CHAPTER-3
PRELIMINARY QUESTIONS & ANSWERS OF GS-II OCS- 2022

1. Find the greatest 6- digit number among the following which is exactly divisible by 24, 15 and 36.

(A) 999999
(B) 999720
(C) 999750
(D) 999820

1. B)

To find the greatest 6-digit number that is exactly divisible by 24, 15, and 36, we need to find the least common multiple (LCM) of these three numbers and then find the greatest 6-digit number that is divisible by this LCM.

First, let's find the LCM of 24, 15, and 36.

The prime factorization of each number is as follows:

• 24 = 2^3 * 3
• 15 = 3 * 5
• 36 = 2^2 * 3^2

To find the LCM, we take the highest powers of all the prime factors involved:

LCM = 2^3 * 3^2 * 5 = 8 * 9 * 5 = 360

Now, we need to find the greatest 6-digit number that is divisible by 360. The largest 6-digit number is 999,999.

To find the greatest 6-digit number divisible by 360, we divide 999,999 by 360 and take the integer part of the result. Therefore, the greatest 6-digit number that is exactly divisible by 24, 15, and 36 is:

Divide 999,999 by 360: 999,999 ÷ 360 = 2777.775

So the greatest 6-digit number that is exactly divisible by 24, 15, and 36 is:

2777 * 360 = 999,720.

2. Which of the following is /are true for x – 7, y – 5, z – 3?

(A) xyz + 3 is composite

(B) xyz – 4 is prime
(C) x + y + z + 10 is a perfect square
(D) All of the above

2. D)

Let's substitute the values of XX, YY, and ZZ into the expressions:

1. XYZ+3=735+3=738
2. XYZ−4=735−4=731
3. X+Y+Z+10=7+5+3+10=25

Now, we can check each statement:

• The number 738 can be factored as 2×3×3×412×3×3×41. Since it has factors other than 1 and itself, it is a composite number. Therefore, the statement "XYZ + 3 is composite" is true.

• The number 731 can be factored as 17×4317×43. It has no other factors than 1 and itself. Therefore, it is a prime number. So, the statement "XYZ - 4 is prime" is true.

• The sum of the values XX, YY, ZZ, and 10 is 25. 25 is a perfect square because its square root is 5. Thus, the statement "X + Y + Z + 10 is a perfect square" is true.

Thus, all the given statements are true for the values X=7$X=7$, Y=5$Y=5$, and Z=3$Z=3$:

• XYZ+3$XYZ+3$ is composite.
• XYZ−4$XYZ−4$ is prime.
• X+Y+Z+10$X+Y+Z+10$ is a perfect square.

3. What is the least positive integer by which 750 should be multiplied so that the product is a perfect cube ?

(A) 12
(B) 24
(C) 36
(D) 48

3. C)

To determine whether 750×36 is a perfect cube, we first find the prime factorizations of 750 and 12:

750=2×3×5^3

36=2^2×3^2

This simplifies to:

750×12=2^3×3^3×5^3

Since each of the exponents is a multiple of 3, 750×36 is indeed a perfect cube.

4. **A perfect square number can never have the digit _____ at the unit's place.**

(A)   4
(B)   5
(C)   8
(D)   9

4. C)

To prove that a perfect square number can never have the digits 2, 3, 7, or 8 at the units place, we will use the concept of modular arithmetic.

For any integer *n*, we can represent it as one of the following forms:

1.   4*k*
2.   4k+1
3.   4k+2
4.   4k+3

Let's consider each of these cases and observe the possible remainders when squared.

o   If n=4k, then n2=(4k)2=16k2So, the square is a multiple of 16 and ends with 6.

o   If n=4k+1, then n2=(4k+1)2=16k2+8k+1=4(4k2+2k)+1So, the square is of the form 4m+1 and ends with 1.

o   If n=4k+2, then n2= (4k+2)2 =16k2+16k+4=4(4k2+4k)+4. So, the square is of the form 4m+4 and ends with 4.

o   If n=4k+3, then n2=(4k+3)2 =16k2+24k+9= 4(4k2+6k)+9. So, the square is of the form 4m+1 and ends with 9.

From the above observations, it is evident that the square of any integer can never end with 2, 3, 7, or 8. This is because the squares can only end with 0, 1, 4, 5, 6, or 9, but never with 2, 3, 7, or 8.

5. **The value of $\sqrt{0.00059049}$ is**

(A)   0.243
(B)   0.0243
(C)   0.00243
(D)   0.000243

5. B)

First, compute the square root of 0.00059049:

(0.00059049)^1/2=(59049/100000000)^1/2=(59049)^1/2/10000=243/10000=0.0243

6. **Which of the following statements is true?**

(A)   All natural numbers are also whole numbers
(B)   There is no smallest whole number
(C)   The greatest whole number is 1000
(D)   1 is the smallest whole number

6. A)

All natural numbers are whole numbers. Whole numbers include all the natural numbers from 0 onwards. So, when we talk about natural numbers, we are referring to the set of numbers {0, 1, 2, 3, 4, ...}, and when we talk about whole numbers, we are referring to the set of numbers {0, 1, 2, 3, 4, ...} as well. Therefore, all natural numbers are indeed whole numbers.

7. **12*(15+34)=(12*15)+(12*34), this is known as**

(A)   Distributivity of multiplication over addition
(B)   Closure property
(C)   Associativity of addition and multiplication
(D)   Commutative property

7. A)

The expression represents the distributive property of multiplication over addition. This property is one of the fundamental properties of arithmetic and algebra, known as the distributive property. It states that when a number is multiplied by the sum of two numbers, the result is the same as if the number were multiplied separately by each of the two numbers and then added. This property is applicable in both arithmetic and algebra and forms the basis for many mathematical operations and simplifications.

