae. It absorbs energy from light; this energy is then used to convert carbon dioxide to carbohydrates.

Ques 37. ANS (A) Solution:

भारत के रुद्रांक्ष बालासाहेब पाटिल ने काहिरा में आईएसएसएफ विश्व कप 2023 में पुरुषों की 10 मीटर एयर राइफल स्पर्धा जीती। उन्होंने स्वर्ण पदक के मैच में जर्मनी के मैक्सिमिलियन उल्ब्रिच को 16-8 से हराकर शीर्ष पुरस्कार जीता।

India's Rudranksh Balasaheb Patil won the Men's 10m Air Rifle event at the ISSF World Cup 2023 in Cairo. He defeated Maximilian Ulbricht of Germany 16-8 in the gold medal match to win the top prize.

Ques 38. ANS (D) Solution:

Pelva Naik is one of the very few women exponents of Dhrupad - a genre of Indian classical music. She is a disciple of legendary Dhrupad maestro Ustad Zia Fariduddin Dagar and is a teacher of Art, Music and humanities. She has performed in various festivals and concerts in India and abroad.

Ques 39. ANS (C) Solution:

India's first-ever coal gasification based Talcher Fertiliser plant in Odisha will be ready by October 2024. The proposed fertilizer plant in Odisha's Talcher will start urea production in 2024. It will be India's first and largest coal gasification-based urea plant. It is a Rs 13,200 crore worth project which will revive the shut-down fertilizer plant formerly owned by Fertilizer Corporation of India Ltd (FCIL).

FCIL Talcher unit is being established by Talcher Fertilizers Ltd (TFL), a company promoted by GAIL (India) Ltd. (GAIL), Rashtriya Chemicals & Fertilizers Ltd. (RCF), Coal India Ltd. (CIL) and Fertilizers Corporation of India Ltd. (FCIL).

Ques 40. ANS (D) Solution:

Apart from scenic beauty Kashmir is renowned for its traditional dances as well. The festive spirit in Kashmir is generally celebrated with traditional folk dances. Rich heritage of Kashmir culture include the local music and the traditional folk dance. Dances that are famous in Kashmir valley are:

Kud Dance,  
Dumhal Dance,  
Rouf Dance,  
Bhand Pather,  
Bachha Nagma,  
Hafiza Dance,  
Bhand Jashan, and,  
Wuegi-Nachun.

Ques 41. ANS (C) Solution:

The breakdown of pyruvate in order to generate carbon dioxide, water, and energy in the presence of oxygen is known as aerobic respiration.

The respiration is a process carried out by all living organisms where the food products are broken down in presence of oxygen and form energy that is being used by our body to survive.

Ques 42. ANS (A) Solution:

The Chief Minister is appointed by the Governor of the State. The term of the Chief Minister is not fixed. He may remain as the Chief Minister as long as he enjoys the support of the majority of the members of the Legislative Assembly. He has to resign when he loses the confidence of the majority in the assembly. It is understood that normally he completes a 5 years term like other members in the Legislative Assembly.

Ques 43. ANS (D) Solution:

Bhaona is a traditional drama form of entertainment among Assamese peoples. Jamuguri in Sonitpur district organises Baresaharia Bhaona which is a unique form of Bhaona. It has

been celebrated more than 200 years. This Baresaharia Bhaona is celebrated once in every five years.

Ques 44. ANS (A) Solution:

Sahitya Akademi award is given in the form of a casket containing an engraved copper-plaque, a shawl, and cash prize will be presented to the awardees at a ceremony. Authors will receive a cash prize of Rs 1,00,000 each, and translators, Rs 50,000 each, for their winning books.

Ques 45. ANS (A) Solution:

Aditi Ashok is an Indian professional golfer. She plays on the Ladies European Tour and LPGA Tour. She made her Olympic Games debut at the 2016 Summer Olympics. She qualified for the 2020 Summer Olympics in Tokyo, representing India in golf and finished 4th.

Ques 46. ANS (B) Solution:

Monty Desai has been officially appointed as the head coach of the Nepal National men's cricket team. The place for the head coach got vacant after Manoj Prabhakar resigned last year.

