

# 6541 , SOLUTION , SSC CGL

Ques 1. ANS (C) Solution:

$$(82, 41, 123) = 82, 82 \div 2 = 41, 82 + 41 = 123$$

$$(74, 37, 111) = 74, 74 \div 2 = 37, 74 + 37 = 111$$

Option (a):

$$(54, 27, 84) = 54, 54 \div 2 = 27, 54 + 27 = 81 \text{ which is not equal to } 84$$

Option (b):

$$(46, 22, 84) = 46, 46 \div 2 = 23 \text{ which is not equal to } 22$$

Option (c):

$$(56, 28, 84) = 56, 56 \div 2 = 28, 56 + 28 = 84$$

Option (d):

$$(22, 12, 84) = 22, 22 \div 2 = 11 \text{ which is not equal to } 12$$

So, Option (c) is the correct option that is related in the same way as are the numbers of the following sets.

Ques 2. ANS (B) Solution:

Except Repellent, all others are synonyms of each other.

Ques 3. ANS (C) Solution:

G 100 T 300 Q 500 Z 200 P 500 V 600 U 400 G

G 100 T means G is the grandfather of T

T 300 Q means T is the daughter of Q

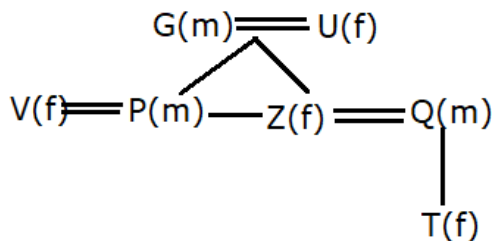
Q 500 Z means Q is the husband of Z

Z 200 P means Z is the sister of P

P 500 V means P is the husband of V

V 600 U means V is the daughter-in-law of U

U 400 G means U is the wife of G



Z is the daughter of U.

Ques 4. ANS (B) Solution:

In in letter cluster- JKOU, SDAL and XPEO there are two consonants and two vowels.

But there are four vowels in AEIO. Thus, AEIO is different.

Ques 5. ANS (D) Solution:

Here, the pattern is:

Option (a)  $R+3=U$ ;  $K+2=M$ ;  $O+1=P$ .

Option (b)  $W+3=Z$ ;  $T+2=V$ ;  $A+1=B$ .

Option (c)  $M+3=P$ ;  $V+2=X$ ;  $Z+1=A$ .

Option (d)  $L+3=O$ ;  $C+1=D$ ;  $I+1=J$ .

Ques 6. ANS (B) Solution:

Neither argument I nor argument II is a strong argument. Since they were arrested, so it cannot be a valid argument that the streets have become so dangerous where people have the need to carry weapons to protect themselves. II is also not valid

as carrying such dangerous weapons make other people vulnerable and unsafe, especially children.

Ques 7. ANS (D) Solution:

$$11 \times (17 - 11) = 11 \times 6 = 66; 9 \times (23 - 9) = 9 \times 14 = 126$$

$$\text{Similarly, } 17 \times (18 - 17) = 17 \times 1 = 17$$

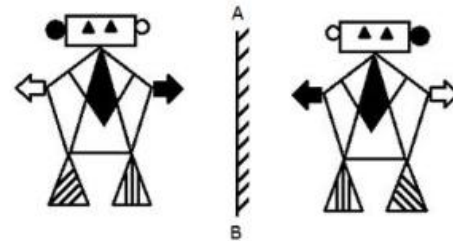
Ques 8. ANS (B) Solution:

The given figure is embedded in option figure (II).



Ques 9. ANS (D) Solution:

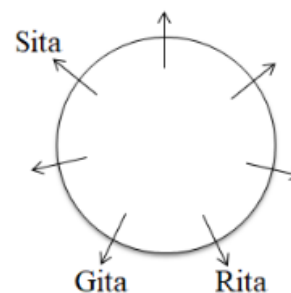
Option figure (IV) would resemble the correct mirror image of the given figure.



Ques 10. ANS (C) Solution:

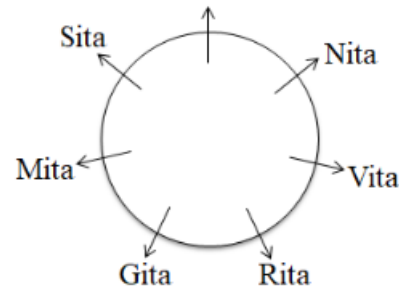
Rita sits third to the left of Sita.

Sita sits second to the right of Gita.

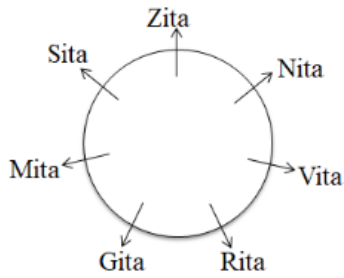


Mita sits fourth to the left of Vita.

Vita sits adjacent to Rita and Nita.



Now, only Zita is remaining.



Rita sits third to the right of Zita.