8. **In the following series how many such odd numbers are there which are**

divisible by 3 or 5 then followed by odd numbers and then also followed by even numbers :

12,	19,	21,	3,	25,	18,	35,
20,	22,	21,	45,	46,	47,	48,
9,	50,	52,	54,	55,	56	

(A) 0
(B) 1
(C) 2
(D) 3

8. C)

The numbers that are odd and divisible by 3 or 5 are: 21, 3, 25, 45, 55

Following this, we look for the odd numbers which are followed by another odd number, and the count is 21, 3

Out of these, the numbers that are followed further by even numbers are: 3, 21

9. **Aaradhya, Reyansh and Akshit start at the same time in the same direction to run around a circular stadium. Aaradhya completes one round in 252 seconds, Reyansh in 308 seconds and Akshit in 198 seconds. After what time will they meet again at the starting point ?**

(A) 42 minutes 12 seconds
(B) 44 minutes 30 seconds
(C) 45 minutes 40 seconds
(D) 46 minutes 12 seconds

9. D)

We find the LCM of 252, 308, and 198.

Prime factorization of the given numbers: $252 = 2^2 \times 3^2 \times 7$ $308 = 2^2 \times 7 \times 11$ $198 = 2 \times 3^2 \times 11$

$LCM = 2^2 \times 3^2 \times 7 \times 11 = 2772$

So, they will meet again at the starting point after 2772 seconds.

10. **Let the positions of the first two digits in each number of the following set are reversed:**

738   359   456   342   986

Find the difference between the first digits of the highest number and lowest number.

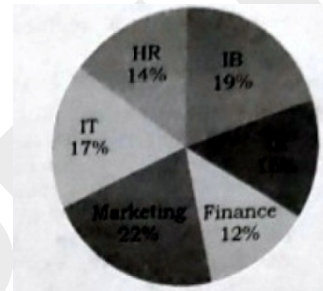(A) 4
(B) 5
(C) 6
(D) 7

10. B)

New series: 378 539 546 432 896

Highest number: 896 (first digit is 8)

Lowest number 378 (first digit is 3)

Difference: 5

11. **The pie chart given below shows the percentage wise breakup of students in terms of specialization in MBA :**

If the total number of students is 8000, what is the total number of students having specialization in IR, Marketing and IT ?

(A) 4640
(B) 4400
(C) 4260
(D) 4080

11. B)

IR: 1280

IT: 1360

Marketing: 1760

Total: 4400

12. **Which of the following statements is sufficient to answer the question ?**

Question: Find the total number of students in a class if the class has some boys and some girls.

Statements:

(i) The number of boys in a class is 10
(ii) The number of girls in a class is 2 more than the number of boys.
(A) Only statements (i) is sufficient
(B) Either statement (i) or (ii) is sufficient
(C) Both statements (i) and (ii) are sufficient

(D)   Only statement (ii) is sufficient

12. C)

Number of boys=10

Girls= 10+2=12

Total= 22

Hence both are sufficient

13.   **The table below shows the daily income (in Rs.) of 50 persons. Study the table carefully and answer the question given below :**

Income(Rs)	No. of persons
Less than 300	12
Less than 350	26
Less than 400	34
Less than 450	40
Less than 500	50

How many persons earn 300Rs or more but less than 400Rs?

(A)   8
(B)   12
(C)   22
(D)   38

13. C)

Between 300 and 350 are 26-12=14

Between 350 and 400 are 34-26=8

Total=22

14.   **Five distinct shops sold varying quantities of umbrellas and raincoats in a specific month. The table given below provides the sales figures for each shop:**

Shop	Number of umbrellas sold	Number of raincoats sold
A	250	100
B	120	140
C	200	260
D	350	320
E	250	300

If both number of umbrellas and the number of raincoats sold by shop F is 40% more than that by shop E then what is the difference between the number of umbrellas and the number of raincoats sold by shop F ?

(A)   90
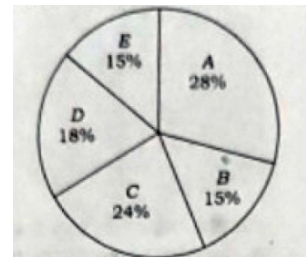(B)   70
(C)   60
(D)   50

14. B)

Number of umbrellas sold by F= 1.4 times of E=350

Number of raincoats sold by F= 1.4 times of E=420

Difference= 70

15.   **The pie chart given below shows the percentage of students in five schools and the table below shows the ratio of boys and girls in each school. Study the pie chart and the table and answer the question that follows :**

School	A	B	C	D	E
Girls : Boys	3:4	2:3	5:3	1:2	4:1

If the total number of girls from all the five schools is represented as the pie chart , what will be the measure of the sector angle (to the nearest integer) corresponding to school B?

(A) 42^0
(B) 32^0
(C) 48^0
(D) 58^0

15. C)

Let total number of students in all schools be x

Number of girls in each school:

A=3/7*0.28*X=0.12x

B= 2/5*0.15*x=0.06x

C=5/8*0.24x=0.15x

D=1/3*0.18x=0.06x

E= 4/5*0.15x= 0.12x

Total=0.45x

B angle= (0.06/0.45)*360=48

16. **In the light of data sufficiency, choose the appropriate option. What will be the total weight of 10 poles, each of the pole is of same weight?**

Statements:

(i) One fourth of the weight of each pole is 5kg.

(ii) The total weight of three poles is 20kg more than the total weight of two poles.