Ques 47. ANS (A) Solution:

India deploys a women-only platoon of peacekeepers to the UN Mission in Abyei on the border of Sudan and South Sudan as part of the Indian Battalion in the United Nations Interim Security Force, Abyei (UNISFA). The Indian contingent consists of two officers and 25 other ranks. India is among the largest troop-contributing countries to UN peacekeeping.

India was the first country to deploy the first-ever all-female Formed Police Unit (FPU) in the history of United Nations peacekeeping in Liberia on 30th January 2007.

Ques 48. ANS (B) Solution:

India ranks 108th in the Electoral Democracy Index of the V-dem Democracy report 2023. The country ranks way below countries such as Tanzania, Bolivia, Mexico, Singapore and Nigeria.

India's ranking dipped from the 100th position in 2022 to 108th this year in the report's Electoral Democracy Index (EDI) while it was 97th in the Liberal Democracy Index (LDI).

Ques 49. ANS (C) Solution:

The Code of Points is a rulebook that defines the scoring system for each level of competition in gymnastics.

Gymnasts are judged by the Code of Points, a rule book that outlines the point values of various skills.

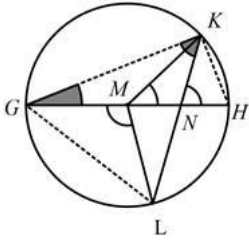
A gymnast's final score is calculated from a start value, where the gymnast begins with the highest possible score and then has points deducted for elements that may have been lacking in her routine. A technical committee of judges determines these deductions.

Ques 50. ANS (C) Solution:

In Tibet, the Brahmaputra river carries a smaller volume of water and less silt as it is a cold and a dry area. In India, it passes through a region of high rainfall. Here the river carries a large volume of water and considerable amount of silt. The

Brahmaputra has a braided channel in its entire length in Assam and forms many riverine islands.

Ques 51. ANS (A) Solution:



According to the theorem of chords of a circle, the angle subtended at the centre of the circle by an arc is twice the angle subtended by it at any other point on the circumference.

$$\text{So, } \angle KGH = \frac{1}{2} * \angle KMH = \frac{1}{2} * 46 = 23^\circ$$

$$\text{Similarly, } \angle GKL = \frac{1}{2} * \angle GML = \frac{1}{2} * 98 = 49^\circ$$

Thus, in  $\Delta GKN$ ,

$\angle KNH = \angle KGN + \angle GKN$  (Sum of two interior opposite angle is equal to exterior angle)

$$= 23 + 49 = 72^\circ$$

Ques 52. ANS (A) Solution:

$$\sqrt{[(1 - \sin^2\theta)\text{cosec}^2\theta]}$$

$$\sqrt{[\text{Cos}^2\theta * 1/\text{Sin}^2\theta]}$$

$$\sqrt{[(\text{Cot}^2\theta)]} = \text{Cot}\theta$$

Ques 53. ANS (C) Solution:

Let length of equal sides of triangle = Y cm

Therefore,

$$(1/2) * Y * Y = 612.5$$

$$Y^2 = 612.5 * 2$$

$$Y^2 = 1225$$

$$Y = 35 \text{ cm}$$

$$\text{Hypotenuse}^2 = 35^2 + 35^2$$

$$\text{Hypotenuse} = 35\sqrt{2}$$

$$\text{Hypotenuse} = 35 * 1.414 = 49.49 \text{ cm}$$

Alternate Method

Area of isosceles right angled triangle = Hypotenuse \* Hypotenuse/4

$$\sqrt{612.5 * 4} = \text{Hypotenuse}$$

$$\text{Hypotenuse} = \sqrt{2450} = 49.49 \text{ cm}$$

Ques 54. ANS (B) Solution:

$$\text{Since } 4x^2 + 5nx + 25, \text{ then } 4x^2 + 5nx + 25 = (2x)^2 + 2.2x.5 + 5^2$$