Ques 11. ANS (C) Solution:

From option (a),

$$7 \times 8 - 5 \div 72 + 9 = 64.93 \neq 53$$

From option (b),

$$7 - 8 + 5 \div 72 \times 9 = -0.375 \neq 53$$

From option (c),

$$7 \times 8 + 5 - 72 \div 9 = 56 + 5 - 8 = 53$$

From option (d),

$$7 \div 8 + 5 \times 72 - 9 = 351.8 \neq 53$$

Ques 12. ANS (C) Solution:

The gap between the numbers doubles each time.

$$5+2=7$$

$$7+4=11$$

$$11+8=19$$

$$19+16=35$$

$$35+32=67$$

Ques 13. ANS (C) Solution:

$$K + 2 = M, M + 3 = P, P + 2 = R, R + 3 = U,$$

$$P + 2 = R, R + 2 = T, T + 2 = V, V + 2 = X$$

$$X - 1 = W, W - 1 = V, V - 1 = U, U - 1 = T$$

$$H + 5 = M, M + 5 = R, R + 5 = W, W + 5 = B$$

Ques 14. ANS (D) Solution:

"are you happy" is coded as "tk dg lp"...(i)

"they are here" is coded as "lp fj ws"...(ii)

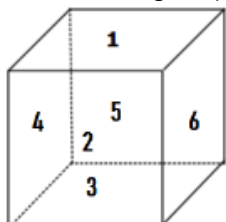
So "are"= lp

So code for "you"= "dg/ tk".

Ques 15. ANS (A) Solution:

From Cube I and II, 4 and 2 are common, so 1 will be opposite to 3.

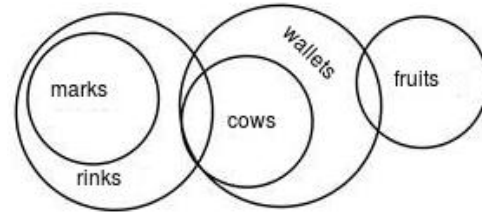
After combining the positions of cube II and III, we will get:



Ques 16. ANS (B) Solution:

The order is Penalize, Penalty, Pencil, Pendulum, Penetrate, Penultimate, thus 215364.

Ques 17. ANS (A) Solution:



Some rinks are walleets as some rinks are cows and all cows are walleets. So, conclusion I follows.

There is no definite relation between marks and cows. So, conclusion II don't follow.

Thus, only conclusion I follows.

Ques 18. ANS (D) Solution:

In the given flattened out cube, faces > and ?, faces # and @, faces & and < are opposite each other.

In cube A faces @ and # are shown adjacent and in cube C faces > and ? are shown adjacent to each other.

Hence, cube B is the only cube that can be formed by folding the given sheet along the lines.

Ques 19. ANS (C) Solution:

In the word MUMBAI, the consonants are replaced by the immediate previous alphabet while the vowels are replaced by the immediate next alphabet as per the English alphabetical series.

So, KOLKATA is converted into JPKJBSB

Ques 20. ANS (D) Solution:

It is given that April 27, 2019 was a Saturday.

May 29, 2019 is the 32nd day after April 27, 2019.

[ 32 - 3 days in April + 29 days in May ]

Each day of the week is repeated after 7 days. So after 32 days (4 weeks and 4 days) it will be a Wednesday.

Ques 21. ANS (B) Solution:

Option figure IV would resemble the correct form of the paper after unfolding.

Ques 22. ANS (B) Solution:

All bows are answers. No answer is a question. All answers are olives.

There is no direct relation between questions and olive. So, conclusion I doesn't follow.

No bow is a question as all bows are answers and no answer is a question. So, conclusion II follows.

Thus, only conclusion II follows.

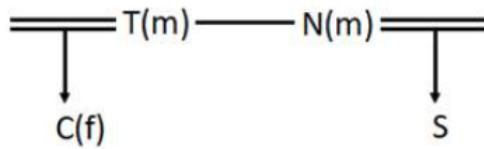
Ques 23. ANS (B) Solution:

An itinerary is a planned route or journey while traveling.

Similarly, in school, a scheduled timetable is followed for all the classes and events. Calendar is not a schedule for work, trains are not scheduled on tickets and maps are not schedules for towns.

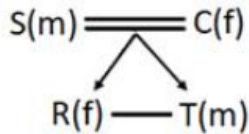
Ques 24. ANS (B) Solution:

$C * T \wedge N + S$  implies:



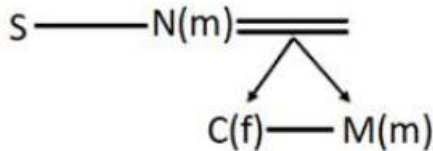
C and S are cousins, so it is invalid.

$S + R = T \Omega C$  implies:



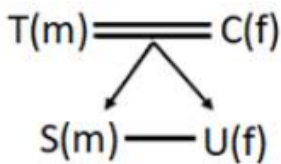
C is the wife of S, so it is the correct option.

$C = M \Omega N \wedge S$  implies:



C is the niece of S, so this option is invalid.

$S \Omega T + U * C$  implies:



C is the mother of S, so this option is invalid.

Ques 25. ANS (D) Solution:

The descending order of the designation is: Major general > Brigadier > Colonel > Major > Captain.

Ques 26. ANS (C) Solution:

The Pala School of miniature paintings was flourished during 750-1150 AD.

These paintings are generally found as a part of manuscripts and were generally executed on palm leaf or vellum paper.

The Buddhist monks mostly used them and as their religion practiced non-violence against all living beings, there was a stipulation to only banana or coconut tree leaves.

Ques 27. ANS (A) Solution:

Indian captain Rohit Sharma shattered a long-standing record held by MS Dhoni to become India's most prolific six-hitter in the history of ODI cricket. On January 18, at the Rajiv Gandhi Stadium in Hyderabad, Rohit achieved this remarkable feat during the first ODI between India and New Zealand.

Rohit Sharma gave India a blistering start with a knock of 34 runs in just 38 balls. The Indian captain's knock included two maximums, breaking MS Dhoni's long-standing record. Rohit is now India's leading six-getter in the history of ODI cricket, with a total of 125 sixes to his name.

Ques 28. ANS (D) Solution:

Biomass energy is energy generated or produced by living or once-living organisms.