(A) Statement (i) alone is sufficient while statement (ii) alone is not sufficient

(B) Statement (ii) alone is sufficient while statement (i) alone is not sufficient

(C) Either (i) or (ii) is sufficient

(D) Neither (i) nor (ii) is sufficient

16. C)

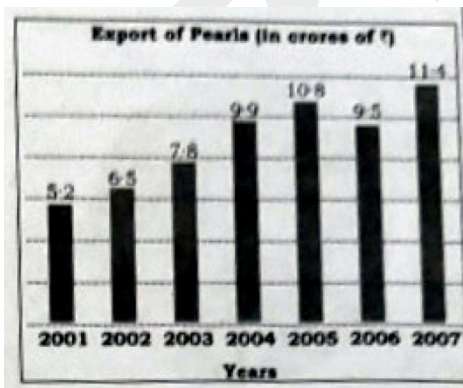In statement one, we can calculate weight of each pole= 20 kg. Hence weight of 10 poles= 200kg

In statement two,

Weight of 3 poles= 20+ weight of 2 poles

Weight of one pole is 10 kg.

So either statement is sufficient

17. **Study the bar diagram given below and answer the questions :**

What was the percentage increase in export from 2006 to 2007?

(A) (50/3)%

(B) 20%

(C) 19%

24%

17. B)

Increase in export= 11.4-9.5= 1.9

% increase= (1.9/9.5)*100= 20%

18. **The following table gives the percentage profit earned by two companies A and B over six years, Answer the question given below:**

Year	2008	2009	2010	2011	2012	2013
A	25	45	35	50	30	40
B	40	35	50	45	40	45

If the income of company B in 2010 and 2011 were in the ratio of 2:3 respectively, then what was the ratio of expenditures of that company in these two years ?

(A) 9:12

(B) 10:29

(C) 20:27

(D) 29:45

18. D)

Profit %= (Income-Expenditure)/Expenditure*100

Let P1 be profit % in 2010

50/100=(I1-E1)/E1

½=(I1/E1)-1
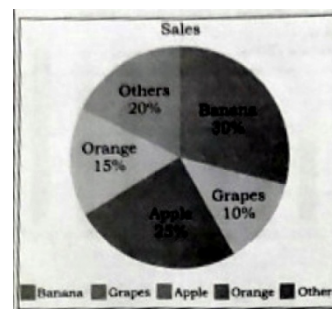
I1/E1=3/2

Let P2 be profit % in 2011

Similarly, I2/E2=29/20

E1/E2=29/45

Direction (Q. Nos. 19 & 20): Answer the questions based on the following pie chart that shows the sale of different fruits in a day for a shop :

19. Find the difference between sales of grapes and oranges.

(A) 30kg
(B) 45kg
(C) 54kg
(D) 60kg

19. Question is incorrect.

However if we take total= 1200 kg as given in other sets

Difference=5% of 1200= 60kg

D*

20. If a total of 1200kg of fruits were sold in a day , calculate the amount of bananas sold (in kg).

(A) 360kg
(B) 320kg
(C) 300kg
(D) 280kg

20. A)

Amount of bananas=30% of 1200kg=360kg

Direction (Q. Nos. 21-25) : Read the following passage and answer the question that follow. Your answers to these questions should be based on the passage only :

Passage 1

The global refugee crisis has reached alarming proportions, with millions of people fleeing their homes due to conflict, persecution and instability. Data and statistics underscore the magnitude of this crisis, shedding light of immense challenges faced by both refuges and host countries.

As the most recent UNHCR report, there are over 82 million forcibly displaced people worldwide. This include refugees, asylum seekers and internally displaced persons. The number of refugees alone has surpassed 26 million , with nearly 80% of them hosted by neighbouring countries in regions facing their own challenges.

Syria remains one of the most significant contributors to the refugee crisis. Since the onset of its civil war in 2011, an estimated 6.7 million Syrians have fled their country. Afghanistan is another major source, with over 2.7 million regees, driven by ongoing conflict and insecurity. Venezuela's political and economic turmoils have resulted in a staggering 5.4 million people seeking refuges in neighbouring countries.

Developing ntions shoulder a substantial burden in hosting refugees. Countries like Turkey, Pakistan and Uganda are among the top refugee-hosting nations. Turkey alone hosts more than 3.6 million refugees, primarily from Syria, placing significant strains on its resources and infrastructure.

The international community faces a collective challenge in addressing this crisis. Providing humanitarian aid, ensuring access to education and healthcare and facilitating resettlement are vital components of a comprehensive response. However, strained resources, political complexities and the growing trend of anti-immigrant sentiment in some host countries present obstacles to find effective solutions.

In conclusion, the current international refugee crisis is a complex issue with far-reaching implications. Data and statistics highlight the staggering numbers of displaced individuals and the significant challenges faced by both refugees and host countries. Addressing this crisis requires international cooperation, policy reforms and a commitment to upholding human rights in the face of adversity.

21. **What challenge is faced by host countries in addressing the refugee crisis?**

(A) Ample resources and infrastructure
(B) Low levels of international cooperation
(C) Anti-immigrant sentiment and strained resources
(D) Ignoring human rights concerns

21. C)

Last line of the passage mentions that strained resources and anti-immigrant sentiments are the challenges.

22. **How many forcibly displaced people are there globally, according to the UNHCR report?**

(A) 26 million

(B) 50 million

(C) 82 million

(D) 100 million

22. C)

First line of the 2nd para mentions it

23. **Which country has hosted the largest number of refugees from Syria?**

(A) Turkey

(B) Jordan

(C) Lebanon

(D) Iraq

23.A)

Fourth paragraph mentions it.