After comparing both the sides-

$$\Rightarrow n = 4$$

$$\text{Square root of 'n'} = \sqrt{4} = 2$$

Ques 55. ANS (A) Solution:

$$\text{cosec}\theta = 25/24$$

Here, hypotenuse = 25, perpendicular = 24

$$\text{Base} = [(25)^2 - (24)^2]^{1/2} = 7$$

$$\sin\theta = 24/25, \cos\theta = 7/25, \tan\theta = 24/7 \text{ and } \sec\theta = 25/7$$

Now the value of expression =  $(4\tan\theta - 3\sec\theta)/(\sin\theta - 2\cos\theta)$

$$= (4 * 24/7 - 3 * 25/7)/(24/25 - 2 * 7/25)$$

$$= 25/7 * (96 - 75)/(24 - 14)$$

$$= 25/7 * 21/10$$

$$= 15/2 = 7.5$$

Ques 56. ANS (C) Solution:

Let the person purchases 'n' number of black marbles.

$$\text{Cost of n number of black marbles} = n/15$$

$$\text{And cost of n number of white marbles} = n/10$$

$$\text{Cost of 2n marbles} = (n/15) + (n/10) = \text{Rs. } (n/6)$$

$$\text{Selling price of 12 marbles} = \text{Rs. } 1$$

$$\text{Selling price of 2n marbles} = 2n/12 = \text{Rs. } (n/6)$$

Since SP = CP, there is neither profit nor loss.

Ques 57. ANS (A) Solution:

Only (1) is true,

$$\text{Area of trapezium} = (1/2) * (\text{Distance between parallel sides}) * (\text{Sum of parallel sides})$$

Any quadrilateral to become Trapezium, one pair of opposite side should be parallel to each other.

Option 2 also wrong as opposite sides are not necessarily equal in trapezium.

Ques 58. ANS (C) Solution:

Let rate of interest = R%

$$\text{Then, SI on Rs.1280 in 6.5 years at R\% rate of interest} = 1280 * R * 6.5/100 = 83.2R$$

$$\text{And, SI on Rs.1400 in 8 years at R\% rate of interest} = 1400 * R * 8/100 = 112R$$

$$\text{Now, } 112R - 83.2R = 216$$

$$R = 7.5$$

Ques 59. ANS (A) Solution:

Let the numbers be A and B

$$(A + B)^2 = (A^2 + B^2 + 2AB) = (130 + 2 * 63) = (130 + 126) = 256$$

$$(A + B) = 16$$

$$A^3 + B^3 = (A + B) * (A^2 + B^2 - AB) = 16 * (130 - 63) = 16 * (67) = 1072$$

Ques 60. ANS (A) Solution:

We have  $(PQ)^2 = [(-2) - 4]^2 + [2 - 5]^2 = 45$  and  $(PR)^2 = [(-2) - 3]^2 + [2 - (2 + 2\sqrt{5})]^2 = 45$ . Since two lines have equal lengths, the triangle is an isosceles triangle.

Ques 61. ANS (A) Solution:

$$\text{Area of bigger circle} = \pi * 12 * 12 = 144\pi \text{ sq. cm}$$

$$\text{Area of smaller circle} = \pi * 5 * 5 = 25\pi \text{ sq. cm}$$

Area of shaded region = Area of bigger circle - area of smaller circle

$$= 144\pi - 25\pi$$

$$= 119\pi$$

$$= 119 * 22/7$$

$$= 17 * 22 = 374 \text{ sq. cm}$$

Ques 62. ANS (C) Solution:

$$\text{Relative speed} = 60 + 48 = 108 \text{ km/hr} = 108 * 5/18 = 30 \text{ m/sec.}$$

$$\text{Total distance} = L + 8 + L + 12 = (2L + 20) \text{ m}$$

According To Question,

$$(2L + 20)/30 = 22/3$$

$$2L + 20 = 220$$

$$2L = 200$$

$$L = 100$$

Ques 63. ANS (A) Solution:

Total students = 1400

Girls = 35% of 1400 = 490

Boys = 1400 - 490 = 910

Failed boys = 20% of 910 = 182

Failed girls = 10% of 490 = 49

Total failed students = 182 + 49 = 231

Required percent =  $(231/1400) * 100 = 16.5\%$

Ques 64. ANS (A) Solution:

$$\text{अभीष्ट अनुपात} = 30 : \frac{25}{5}$$

$$= 60 : 25 = 12 : 5$$

Ques 65. ANS (C) Solution:

Remainder when  $53^1$  is divided by 7 = 4

Remainder when  $53^2$  is divided by 7 = 2

Remainder when  $53^3$  is divided by 7 = 1

Hence, any power to 53 which is multiple of 3 when divided by 7 leaves 1 as remainder.

$53^{121}$  can be written as  $(53^3)^{40} * 53^1$

Remainder when  $(53^3)^{40}$  is divided by 7 is 1 and remainder when  $53^1$  is divided by 7 is 4.

Remainder when  $53^{121}$  is divided by 7 =  $1 * 4 = 4$

Remainder when  $71^1$  is divided by 7 = 1

Any power to 71 when divided by 7 leaves 1 as remainder.

Hence, required remainder =  $4 + 1$

= 5

Ques 66. ANS (A) Solution:

Ratio of share of A, B, and C = 26000 \* 12: 52000 \* 12: 39000 \* 12

= 2: 4: 3

Total profit = Rs.72000

3/4th of total profit =  $72000 * \frac{3}{4} = \text{Rs.}54000$

Share of C in Rs.54000 =  $54000/3 = \text{Rs.}18000$

Share of C in Rs.18000 =  $18000 * \frac{3}{9} = \text{Rs.}6000$

Total share of C =  $18000 + 6000 = \text{Rs.}24000$

Ques 67. ANS (B) Solution:

अभीष्ट राजस्व =  $(260 + 350 + 320)$  करोड़ रुपए = 930 करोड़ रुपए

Ques 68. ANS (C) Solution:

$$I: (1.2)^3 - (0.7)^3 - (0.5)^3$$

$$\text{Since, } 1.2 - 0.7 - 0.5 = 0$$

Hence,

$$(1.2)^3 - (0.7)^3 - (0.5)^3 = 3 * 1.2 * 0.7 * 0.5 = 1.26$$

$$II: \sqrt{0.0081} + \sqrt{0.0016} - \sqrt{0.0036} = \sqrt{0.0049}$$

$$= 0.09 + 0.04 - 0.06$$

$$= 0.07$$

$$= \sqrt{0.0049}$$

Ques 69. ANS (D) Solution:

$$\begin{aligned} \text{अभीष्ट प्रतिशत कमी} &= \left( \frac{300 - 260}{300} \right) \times 100 \\ &= \frac{40 \times 100}{300} = \frac{40}{3} = 13.33\% \end{aligned}$$

Ques 70. ANS (A) Solution:

Slant height (l) = 20 m

Radius (r) = 9 m

Curved surface area =  $\pi * \text{radius} * \text{slant height}$

$$= \pi * 9 * 20$$

$$= 3.14 * 9 * 20$$

$$= (314/100) * 9 * 20$$

$$= 314 * 9/5 \text{ sq. m}$$

$$\text{Total cost} = 314 * (9/5) * 15$$

$$= 314 * 27$$

$$= \text{Rs.}8478$$

Ques 71. ANS (A) Solution:

Let a cm be the length of the base side and height (h) = 30 cm

Volume = area of base \* height

$$\Rightarrow 11520\sqrt{3} = [(3\sqrt{3})/2]a^2 * 30$$

$$\Rightarrow a^2 = 11520\sqrt{3} * 2/(3\sqrt{3}) * 1/30$$

$$\Rightarrow a^2 = 256$$

$$\Rightarrow a = 16$$

Ques 72. ANS (B) Solution:

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

$$= 3x^3 + x^2y^2 + 9x + 3y^2$$

After comparing:

$$a = 3, b = 1, c = 9 \text{ and } d = 3$$

Now,

$$= \sqrt{3 * 1 * 9 * 3}$$

$$= \sqrt{81}$$

$$= 9$$

Ques 73. ANS (D) Solution:

Remaining time =  $150 - 60 = 90$  days

Remaining work =  $1 - 2/7 = 5/7$

Let x more men will be required.