Biomass is organic, meaning it is made of material that comes from living organisms, such as plants and animals.

The most common biomass materials used for energy are plants, wood, and waste. These are called biomass feedstocks. Biomass energy can also be a non-renewable energy source.

Ques 29. ANS (A) Solution:

फेडरेशन ऑफ इंडियन चैंबर्स ऑफ कॉमर्स ऐंड इंडस्ट्री (फिक्की) ने पूर्व आईएएस अधिकारी शैलेश पाठक को अपना नया महासचिव नियुक्त किया. शैलेश पाठक ने निजी क्षेत्र की कई कंपनियों में प्रमुख पदों पर रह चुके हैं. उन्होंने ग्रेजुएशन के बाद 1986 में IIM कलकत्ता से MBA की डिग्री हासिल की थी.

The Federation of Indian Chambers of Commerce and Industry (FICCI) appointed former IAS officer Shailesh Pathak as its new Secretary General. Shailesh Pathak has held key positions in many private sector companies. After graduation, he obtained MBA degree from IIM Calcutta in 1986.

Ques 30. ANS (D) Solution:

During the night the plants uptake oxygen and release carbon dioxide and this process is known as respiration.

Oxygen is released by the plants during photosynthesis in the presence of light.

The waste product generated during photosynthesis is oxygen and it exits through root cell walls, stomata, and other routes.

Ques 31. ANS (B) Solution:

A contemporary of Louis XIV of France, Shah Jahan ruled for thirty years. In his reign the famous Peacock Throne was made for the King. He built the Taj Mahal by the side of the Yamuna at Agra. Europeans like Bernier (French physician and traveller), Tavernier (French gem merchant and traveller), Mandelslo (German adventurer and traveller), Peter Mundy (English Trader) and Manucci (Italian writer and traveller) visited India during the reign of Shah Jahan and left behind detailed accounts of India.

Ques 32. ANS (A) Solution:

B.C. Dutt, a rating (the designation for the Indians employed in the various war-ships and elsewhere in the Royal Indian Navy) in the HMIS Talwar was arrested for scribbling 'Quit India' on the panel of the ship. This provoked a strike by the 1,100 ratings on the ship. This and the events that followed is called the Royal Indian Navy Revolt.

Ques 33. ANS (A) Solution:

Chandrashekhra Azad said "dushman ki goliyon ka hum samna karenge, azad hee rahein hain, azad hee rahenge".

Ques 34. ANS (C) Solution:

Factor income is basically the income earned by the four factors of production i.e. profit, rent, interest and wages but it does not include the transfer incomes/payments.

Hence GNP is the sum of GDP and factor income and it does not include transfer payments (free money) received from the rest of the world (for example remittances).

National Disposable Income = National Income + Transfer payments (free money).

Ques 35. ANS (D) Solution:

In 2000, Asha Bhosle was honoured with the Dadasaheb Phalke Award, India's highest award in the field of cinema. In 2008, she was honoured by the Government of India with the Padma Vibhushan, the second-highest civilian honour of the country.

Ques 36. ANS (C) Solution:

Bodies	Year of Establishment
Central Information Commission	2005
Central Vigilance Commission	1964
National Human Rights Commission	1993
National Commission for Women	1992

Ques 37. ANS (C) Solution:

As the river enters the plain it twists and turns forming large bends known as meanders. Due to continuous erosion and deposition along the sides of the meander, the ends of the meander loop come closer and closer.

The erosion and deposition of the sea waves gives rise to coastal landforms. Seawaves continuously strike at the rocks. Cracks develop. Over time they become larger and wider. Thus, hollow like caves are formed on the rocks. They are called sea caves. As these cavities become bigger and bigger only the roof of the caves remain, thus forming sea arches. Further, erosion breaks the roof and only walls are left. These wall-like features are called stacks.

The material carried by the glacier such as rocks big and small, sand and silt gets deposited. These deposits form glacial moraines.

An active agent of erosion and deposition in the deserts is wind. In deserts you can see rocks in the shape of a mushroom, commonly called mushroom rocks.

Ques 38. ANS (C) Solution:

भारत की निजी क्षेत्र की अंतरिक्ष कंपनियों के विकास और योगदान को बढ़ावा देने के लिए और इस तरह वैश्विक अंतरिक्ष अर्थव्यवस्था में भारत की हिस्सेदारी बढ़ाने के लिए, अहमदाबाद (गुजरात) में एक नई अंतरिक्ष प्रणाली डिजाइन प्रयोगशाला (Space Systems Design lab) का उद्घाटन किया गया है।

In order to promote the growth and contribution of India's private sector space companies and thereby increase India's share in the global space economy, a new Space Systems Design lab has been set up in Ahmedabad (Gujarat). has been inaugurated.

Ques 39. ANS (A) Solution:

Political organisation in Early Vedic period

Senani	Chief of army
Gramini	Head of village and fighting unit
Bali	Voluntary contribution made to king
Purohita	Priest

Ques 40. ANS (B) Solution:

In 1976, the 42nd amendment to the Constitution was passed. Among other things, this amendment inserted a list of Fundamental Duties of Citizens. In all, ten duties were enumerated. However, the Constitution does not say anything about enforcing these duties.

Ques 41. ANS (C) Solution:

Subhas Chandra Bose established the Provisional Government of Free India in October 1943 in Singapore.

The Provisional Government of Free India or, more simply, Azad Hind, was an Indian provisional government established in Japanese occupied Singapore during World War II.

It was created in October 1943 and supported by - as well as largely dependent on - the Empire of Japan.