24. **What is the major driver of the refugee crisis in Afghanistan?**

(A) Economic opportunities

(B) Religious freedom

(C) Ongoing conflict and insecurity

(D) Political stability

24. C)

Third para mentions that it is driven by ongoing conflict and insecurity.

25. **Among the listed countries, which one hosts the most refugees?**

(A) Germany

(B) Unitated states

(C) Turkey

(D) Canada

25. C)

Question 23rd and 24th are similar. Fourth paragraph mentions it. Turkey hosts maximum refugees including those from Syria.

Direction (Q. Nos. 26-30): Read the following passage and answer the questions that follow. Your answers to these to these questions should be based on the passage only:

Passage 2

Genetic engineering, a revolutionary branch of biotechnology, continues to evolve rapidly, transforming the way we approach medicine, agriculture and various scientific endeavours. Recent developments in this field highlight both the immense potential and ethical considerations that come with the power to manipulate DNA.

In the medical realm, gene editing technologies like CRISPR- Cas9 have gained prominence. These tools offer unprecedented precision in modifying genes, holding promise for treating genetic disorders. In a ground breaking clinical trial, researchers successfully used gene editing to treat sickle cell anaemia. The patient's own modified cells were reintroduced into their body, resulting in reduced symptoms and an improved quality of life.

In agriculture, genetic engineering is driving advancements in crop production and food security. The development of Genetically Modified(GM) crops has enabled plants to resist pests, withstand harsh climates and improve nutritional content. For instance, GM rice has been biofortified to contain higher levels of essential vitamins, potentially combating malnutrition in regions where rice is a staple food.

However, these advancements also raise ethical concerns. The potential for creating "designer babies" through gene editing has sparked debates about the boundaries of genetic manipulation. The question of whether it's ethical to alter human DNA to enchance physical or cognitive traits continues to challenge bioethicists, policymakers and society at large.

Data indicates the exponential growth of genetic engineering research. In the past decade, the number of scientific publications related to CRISPR technology has multiplied significantly. In 2010, there were approximately 150 CRISPR-related publications; by 2020, that number had soared to over 9000. This surge demonstrates the profound impact of genetic engineering on the scientific community. As we navigate this brave new world of genetic engineering, striking a balance between innovation and ethical considerations remains paramount. The potential cure genetic diseases, enhance food security and make leaps in scientific

understanding is immense. However, careful consideration and collaboration are necessary to ensure that the benefits are realized while addressing the ethical complexities that accompany these technological breakthroughs.

26. **How has the number of CRISPR- related scientific publications changed over the past decade?**

(A) It has remained constant

(B) It has decreased significantly

(C) It has increased moderately

It has multiplied exponentially

26. D)

Last para mentions that in 2010, there were 150 publications which increased to 9000 by 2020.

% increase is 5900%

First line mentions it.

27. **Which gene editing technology has gained prominence recently?**

(A) PCR

(B) CRISPR-Cas9

(C) DNA sequencing

(D) Microarray analysis

27. B)

First line of 2nd para mentions it.

28. **In a clinical trial, gene editing was successfully used to treat which genetic disorder?**

(A) Cystic fibrosis

(B) Huntington's disease

(C) Sickle cell anaemia

(D) Diabetes

28. C)

2nd para mentions it.

29. **What is one of the benefits of Genetically Modified (GM) crops?**

(A) Increased susceptibility to pests

(B) Reduced nutritional content

(C) Improved crop yield and pest resistance

(D) Longer growth periods

29. C)

3rd para mentions it.

30. **What ethical concern is associated with genetic engineering?**

(A) Improving food security

(B) Enhancing cognitive traits

(C) Treating genetic disorders

(D) Preventing malnutrition

30. C)

4th para mentions it.

Direction(Q.Nos.31 & 32): In questions given below, a part of the sentence is italieised and underlined. Below are given alternatives to the italieised part which may improve the sentence. Choose the correct alternative. In case no improvement is needed, option (D) is the answer :

31. When it was feared that the serfs might go too far and gain their freedom from serfdom, the protestant leaders joined the princes at crushing them.

(A) Into crushing

(B) In crushing

(C) Without crushing

(D) No improvement

31. B)

Join in crushing since it is a phrasal verb.

32. **The workers are hell bent at getting what is due to them.**

(A) Hell bent on getting

(B) Hell bent for getting

(C) Hell bent upon getting

(D) No improvement

32. A)

Hell bent goes with on.

33. **In the following question, choose the word which is the exact OPPOSITE of the given word :**

ENORMOUS

(A) Soft

(B) Average

(C) Tiny

(D) Weak

33. C)

An antonym is a word that has the opposite meaning to another word. For the word "enormous," which means extremely large or huge, some antonyms could include:

Tiny

Small

Minuscule

Little

Petite

Diminutive

Miniature

Insignificant

Microscopic

Infinitesimal

34. Some proverbs/idioms are given below together with their meanings. Choose the correct meaning of proverb/idioms:

To keep one's temper

(A) To become angry

(B) To be in good mood

(C) To preserve one's energy

(D) None of the above

34. D)

The idiom "to keep one's temper" means to maintain self-control and not get angry or lose one's composure in a challenging or frustrating situation. It implies the ability to manage one's emotions, especially anger, and remain calm and composed despite provocation or difficulties. Keeping one's temper often involves controlling one's reactions, speaking calmly, and handling a situation with patience and restraint rather than reacting impulsively or aggressively. It is an important skill in maintaining good relationships and effective communication, particularly during tense or stressful circumstances.