Therefore according to question,

$$(237*60)/(2/7) = ((237+x)*90)/(5/7)$$

$$237*300 = (237+x)*180$$

$$180x = 237(300-180)$$

$$x = 237*120/180 = 158 \text{ men}$$

Ques 74. ANS (C) Solution:

The numbers between 1 to 800 divisible by 9,

First number = 9 and last number = 792.

Required sum =  $(9 + 18 + 27 + \dots + 792)$

$$= 9 * (1 + 2 + 3 + \dots + 88)$$

Sum of first n natural numbers =  $(n \times (n + 1))/2$

Required sum =  $9 \times ((88 \times 89)/2) = 35244$

Ques 75. ANS (B) Solution:

$$n^2 + (1/n^2) = 83 \dots\dots\dots(1)$$

Subtracting 2 from both the sides

$$n^2 + (1/n^2) - 2 = 83 - 2$$

$$n^2 + (1/n^2) - (2 \times n \times (1/n)) = 81$$

$$(n - (1/n))^2 = 81$$

$$(n - (1/n)) = 9 \dots\dots\dots(2)$$

Multiplying (1) by (2) we get

$$(n^2 + (1/n^2)) \times (n - (1/n)) = 83 \times 9$$

$$(n^3 - (1/n^3)) - (n - (1/n)) = 747$$

$$(n^3 - (1/n^3)) = 747 + 9 = 756.$$

Ques 76. ANS (D) Solution:

The meaning of the word 'industrious' is 'diligent and hard-working'. Let's look at the meanings of the given options.

Diligent: having or showing care and conscientiousness in one's work or duties.

Assiduous: showing great care and perseverance.

Important: of great significance or value.

Inactive: not engaging in or involving any or much physical activity.

Among the given options, 'inactive' is the most appropriate antonym of the given word.

Hence option (d) is the correct answer.

Ques 77. ANS (C) Solution:

The sentence is in present perfect continuous tense. While changing direct speech into indirect speech, 'said to' is changed into 'told' and 'to' is not used after 'told' and the present perfect continuous tense is changed into past perfect continuous tense. 'Today' is changed into 'that day'.

The change is as follows: has/have + been + present participle à had + been + present participle. Option C is the correct answer.

Ques 78. ANS (A) Solution:

WORD	MEANING
Potable	Safe to drink
Nascent	Beginning to exist and evolve
Crusade	A vigorous campaign for political, social, or religious change
Pedantic	Excessively concerned with minor details

So, 'potable' is the right choice.

Hence, option (a) is correct.

Ques 79. ANS (C) Solution:

The idiom 'Stir up a hornet's nest' means 'To create, provoke, or trigger a dangerous, troublesome, or complicated situation'. Hence option c) is the correct answer. 'At daggers dawn.' means

'be bitterly hostile towards each other'. 'Cry someone a river' means 'To weep profusely or excessively in the presence of another person'. 'A wet blanket' means 'A person who discourages enjoyment or enthusiasm'.

Ques 80. ANS (C) Solution:

Solution

The definite article 'the' is used to talk about a particular person or thing. Here, 'Easter' is a known and specified festival. Hence, we will use 'the.' Indefinite articles 'a' and 'an' are used before non-specific nouns only. 'An' is used before a word with a vowel sound and 'a' before a word with a consonant sound. 'More' is not an article, but a determiner which does not fit the blank contextually.

Therefore, option (c) is the correct answer.

Note:

Definite and indefinite articles: In the English language, we have one definite article 'the'; it refers to or introduces, a particular, specific noun. 'An' and 'a' are indefinite articles; they refer to, or introduce, an unspecified noun.

Ques 81. ANS (A) Solution:

The blank requires a preposition to show the logical relationship between the "resurrection" and "Jesus Christ". 'Of' is a preposition that indicates relationships between other words, such as belonging, things made of other things, things that contain other things, or a point of reckoning. 'Off' indicates 'moving away and often down from'. 'Over' is used to 'talk about movement or position at a higher level than something else'. The preposition 'on' is used to show the placement of something on top of something else.