Ques 42. ANS (B) Solution:

ओलिंपिक चैंपियन जेवलिन थ्रोअर नीरज चोपड़ा ने शुक्रवार को करियर का चौथा बेस्ट थ्रो किया और 88.78 मीटर के थ्रो के साथ गोल्ड अपने नाम किया। 25 वर्षीय चोपड़ा ने पिछले सितंबर में स्विट्जरलैंड में 2022 डायमंड लीग फाइनल ट्रॉफी जीती थी। नीरज चोपड़ा ने जब गोल्डन थ्रो किया तो वह बेहद शांत थे।

Olympic champion javelin thrower Neeraj Chopra made his career's fourth best throw on Friday and won gold with a throw of 88.78 meters. The 25-year-old Chopra had won the 2022 Diamond League Finals trophy in Switzerland last September. When Neeraj Chopra did the golden throw, he was very calm.

Ques 43. ANS (A) Solution:

Contour ploughing is a soil conservation technology that is practiced to mitigate the negative consequences of natural disasters on soil quality and composition.

It is performed by following the natural contours when tilling the soil, planting and cultivating.

Contour ploughing mitigates the impacts of floods, storms and landslides on the crops by reducing soil erosion up to 50 percent, controlling runoff water, increasing moisture infiltration and retention and thus enhancing soil quality and composition.

This practice describes contour ploughing and contour beds which can be constructed manually using on farm equipment.

Ques 44. ANS (D) Solution:

Prithviraj Chauhan was defeated in 1192 in the second battle of Tarain by Muslim leader Muhammad Ghori.

1st Battle of Tarain: The 2 armies met in 1191 at Tarain, about 70 miles (110 km) north of Delhi. Amid fierce fighting, Muhammad Ghori was seriously injured, and his forces withdrew in disarray.

Muhammad Ghori raised a far stronger army consisting of Persians, Afghans, and Turks; and in 1192 he advanced again on Tarain. Prithviraja mustered a vast force to meet Muhammad Ghori but infighting and enmity within the Rajput camp had weakened his position.

Ques 45. ANS (A) Solution:

The Union government cleared the appointment of Praveen Sharma, a 2005 batch officer from Indian Defence Service of Engineers (IDSE) as director, Ayushman Bharat Digital Mission. The appointment of Sharma was cleared after the ministry of defence recommended the name of Sharma for central deputation.

Ques 46. ANS (D) Solution:

Chief Minister Pinarayi Vijayan inaugurated a palm-leaf manuscript museum with modern audio-visual technology at the renovated Central Archives, Fort area in Thiruvananthapuram. It is being billed as the 'World's First Palm-Leaf Manuscript Museum'.

Set up by the Archives Department, the Rs.3 crore museum has eight theme-based galleries where select manuscripts from one of the biggest palm-leaf collections in the country will be displayed.

Ques 47. ANS (A) Solution:

Drafted by economist K.N. Raj, the First Five Year Plan was based on the Harrod - Domar model, which suggested that growth was dependent on two things.

First, high level of savings since higher savings enabled greater investment and second, a low capital-output ratio that ensured efficient investment and a higher growth rate.

The plan had a target of 2.1 per cent GDP growth for the fiscal year, however, it ended up recording a growth rate of 3.6 per cent that year.

Ques 48. ANS (D) Solution:

A Santhi Kumari, a 1989 batch IAS officer, became the first woman Chief Secretary of Telangana and assumed charge at BRKR Bhavan. After the DoPT relieved Somesh Kumar from the Telangana cadre, the government on Wednesday appointed Santhi Kumari as the sixth Chief Secretary of the State. She will be in service till April 2025.

Ques 49. ANS (A) Solution:

Odisha won the UN-Habitat's World Habitat Awards 2023 for Jaga Mission, a 5T initiative of the state.

Jaga mission is the land titling and slum upgrading program that aims at empowering the lives of slum dwellers.

Ques 50. ANS (D) Solution:

Balwant Rai Mehta Committee (1957) was the first committee that recommended the establishment of the scheme of 'democratic decentralization' which ultimately came to be known as Panchayati Raj. ' The first state to adopt Panchayat raj system was Rajasthan in nagaur city on the date of 2nd October 1959. ' The constitutional status was given by 73rd Constitutional Amendment Act, 1993.

Ques 51. ANS (C) Solution:

Area of square = (side of square)<sup>2</sup>

324/25 = (side of square)<sup>2</sup>

Side of square = 18/5

New side of square = 18/5 - 3/5 = 3 mm

Therefore, perimeter of the square of side 3 mm = 4 \* 3 = 12 mm

Ques 52. ANS (B) Solution:

Area of an equilateral triangle is given by -

$$A = \frac{\sqrt{3}}{4} a^2$$

a = side of equilateral triangle

$$36\sqrt{3} = \frac{\sqrt{3}}{4} a^2$$

a = 12m

Semi-perimeter =  $\frac{1}{2}$  (3 \* side) =  $\frac{1}{2}$  (36) = 18m

Ques 53. ANS (D) Solution:

First ten natural numbers = 1, 2, 3, 4, 5, 6, 7, 8, 9, 10

After adding 3 and 4 to each multiple of 2 except 10 and to each multiple of 5 respectively,

Numbers formed are 1, 5, 3, 7, 9, 9, 7, 11, 9, 14.