35. Find the correctly spelt word.

(A) Efficient

(B) Treatment

(C) Betterment

(D) Employd

35. A)

Efficient

Treatment

Betterment

Employed

Direction(Q. Nos. 36-38) : Read the paragraph and answer the following:

I felt the wall of the tunnel shiver. The master alarm squealed through my earphones. Almost simultaneously, Jack yelled down to me that there was a warning light on. Fleeting but spectacular sights snapped into and out of view, the snow, the shower of debris, the moon, looming close and big, the dazzling sunshine for once unfiltered by layers of air. The last twelve hours before re-entry were particular bone-chilling. During this period, I had to go up into command module. Even after the fiery re-entry splashing down in 81 water in South Pacific, we could still see our frosty breath inside the command module.

36. The statement that the dazzling sunshine was "for once unfiltered by layers of air" means

(A) That the sun was very hot

(B) That there was no strong wing

(C) That the air was unpolluted

(D) None of these

36. D)

The phrase "dazzling sunshine was for once unfiltered by layers of air" conveys the idea that the sunlight was exceptionally clear and unobstructed, allowing its brilliance to be fully experienced without any interference from atmospheric layers.

37. The word "Command Module" used twice in the given passage indicates perhaps that it deals with

(A) An alarming journey

(B) A commanding situation

(C) A journey into outer space

(D) A frightful battle

37. C)

In the context of space exploration, the command module is the central spacecraft that houses the

crew and contains the controls and navigation equipment.

38. **Which one of the following reasons would one consider as more as possible for the warning lights to be on ?**
(A) There was a shower of debris
(B) Jack was yelling
(C) A catastrophe was imminent

The moon was looming close and big

38. C)

The warning lights will be on when a catastrophe would be imminent.

39. **In the question given below, out of the four alternatives, choose the one which can be substituted for the given word/sentence:**

Extreme old age when a man behaves like a fool.
(A) Imbecility
(B) Senility
(C) Dotage
(D) Superannuation

39. B)

The term "imbecility" refers to a state of profound intellectual disability or significantly below-average intelligence. It is often used to describe a severe cognitive impairment or mental deficiency that impacts an individual's ability to comprehend and process information. In a historical context, "imbecility" was once used as a classification for a level of intellectual disability, typically considered less severe than idiocy but more severe than feeble-mindedness.

Senility refers to a condition typically associated with old age that involves a decline in mental or cognitive functioning. It can be characterized by memory loss, forgetfulness, confusion, and a decrease in the ability to think clearly and perform everyday tasks. Senility is often used to describe the mental deterioration that can occur in some elderly individuals, particularly as a result of age-related changes in the brain or certain medical conditions such as Alzheimer's disease or other forms of dementia.

40. **In the following question, choose the word which best expresses the meaning of the given word:**

EMBEZZLE
(A) Misappropriate
(B) Balance
(C) Remunerate
(D) Clear

40. A)

The term "embezzle" refers to the act of dishonestly withholding or misappropriating funds or property that one has been entrusted with, typically for personal gain. It involves the illegal appropriation of assets or money by someone in a position of trust, such as an employee, official, or trustee, who has access to these assets as part of their job responsibilities.

41. **Direction :** Choose the correct option considering the statements followed by the conclusions:
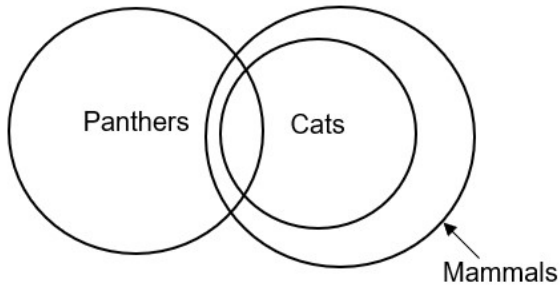**Statements:**
(a) Some panthers are cats
(b) All cats are mammals
(c) Some mammals are not panthers
Conclusions:
(i) Some mammals are panthers
(ii) All panthers are mammals
(iii) All cats are panthers
(iv) All mammals are not panthers
(A) None follows
(B) Only (i) follows
(C) Only (i) and (ii) follow
(D) Only (ii) and (iii) follow

41. B)

Following Venn diagram can be constructed from the given statements:

Some panthers are cats can be constructed by two partially intersecting circles each representing panthers and cats. All cats are mammals can be constructed by two circles, cats circle engulfed by circle representing mammals. Some mammals are not panthers can be constructed by two partially intersecting circles each representing panthers and mammals. Therefore, it can be concluded that some mammals are panthers.

Hence, only I follows is the correct answer.

42. **Divayabh gave an application for a new passport to the clerk on Monday afternoon. Next day was a holiday. So, the clerk cleared the papers on the next working day on resumption of duty. The senior clerk checked it on the same day but forwarded it to the head clerk on the next day. The head clerk decided to tightly dispose the case on the subsequent day. On which the following days was the case put up to the head clerk by the senior clerk?**

(A)   Wednesday
(B)   Thursday
(C)   Friday
(D)   None of the above

42. B)

Based on the information provided, the correct answer is Thursday. Let's break down the sequence of events:

1.   Divayabh submitted the application form on Monday.
2.   Tuesday was a holiday, so there was no processing on this day.

3.   Clearance from the clerk was obtained on Wednesday.
4.   Subsequently, the senior clerk provided clearance on the same Wednesday.
5.   Finally, the application reached the head clerk on Thursday.

Therefore, the application reached the head clerk on Thursday, following the sequence of events as described.