As per the stated usages, filling the blank only with 'of' makes the sentence meaningful.

Hence, option (a) is the correct answer.

Ques 82. ANS (A) Solution:

We use many to refer to a large number of something countable. Here, 'churches' is countable.

option (b) - We use much if the noun is non-countable (such as water, sand). Here, 'churches' is a countable noun, hence this cannot be used.

option (c) - We use any before nouns to refer to indefinite or unknown quantities or an unlimited entity which is not the case here.

option (d) - We use the quantifier more to talk about additional quantities, amounts and degree. More is a comparative word. It does not fit in the given sentence as there is no comparison done here.

Therefore, the correct answer is option (a).

Ques 83. ANS (B) Solution:

Here, we need a singular verb to complete the sentence as the subject 'observance' is singular.

Options c) and d) are incorrect as 'ensure' and 'come' are plural verbs.



'Ranges' (as a verb) means 'to have an upper and a lower limit in amount, number, etc.'. It does not give any meaning to the sentence.

'Comes' is the required singular verb that makes the sentence meaningful.

Hence, option (b) is correct.

Note:

Subject-Verb Agreement: Matching up singular or plural subjects with singular or plural forms of a verb is part of the process called agreement. This can be understood better by the examples given: - "She likes cooking." [singular subject and verb] -- "They like to cook vegetables." [plural subject and verb]

Ques 84. ANS (C) Solution:

The blank requires a past simple form of the verb to complete the sentence as it talks about the practices of the earliest Christians in past. The only verb in the past simple form is 'commemorated' [mark or celebrate (an event or person) by doing or producing something]. Hence, (c) is the correct answer.

Ques 85. ANS (C) Solution:

Replace 'but' with 'yet' to make a grammatically correct sentence. According to the conjunction rule- although and though are paired with yet. 'But' is making an incorrect pair with 'though'.

Hence, option (c) is the correct choice.

Ques 86. ANS (B) Solution:

'Unless' is used to denote the condition i.e. 'If not'. So, again the use of negative word 'not' is superfluous. Therefore, the phrase, 'are not very' needs to be replaced with 'are very' to make the sentence grammatically correct.

Hence, option (b) is the correct choice.

Ques 87. ANS (D) Solution:

'Summons' is a noun that is always written in the plural form.

Thus, options (a) and (c) are incorrect.

Though 'summons' is plural in form, it is singular in meaning.

Thus, it agrees with a singular verb (has). Thus, option (b) is incorrect.

Therefore, the correct answer is: (d) No improvement.

The corrected form of the sentence is: The summons by the court has to be answered by the plaintiff.

Additional Information:

Nouns that are plural in form but singular in meaning. Thus, they agree with a singular verb.

Innings
News
Linguistics
Politics
<b>Summons</b>
Games and sports like Billiards, Gymnastics, Athletics
Diseases like Mumps and Measles
Titles of books like Arabian Nights, Gulliver's Travels
Descriptive names of countries like United States, United Kingdom
Branches of learning like Physics, Biology, Mathematics

Ques 88. ANS (C) Solution:

The highlighted part in the given sentence is incorrect because the usage of the verb 'storing' is wrong, we need a noun (storage) to place it with another noun 'energy' to form a noun phrase in order to convey the meaning of the sentence correctly.

Hence, option (c) is correct.

Ques 89. ANS (B) Solution:

Option B is the right answer, as 'no sooner' is used with 'than', it should replace 'before'. 'When' is used with 'hardly had'. Option D is eliminated. Options A and C are eliminated, as they contain no errors.

Ques 90. ANS (C) Solution:

The correct answer is (c) The new hairstyle of Cristiano Ronaldo is loved by me.

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

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

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 Indefinite. Thus, the Passive voice will also be in Present Indefinite.

The format of Active voice is: Subject + V1/ V5 + Object.