Required average = (1 + 5 + 3 + 7 + 9 + 9 + 7 + 11 + 9 + 14)/10 = 75/10 = 7.5

Ques 54. ANS (D) Solution:

$$X^3 + Y^3 + Z^3 - 3XYZ$$

$$= \frac{X+Y+Z}{2} [(X-Y)^2 + (Y-Z)^2 + (Z-X)^2]$$

$$= \frac{2.12 + 2.13 + 2.15}{2} [(-0.01)^2 + (-0.02)^2 + (-0.03)^2]$$

$$= 3.2 \left( \frac{1}{10000} + \frac{4}{10000} + \frac{9}{10000} \right)$$

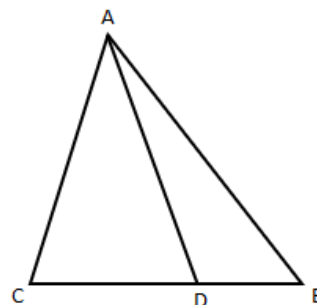
$$= \frac{3.2 \times 14}{10000}$$

$$= 448 \times 10^{-5}$$

$$= 4.48 \times 10^{-3}$$

Hence the value of k is -3.

Ques 55. ANS (B) Solution:



In  $\triangle ABC$  and  $\triangle ADC$ :

$$\angle BAC = \angle ADC$$

$\angle ACB = \angle ACD = \text{Common angle}$

$$\frac{BC}{AC} = \frac{AC}{CD}$$

$$\frac{BC}{15} = \frac{15}{9}$$

$$BC = 25 \text{ cm}$$

Ques 56. ANS (C) Solution:

Number of students enrolled in camp A in 2014, 2016 and 2017  
 $= 160 + 140 + 220 = 520$

Number of students enrolled in camp B in 2015, 2018 and 2019  
 $= 240 + 200 + 280 = 720$

Required ratio  $= 520:720 = 13:18$

Ques 57. ANS (B) Solution:

Let cost price  $= 100x$

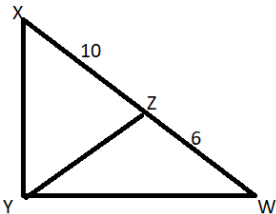
Marked price  $= 120\%$  of  $100x = 120x$

Selling price  $= 90\%$  of  $120x = 108x$

Profit amount  $= 108x - 100x = 8x$

Profit percent  $= (8x/100x) * 100 = 8\%$

Ques 58. ANS (C) Solution:



We know that,

$$YW^2 = WZ * WX$$

$$YW^2 = 6 * 16$$

$$YW = \sqrt{96}$$

$$YW = 4\sqrt{6} \text{ cm}$$

Ques 59. ANS (A) Solution:

Let the numbers are  $37a$  and  $37b$ .

We know that,

$$37a * 37b = 37 * 6919$$

$$a * b = 6919/37$$

$$a * b = 187$$

Possible pairs for the values of  $a$  and  $b = (187, 1)$  and  $(11, 17)$ .

Therefore,

Numbers are either  $(187 * 37, 37 * 1)$  or  $(11 * 37, 17 * 37)$

Given that both numbers are greater than 37.

So, numbers are  $(11 * 37, 17 * 37)$  or  $(407, 629)$ .

Required difference  $= 629 - 407 = 222$ .

Ques 60. ANS (B) Solution:

$$\frac{8 \cos A + 7 \sec A - \tan^2 A}{10 \sin \frac{A}{2}}$$

$$= \frac{[8 \cos 60^\circ + 7 \sec 60^\circ - \tan^2 60^\circ]}{10 \sin \left(\frac{60^\circ}{2}\right)}$$

$$= \frac{\left[\left(8 \times \frac{1}{2}\right) + (7 \times 2) - 3\right]}{\left[10 \times \frac{1}{2}\right]}$$

$$= \frac{[4 + 14 - 3]}{5}$$

$$= \frac{15}{5}$$

Ques 61. ANS (A) Solution:

The divisibility rule for 2 is the last digit should be an even number.

So,  $k$  should be 0 or 2 or 4 or 6 or 8.

The divisibility rule for 3 is the sum of all digits should be divisible by 3.

If  $k = 0$

$$7 + 2 + 0 + 4 + 6 + 0 + 0 = 19 \text{ [Not divisible by 3]}$$

If  $k = 2$

$$7 + 2 + 2 + 4 + 6 + 0 + 2 = 23 \text{ [Not divisible by 3]}$$

If  $k = 4$

$$7 + 2 + 4 + 4 + 6 + 0 + 4 = 27 \text{ [Divisible by 3]}$$

If  $k = 6$

$$7 + 2 + 6 + 4 + 6 + 0 + 6 = 31 \text{ [Not divisible by 3]}$$

If  $k = 8$

$$7 + 2 + 8 + 4 + 6 + 0 + 8 = 35 \text{ [Not divisible by 3]}$$

Ques 62. ANS (B) Solution:

Muskan alone can complete the whole work in  $= 48$  days

Ruma alone can complete the whole work in  $= 48 * \frac{8}{3} = 128$  days

Sima alone can complete the whole work in  $= 1 / (1/40 - 1/128)$   
 $= 640/11$  days

Ques 63. ANS (C) Solution:

The concept of cyclicity is used to identify the last digit of the number.

Cyclicity chart:



Number	Cyclicity	Unit digit values			
		Power 1	Power 2	Power 3	Power 4
0	1	0			
1	1	1			
2	4	2	4	8	6
3	4	3	9	7	1
4	2	4	6		
5	1	5			
6	1	6			
7	4	7	9	3	1
8	4	8	4	2	6
9	2	9	1		

(Note: when remainder is 0, power = cyclicity)

In  $456^{33}$ :

Unit digit of 436 is 6.

From the cyclicity chart, cyclicity of 6 is 1.

So, we have to divide the power of 436 i.e. 33 by 1.