43.   Direction: choose the correct option considering the statements followed by the conclusions.
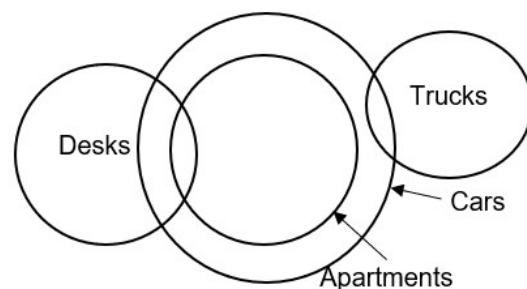
Statements:

(a)   Some desks are apartments
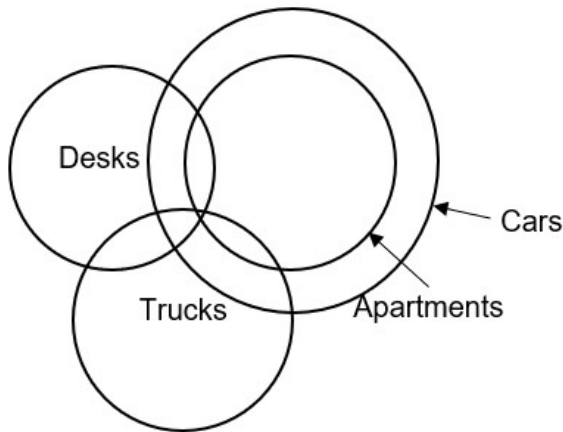(b)   All apartments are cars
(c)   Some cars are trucks

Conclusion:

(i)   Some desks are trucks
(ii)   Some desks are cars
(iii)   Some cars are apartments
(iv)   No truck is a desk
(A)   None follows
(B)   Only (ii) and (iii) follow
(C)   Either only (i) or (ii), (iii) and (iv) follow
(D)   Either only (i) or (iv), (ii) and (iii) follow

43. D)

Following Venn diagrams can be constructed from the given statements:

Some desks are apartments can be constructed by two partially intersecting circles each representing desks and apartments. All apartments are cars can be constructed by two circles, apartments circle engulfed by circle representing cars. Some cars are trucks can be constructed by two partially intersecting circles each representing cars and trucks. There exist two cases for the given set of statements and it can be concluded that either only some desks are trucks or no truck is a desk, and some desks are cars and some cars are apartments.

Hence, either only I or IV, and II and III follow is the correct answer.

44. Complete the following series:
E-5, G-7, I-9, K-11?
(A) L-13, N-14
(B) M-13, O-15
(C) L-12, M-14
(D) K-12, M-14

44. B)

If we continue the series by adding 2 for each subsequent letter, the next letters would be:

M-13

O-15

45. In a row of children, Bali is seventh from the left and Moti is fourth form the right. When Bali and Moti exchange position from the right?
(A) Eighth
(B) Fourth
(C) Eleventh

(D) Twelfth

45. D)

As the position of Bali after interchanging with Moti becomes 15th from the left and 4th from the right, the total number of children = 15 + 4 - 1 = 18

The position of Moti from the right = 18 - 7 + 1 = 12th

46. A woman presents a man as the son of the brother of her mother. How is the man related to the woman?
(A) Nephew
(B) Son
(C) Cousin
(D) Uncle

46. C)

The brother of the woman's mother means the maternal uncle of the woman. Therefore, the man is the cousin of the woman.

47. Facing a man in the eye, Nero said, "Your son is my son's uncle". How is the man related to Nero?
(A) Brother
(B) Father
(C) Uncle
(D) Grand father

47. B)

The uncle of Nero's son is Nero's brother that makes the man Nero's father.

48. If "!" denotes "added to", "@"denotes "divided by", "%" denotes "multiplied by" and "^" denotes "subtracted from", then 13!102@6%2^41=?
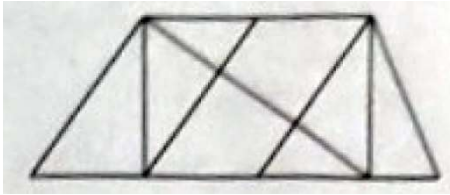(A) 6
(B) 9
(C) 14
(D) 12

48. A)

To solve this expression, you should follow the order of operations, known as PEMDAS/BODMAS (Parentheses/Brackets, Exponents/Orders, Multiplication and Division, Addition and Subtraction)
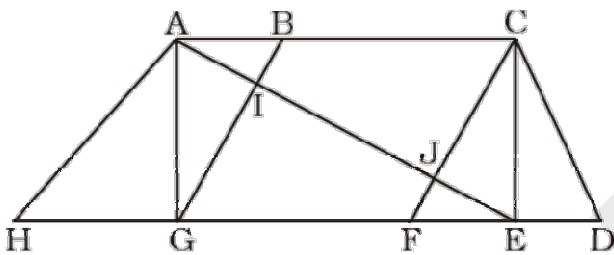
13+102/6*2-41

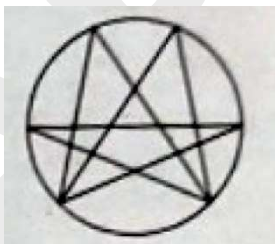**49.** **Find the number of triangles in the given figure:**

(A) 8
(B) 10
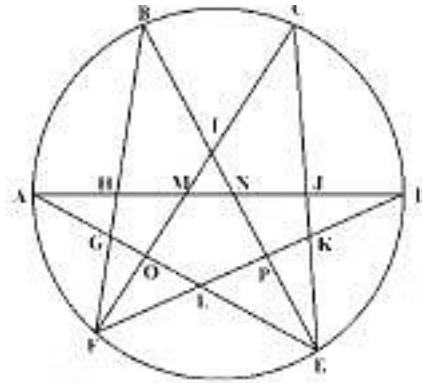(C) 12
(D) 14

49. D)

Number of triangles involving one figure: 6
Number of triangles involving two figures: 4
Number of triangles involving three figures: 3
Number of triangles involving four figures: 1
Total= 14