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

For example:

o She likes you. (Active Voice)

o You are liked by her. (Passive Voice)

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

Therefore, the correct answer is: The new hairstyle of Cristiano Ronaldo is loved by me.

V1 -> Base form/simple form of verb, V2 -> Past form of verb (-ed form or irregular verb), V3 -> Past participle form of verb (-ed, -d, -t, -en, or -n), V4 -> Continuous form of verb / Present participle form of verb (-ing form), V5 -> Third person singular (V1+ -es or -s)

Ques 91. ANS (D) Solution:

The idiom 'rare bird' means 'an exceptional person or thing; a rarity'. Hence, the answer is option d).

Ques 92. ANS (A) Solution:

Option a) is incorrectly spelt. The correct spelling should be 'existence'. 'Supersede' means 'to take the place of somebody/something which existed or was used before, and which has become old-fashioned'.

Hence, option a) is the answer.

Ques 93. ANS (C) Solution:

All the bold words are correct except for the word mentioned in option (c). The incorrectly spelt word is 'belevs'.

The correct spelling is 'believes' (to feel sure that something is true or that somebody is telling the truth).

Hence, option (c) is correct.

Ques 94. ANS (D) Solution:

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

The removal of the helping verb (and the preposition 'by' - if applicable) is necessary while changing the voice of the sentence from Passive to Active.

The sentence in the Passive voice is in the Present Perfect tense. So, the sentence in the Active voice must also be in the Present Perfect tense.

In Active voice, the introduction of "Somebody" is necessary for these types of sentences.

For example:

I have been robbed. (Passive)

Somebody has robbed me. (Active)

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

Therefore, the correct answer is: (d) Somebody has eaten my lunch.

Ques 95. ANS (B) Solution:

The meaning of the word 'dense' is 'having the constituent parts crowded closely together'. Let's look at the meanings of the given options.

Opaque: not able to be seen through; not transparent.

Sparse: thinly dispersed or scattered.

Lame: (especially of an animal) unable to walk without difficulty as the result of an injury or illness affecting the leg or foot.

Abiding: (of a feeling or memory) lasting a long time; enduring.

Among the given options, 'sparse' is the most appropriate antonym of the given word.

Hence, option (b) is the correct answer.

Ques 96. ANS (C) Solution:

If we read the sentences, we can see that C must be followed by B as C tells us that the doctor stated that the results that he received from the test were normal and B informs us that the other results from the tests would take more time. Only options (a) and (c) have C and B together. If we go by these options, we can confirm that D is the introductory sentence as

it highlights that the author stayed there for several hours until a young doctor emerged and informed him of the situation.

Then, C and B follow and lastly, A serves as the concluding sentence as the doctor concluded that the author might have been infected with a virus.

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

Ques 97. ANS (A) Solution:

Bucolic- relating to the pleasant aspects of the countryside and country life. 'Rural' is its synonym. Option A is the correct answer.

Ques 98. ANS (B) Solution:

Indigenous- originating or occurring naturally in a particular place; native. Studious - showing great care or attention; spending a lot of time studying or reading. Assiduous - showing great care and perseverance. Ingenious - (of a person) clever, original, and inventive. Option B is the correct answer.

Ques 99. ANS (A) Solution:

The correct answer is: (a) Each of Alexander's soldiers was.

"Each" is a distributive pronoun.

They are always followed by a singular verb. Thus, "was" is the appropriate verb used here.

For example:

o Each of the students is brilliant.

Option (c) is incorrect because "soldier" is used in place of "soldiers".

Therefore, the correct answer is: Each of Alexander's soldiers was bound to swear absolute loyalty to the King.

Additional Information:

Ques 100. ANS (C) Solution:

The meaning of the word 'appraise' is 'assess the value or quality of'. Let's look at the meanings of the given options.

Inform: give (someone) facts or information; tell.

Neglect: failing or forgetting to do something.

Assess: evaluate or estimate the nature, ability, or quality of.

Access: the chance or right to use or have something.

Among the given options, 'assess' is the most appropriate synonym for the given word.

Hence, option (c) is the correct answer.