After dividing 33 by 1, remainder = 0. So, power = cyclicity = 1

Unit digit of  $6^1 = 6$

In  $425^{29}$ :

Unit digit of 425 is 5.

From the cyclicity chart, cyclicity of 5 is 1.

So, we have to divide the power of 425 i.e. 29 by 1.

After dividing 29 by 1, remainder = 0. So, power = cyclicity = 1

In this case, unit digit of  $5^1 = 5$

In  $448^{22}$ :

Unit digit of 448 is 8.

From the cyclicity chart, cyclicity of 8 is 4.

So, we have to divide the power of 448 i.e. 22 by 4.

After dividing 22 by 4, remainder = 2. So, power  $\neq$  cyclicity

In this case, unit digit of  $8^2 = 4$

Therefore, sum of unit digit of  $(456^{33} + 425^{29} + 448^{22}) = 6 + 5 + 4 = 15$

Ques 64. ANS (A) Solution:

Speed of Sagun = Distance travelled/Time taken =  $(180/2.5)$  kmph = 72 kmph

Speed of Om = (Speed of Sagun \*  $3/4$ ) =  $(72 * 3/4)$  kmph = 54 km/h =  $54 * (5/18)$  m/sec = 15 m/sec

Speed of Mantra =  $(4/5) * 15$  m/sec = 12 m/sec

Distance covered by Mantra in 25 minutes =  $(12 * 25 * 60)$  m = 18000 m = 18 km

Ques 65. ANS (B) Solution:

Sum of interior angles of a polygon =  $(2n-4) * 90$

Sum of interior angles of a polygon with 12 sides =  $(2 * 12 - 4) * 90 = 1800^\circ$

Ques 66. ANS (C) Solution:

Total number of trees planted in Chandigarh in 2017 and in Kolkata in 2020 =  $2500 + 1750 = 4250$

Ques 67. ANS (C) Solution:

Total number of cars (in thousands) sold by company A during 2014 to 2018 =  $52 + 61 + 72 + 52 + 63 = 300$

Average number of cars sold by A during 2014 to 2018 =  $300/5 = 60$  thousands

Cars sold by company C in 2018 = 76 thousands

The total number of cars sold by company C in 2018 exceeds the average number of cars sold by company A during 2014 to 2018 by =  $76 - 60 = 16$  thousands = 16,000

Ques 68. ANS (D) Solution:

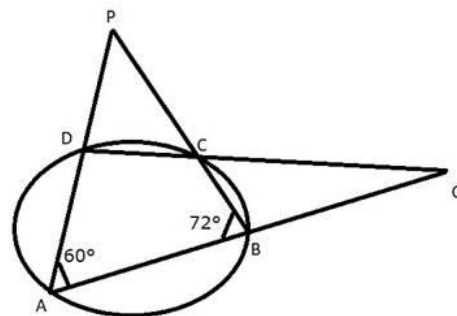
Prime numbers between 57 and 100 in which '9' appears are: 59, 79, 89, 97

Hence, '9' appears total 4 times in all the prime numbers between 57 and 100.

Ques 69. ANS (A) Solution:

$$\begin{aligned} & \operatorname{cosec}(60^\circ + A) - \sec(30^\circ - A) + \frac{\operatorname{cosec}49^\circ}{\sec41^\circ} \\ &= \operatorname{cosec}[90^\circ - (30^\circ - A)] - \sec(30^\circ - A) + \frac{\operatorname{cosec}(90 - 51)^\circ}{\sec41^\circ} \\ &= \sec(30^\circ - A) - \sec(30^\circ - A) + \frac{\sec41^\circ}{\sec41^\circ} \\ &= 0 + 1 \\ &= 1 \end{aligned}$$

Ques 70. ANS (A) Solution:



In  $\Delta APB$

$$\angle PAB + \angle ABP + \angle APB = 180^\circ$$

$$\angle APB = 180^\circ - 60^\circ - 72^\circ = 48^\circ$$

$$\angle APB = \angle DPC = 48^\circ$$

We know that in cyclic quadrilateral, sum of opposite angles is  $180^\circ$ .

$$\angle ABC + \angle ADC = 180^\circ$$

$$\angle ADC = 180^\circ - 72^\circ = 108^\circ$$

In  $\Delta ADQ$

$$\angle DAQ + \angle ADQ + \angle AQD = 180^\circ$$

$$\angle AQD = 180^\circ - 60^\circ - 108^\circ = 12^\circ$$

$$\text{Difference between } \angle DPC \text{ and } \angle BQC = 48^\circ - 12^\circ = 36^\circ$$

Ques 71. ANS (D) Solution:

$$\text{Speed of car} = (90/50) * (1000/60) = 30 \text{ m/s}$$

Ques 72. ANS (A) Solution:

Let number of students in the institute = X

96 students did not learn any coding language.

$$X * (100 - 11 - 26 - 16 - 15)/100 = 96$$

$$\Rightarrow X = 96/32 * 100$$

$$\Rightarrow X = 300$$

Ques 73. ANS (A) Solution:

Work done by a man in a day =  $1/3$

Work done by a woman in a day =  $1/4$

Work done by a boy in a day =  $1/12$

Let, number of boys needed to complete the work =  $a$

According to the question,

$$1 \times (1/3) + 1 \times (1/4) + a \times (1/12) = 1$$

$$1/3 + 1/4 + a/12 = 1$$

$$a/12 = 1 - 1/3 - 1/4$$

$$a/12 = 5/12$$

$$a = 5$$

Ques 74. ANS (A) Solution:

Let price of phone for A =  $100x$

Price of phone for B = 125% of  $100x = 125x$

Price of phone for C = 90% of  $125x = 112.5x = 5625$

$$x = 50$$

Hence, amount paid by A for the phone will be  $100x$  which is equal to ₹5000.