50. **Find the number of triangles in the given figure**

(A) 22
(B) 24
(C) 26
(D) 28

50. D)

The figure may be labelled as shown. The simplest triangles are AGH, GFO, LFO, DJK, EKP, PEL and IMN i.e. 7 in number. The triangles having two components each are GFL, KEL, AMO, NDP, BHN, CMJ, NEJ and HFM i.e. 8 in number. The triangles having three components each are IOE, IFP, BIF and CEI i.e. 4 in number. The triangles having four components each are ANE and DMF i.e. 2 in number. The triangles having five components each are FCK, BGE and ADL i.e. 3 in number. The triangles having six components each are BPF, COE, DHF and AJE i.e. 4 in number. Total number of triangles in the figure = 7 + 8 + 4 + 2 + 3 + 4 = 28

51. **If the marked price of 30 articles is equal to the selling price of 40 articles, then find the % discount.**

(A) 25%
(B) 33.33%
(C) 75%
(D) 20%

51. A)

Let's assume the cost price of each article is Rs. 1.

The market price of 30 articles is Rs 30, and the selling price of 40 articles is Rs 40. The difference between the market price and the selling price is the discount.

Discount = Market Price - Selling Price = Rs 40 - Rs 30 = Rs 10

To find the percentage discount, we use the formula:

Percentage Discount=(Discount/Market Price)×100

Percentage Discount=(10/40)×100=(1/4)×100=25 %

Therefore, the percentage discount is 25%.

52. **A student scores 36% marks and he fails by 32 marks. But if he scores 48% marks then he will get 64 marks more than the passing marks. Find the pass percentage.**
(A) 40%
(B) 50%
(C) 35%
(D) 45%

52. A)

A student scored 36% marks in an exam and failed by 32 marks while another student scored 48% marks and passed by 64 marks;

∴The difference of 12% (= 48 - 36) creates the difference of marks equal to 96 (= 64 + 32);

∴ 0.12 × Maximum marks = 96 ⇒ Maximum marks = 96/0.12 = 800

∴ Pass marks = 800 × 0.36 + 32 = 320

∴ Pass percentage = [320/800] × 100 = 40%

53. **The monthly incomes of X and Y are in the ratio of 4:3 and their monthly expenses are in the ratio of 3:2. However, each saves Rs. 6000 per month. What is their total monthly income?**
(A) Rs28,000
(B) Rs 42,000
(C) Rs 56,000
(D) Rs 84,000

53. B)

Let's assume the monthly incomes of X and Y are 4x and 3x, respectively, and their monthly expenses are 3y and 2y, respectively.

According to the given information, each saves Rs.6,000 per month. So, their savings are 6000.

Their savings can be expressed as the difference between their incomes and expenses:

For person X: 4x - 3y = 6000 ...(1) For person Y: 3x - 2y = 6000 ...(2)

We can solve equations (1) and (2) simultaneously to find the values of x and y.

Multiplying equation (1) by 2 and equation (2) by 3, we get:

8x - 6y = 12000 ...(3) 9x - 6y = 18000 ...(4)

Subtracting equation (3) from equation (4), we have:

(9x - 8x) - 6y + 6y = 18000 - 12000 x = 6000

Substitute the value of x back into equation (1) to find the value of y:

4(6000) - 3y = 6000 24000 - 3y = 6000 -3y = 6000 - 24000 -3y = -18000 y = 6000

So, x = 6000 and y = 6000.

Now, we can find the total monthly income of X and Y:

Total monthly income = 4x + 3x = 7x

Total monthly income = 7 * 6000 = 42000

Therefore, their total monthly income is Rs.42,000.

54. **P works thrice as fast as Q, whereas P and Q together can work four times as fast as R. if P,Q and R work together on a job, then in what ratio should they share the earnings?**
(A) 3:1:1
(B) 3:2:4
(C) 4:3:4
(D) 3:1:4

54. A)

P is thrice as fast than Q

P and Q is 4 time as fast as R

Calculation:

⇒ P = 3Q ... (1)

⇒ P + Q = 4R .... (2)

By equation (1) and (2)

⇒ Q = R ..... (3)

⇒ So, P is thrice efficient as Q and R

⇒ The ratio of earning of P, Q, and R = 3 : 1 : 1

∴ The required result will be "3 : 1 : 1".

55. **8 men can do a piece of work in 12 days while 20 women can do it in 10 days. In how many days 12 men and 15 women together can complete the same work?**
(A) 4
(B) 5

(C)   6

(D)   7

55. B)

8 men x12 days=96 men days.

20 boys x 10 days= 200 boys days.

12 men one day work is=12/96

15 boys one day work is=15/200

12/96+15/200=1/8+3/40=5+3/40=8/40=1/5

in one day this group will finish 1/5th work so 5 days required to complete the work.

Direction (Q.No. 56-60): In each question below is given a statement followed by three courses of action numbered (i), (ii) and (iii). A course of action is a step or administrative decision to be taken for improvement, follow-up or further action in regard to the problem, policy, etc. On the basis of the information given in the statement, you have to assume everything in the statement to be true, then decide which of the suggested courses of action logically follow(s) for pursuing:

56.   Statement: One aspirant was killed due to stampede while participating in a recruitment drive of police constables.

Courses of action:

(i)   The officials in charge of the recruitment process should immediately be suspended.