Ques 75. ANS (A) Solution:

Let the three parts be  $4n$ ,  $2n$  and  $3n$  respectively. Then,

$$405 = 4n + 2n + 3n$$

$$n = 45$$

$$\text{Now, } 4n = 4 \times 45 = 180$$

$$2n = 2 \times 45 = 90$$

$$3n = 3 \times 45 = 135$$

Therefore, parts are: 180, 90, 135

Ques 76. ANS (A) Solution:

The idiom 'A damp squib' means 'An event which people think will be exciting but which is disappointing when it happens'.

Hence option a) is the correct answer. 'Sordid' means 'dirty and unpleasant / morally wrong'. 'Dark horse' means 'A candidate or competitor about whom little is known but who unexpectedly wins or succeeds'. 'Cross swords' means 'Have an argument or dispute'.

Ques 77. ANS (C) Solution:

The given active voice is in present indefinite tense.

While converting, the subject and the object of the active voice change into the object and the subject of the passive voice and the past participle form of the verb is used in the passive voice.

The subject and object of the given active voice are 'you' and 'what I mean' respectively. So,

Also, the conveyed meaning and the tense of the active voice should not be changed.

The given sentence is an interrogative sentence. The answer to this question will be 'yes' or 'no'. Therefore, in passive voice, the sentence should be interrogative.

The sentence structure of the interrogative passive voice is:

Is/am/are + Subject [what I mean] + Past participle verb [understood] + by + Object [you]

Therefore, the correct sentence is: Is what I mean understood by you?

Hence, option (c) is the correct answer.

Ques 78. ANS (A) Solution:

Option a) is the right answer.

Option b) is eliminated as it does not convert the simple present form of verb 'think' into past simple 'thought'. Option c) is eliminated as it is grammatically incorrect to use the pronoun 'she', as an objective pronoun (her) should be used here. Option d) is eliminated as it does not change the simple present tense into simple past tense.

Ques 79. ANS (C) Solution:

'Indelible' - that cannot be removed or washed out

'Biopsy' - An examination of tissue removed from a living body to discover the presence, cause, or extent of a disease

'Pedantic' - Excessively concerned with minor details or rules.

'Crusade' - A vigorous campaign for political, social, or religious change

Hence, option c) will be the correct answer.

Ques 80. ANS (D) Solution:

'Sanguine' - optimistic or positive, especially in an apparently bad or difficult situation; blood-red. 'Cheerful' - noticeably happy and optimistic; causing happiness by its nature or appearance; 'confident' - feeling or showing certainty about something; showing confidence in oneself or one's abilities or qualities; 'upbeat' - cheerful; optimistic; (in music) an unaccented beat preceding an accented beat; 'demoralized' - having lost confidence or hope; disheartened.

Thus, 'demoralized' is the only word that can be an antonym of the word 'sanguine'. Hence, option (d) is the correct answer.

Ques 81. ANS (A) Solution:

'Patronizing' - apparently kind or helpful but displaying a feeling of superiority; condescending. 'Condescending' - having or showing an attitude of patronizing superiority; 'humble' - having or showing a modest or low estimate of one's importance; 'reverent' - feeling or showing deep and solemn respect; 'gracious' - courteous, kind, and pleasant, especially towards someone of lower social status.

Thus, 'condescending' is the only word that can be a synonym of the word 'patronizing'. Hence, option (a) is the correct answer.

Ques 82. ANS (C) Solution:

In formal English, once a sentence uses the indefinite pronoun 'one', it must continue to use the same pronoun (or its supplementary forms - one's, oneself). It is considered incorrect to replace it with another pronoun such as 'he' or 'she'. For example: "One can glean from this whatever one may". So, options (a) and (b) are incorrect. 'One' is a singular pronoun. So, we cannot use the verb 'have' with it. Therefore, option (d) is also incorrect.

Hence, option (c) is the correct answer.

Note:

Indefinite Pronouns: Indefinite pronouns refer to people, places and things in a general way (do not talk about any specific



person, place or thing). Some typical indefinite pronouns are: all, another, any, anybody/anyone, anything, each, everybody/everyone, everything, few, many, nobody, none, one, several, some, somebody/someone.

Ques 83. ANS (B) Solution:

The given blank requires coordinating conjunction as the two nouns that it intends to connect are at equal footing in the given context. The only coordinating conjunction in the given options is "and" and therefore, is the correct answer. Option a), c) and d) are incorrect because they are subordinating conjunctions which are used to connect the subordinating clause to the main clause and since there is no such division in the given sentence, these are incorrect. Therefore, the correct answer is option b).

Note:

Coordinating conjunctions join items that are of equal importance in a sentence. Also, it joins two words of equal grammatical rank.

Examples include: And, but, nor, or, but, otherwise, also, either-or, neither-nor, etc. are the chief coordinate conjunctions.

Subordinating conjunctions connect subordinate clauses (dependent clauses) to the main clause of a sentence.

Examples include: after, because, if, another, though, till, than, lest, etc.

Ques 84. ANS (A) Solution:

'Oculist' means a medical doctor specializing in the eye, deficiencies of vision requiring correction, and diseases.

'Optician' means a person who tests eyesight and sells spectacles.

'Obstetrician' means a physician who assists women during childbirth.

'Optimum' means the best possible result or the best set of conditions to get good results.

Hence, (a) is the correct answer.

Ques 85. ANS (B) Solution:

After reading all the five parts we can observe that the fixed part and C form a pair as the fixed part has the subject and the verb, while C has the objective pronoun which describes whom the messengers found. 'E' also contains the objective pronoun but it does not form a meaningful phrase with the fixed part. So, C should be placed at the second position. D can be placed after C as it further explains what the person was doing in his house (talking). D and B form a pair too, as D ends with a possessive determiner 'his' and B starts with a common noun. E can be placed at the last as it explains what 'he' was teaching his friends. Rearranging the four jumbled parts in the order of CDBE makes a meaningful sentence. Hence, (b) is the correct answer.

The final sentence would be: The messengers found him in his house, talking to his friends and teaching them some wisdom.

Note: Objective Pronouns: The pronouns me, you, us, him, her, it, and them are called objective pronouns because they act as the objects of verbs and prepositions: Anjali drove us home. Possessive Determiners/Adjectives: Words like 'my', 'our', 'your', 'his', 'her', 'its', and 'their' are known as possessive adjectives (or possessive determiners). They come before nouns and indicate ownership of the noun. Example: "The teacher asked the students to open their drawing books."

Ques 86. ANS (D) Solution:

After reading all the five parts we observe that, E should be placed at the second position after the fixed part as it describes what did 'he' (the subject) learn from his teacher. E and C form a pair as E ends with the subject 'teacher' and C starts with the most appropriate verb phrase that could be associated with a teacher (could teach). C and B also form a pair as C ends with the pronoun 'he' and B starts with a verb followed by describing his qualities. D should be placed at the last after B as D adds another quality of him. Rearranging the four jumbled parts in the order of ECBD makes a meaningful sentence. Hence, (d) is the correct answer.

The correct sentence would be: He learned soon all that his teacher could teach, because he was a quick learner with a good memory.

Ques 87. ANS (A) Solution:

(d) doesn't make sense here. (b) and (c) are also contextual misfit; and are therefore, eliminated. The author talks about changing the life by following some steps/thing. Therefore, 'change' would be the appropriate word in the blank. (a) is the right answer.

Ques 88. ANS (C) Solution:

The blank requires a noun to be filled, which 'small' has to qualify. (a), (b) and (d) doesn't make any sense here. The author talks about starting small in the previous statement. The best word to extend the meaning would be 'step' in the present context. Hence, (c) is the correct answer.

Ques 89. ANS (D) Solution:

The author talks about taking small steps at a time to make an overall life better. Hence, 'slow' would be the appropriate fit here. Hence, (d) is the correct answer.

Ques 90. ANS (B) Solution:

The author talks about changing of life in general and not of thought or sense in particular. (a) and (c) are eliminated. (d)-plural; eliminated. 'Life' is the correct usage here; hence, (b) is the correct answer.

Ques 91. ANS (A) Solution:

The author is expecting an answer to the question asked in the previous sentence where the blank is present. 'Know' will be the correct usage here. Hence, (a) is the correct answer.

Ques 92. ANS (D) Solution:

The correct spelling is "despise" which means "hate or loathe". Option D is the correct answer.

Ques 93. ANS (B) 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' is necessary while changing the voice of the sentence from Passive to Active.

In Active voice (look at the options), it should be in imperative form.

An imperative sentence is used to express order, request, suggestion, etc.

In Passive voice, the sentence begins with "Let".

Here, the imperative sentence in Active voice is an order.

The format in Passive voice is: Let + Subject (Objective case) + be + V3.

Thus, the format in Active voice is: V1 + Object.

For example:

Let the match be started. (Passive)

Start the match. (Active)

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

Therefore, the correct answer is: (b) Send me the contract.

Ques 94. ANS (A) Solution:

In a fix: in a difficult situation.

It is in context to the fact that when Albert's car broke down, he was in a difficult situation.

The rest of the meanings are contextually incorrect.

Therefore, the correct answer is: (a) in a difficult situation.

Ques 95. ANS (C) Solution:

The idiom 'throw caution to the winds' means to do something risky. E.g. I threw caution to the winds, and decided to invest my money in the scheme. C is the right answer.

Ques 96. ANS (B) Solution:

The use of the pronoun 'they' is incorrect. 'They' is used to refer to two or more people or things that have been previously mentioned. Here, we will use 'it'. The pronoun 'it' is used for referring to a fact or a situation. Also, past continuous tense is given in the initial part of the sentence so 'start' will be replaced by 'started'.

Hence, option (b) is the correct choice.

Ques 97. ANS (D) Solution:

'Neither' denotes 'none of two things/persons' so it is followed by a singular form of the verb. So, the singular verb 'was' will replace the plural verb 'were' to make a grammatically right sentence. Also, the syntax is - "Neither of + plural noun + singular verb."

Hence, option (d) is correct.

Ques 98. ANS (D) Solution:

Nearly-Very close to; almost.

Roughly- In a manner lacking gentleness; harshly or violently.

Rarely- Not often; seldom.

Exactly- Used to emphasize the accuracy of a figure or description.

The meaning of the word 'vaguely' is 'in a way that is uncertain, indefinite or unclear; roughly'. Among the given options, the word that is opposite in meaning to the word 'vaguely' is option (d) 'exactly'.

Hence, the correct answer is option (d).

Ques 99. ANS (B) Solution:

Option B is the right answer, as the correct preposition to be used here is 'from (her), not 'of'. This phrase means to hide something from someone. Option D is eliminated. Options A and C are eliminated, as they contain no errors.

Ques 100. ANS (A) Solution:

The phrase 'one of the' is used to emphasize someone/something that is a part of a group. So, the error is in option a) where 'refrain' needs to be replaced by 'refrains' as the sentence talks about a group of common phrases that are often repeated. Hence, the answer is option a).