(ii)   A team of officials should be asked to find out the circumstances which led to the death of the aspirant and submit its report within a week.

(iii)   The Government should ask the home department to stagger the number of aspirants over more number of days to avoid such incidents in future.

(A)   Only (i)

(B)   Only (ii)

(C)   Only (iii)

(D)   Only (ii) and (iii)

56 D)

let's evaluate the courses of action provided:

A.   "The officials in charge of the recruitment process should immediately be suspended." - This course of action seems extreme without understanding the full circumstances. Suspending the officials immediately might not be the best approach before a thorough investigation is conducted.

B.   "A team of officials should be asked to find out the circumstances which led to the death of the aspirant and submit its report within a week." - This is a necessary and reasonable course of action. Understanding the circumstances leading to the stampede is crucial in preventing similar incidents in the future. A timely report within a week is a reasonable timeframe.

C.   "The government should ask the home department to stagger the number of aspirants over more number of days to avoid such incidents in the future." - This is a preventive measure and shows a proactive approach to avoid similar incidents in the future. It acknowledges the need for better management of crowd control during such events.

Considering the above analysis:

•   Course of action (A) seems too hasty and might not be the most appropriate initial step.

•   Course of action (B) is essential and crucial in understanding the root cause.

•   Course of action (C) is a preventive measure to avoid similar incidents.

Therefore, the most appropriate options are (B) and (C). Thus, the correct answer would be (D) "Only (B) and (C)."

57.   Statement: A heavy unseasonal downpour during last two days has paralysed the normal life in the State in which five persons were killed but this has provided a huge relief to the problem of acute water crisis in the State.

Courses of action :

(i)   The State Government should set up a committee to review the alarming situation.

(ii)   The State Government should immediately remove all the restrictions, on use of potable water in all the major cities in the State.

(iii) The State Government should send relief supplies to all the affected areas in the State.
(A) None
(B) Only (i)
(C) Only (ii) and (iii)
(D) Only (iii)

Courses of action:
(i) The Government should issue a notification to general public to immediately stop all transactions with the bank.
(ii) The Government should direct the bank to refrain from retrenching its employees.
(iii) The Government should ask the central bank of the country to initiate an enquiry into the bank's activities and submit its report.
(A) None
(B) Only (i)
(C) Only (ii)
(D) Only (iii)

57. D)

I. This is a long-term action plan which is time-consuming.
II. This doesn't seem like an appropriate course of action, as the heavy downpour might not necessarily have resolved the long-term water crisis. It's important to assess the situation comprehensively before lifting any water use restrictions.
III. This is a necessary course of action, especially since the statement mentions that the heavy downpour has caused normal life to be paralyzed and resulted in casualties. Providing relief supplies to affected areas is a humanitarian response to assist those in need.

58. Statement: A large private bank has decided to retrench one – third of its employees in view of the huge losses incurred by it during the past three quarters.

Courses of action:
(iv) The Government should issue a notification to general public to immediately stop all transactions with the bank.

(v) The Government should direct the bank to refrain from retrenching its employees.
(vi) The Government should ask the central bank of the country to initiate an enquiry into the bank's activities and submit its report.
(E) None
(F) Only (i)
(G) Only (ii)
(H) Only (iii)

58. D)

59. Statement: Many political activists have decided to stage demonstrations and block traffic movement in the city during peak hours to protest against the steep rise in the prices of essential commodities.

Courses of action:
(i) The Government should immediately ban all forms of agitations in the country.
(ii) The police authority of the city should deploy additional forces all over the city to help traffic movement in the city.
(iii) The State administration should carry out preventive arrests of the known criminals staying in the city.
(A) Only (i)
(B) Only (ii)
(C) Only (iii)
(D) Only (i) and (ii)

59. B)

Only III follows because this is the appropriate step that could be taken by the government within its powers. The government cannot ask public to stop all transactions and neither can it direct the bank from retrenching its employees as its bank's internal affair, therefore I and II do not follow.

The statement indicates that courses of action (A) and (C) are not feasible because in a democratic country, the government cannot impose bans on certain things. This implies that the proposed actions might involve restrictions that would contradict the democratic principles of the country.

Course of action (A) and (C) were not directly mentioned in the previous scenarios provided. However, this information seems to be addressing

the feasibility of certain actions in a democratic setup.

It is important to consider the principles of democracy and the rights of the citizens when formulating any course of action, ensuring that they do not infringe upon basic freedoms. In a democratic society, the government must work within the framework of the law and the constitution, ensuring that the rights of the citizens are protected while addressing any situation or problem.

60. **Statement: The school dropout rate in many districts in the state has increased sharply during the last few years as the parents of these children make them work in the fields owned by others to earn enough for them to get at least one meal in a day.**

Courses of action:

(i) The Government should put up a mechanism to provide food grains to the poor people in these districts through public distribution system to encourage the parents to send their wards to school.

(ii) The Government should close down some of these schools in the district and deploy the teachers of these schools to nearby schools and also ask remaining students to join these schools.

(iii) The Government should issue arrest warrants for all the parents who force their children to work in fields instead of attending classes.

(A) Only (i)

(B) Only (ii)

(C) Only (iii)

Only (i) and (ii)

60. A)

"The government should put up a mechanism to provide food grains to the poor people in these districts through the public distribution system to encourage the parents to send their wards to school." - This is a feasible course of action that addresses the root cause of why children are being made to work instead of attending school. By providing food grains, the government can help alleviate the financial burden on families, thereby enabling children to attend school.

"The government should close down some of these schools in the district and deploy the teachers of these schools to nearby schools and also ask remaining students to join these schools." - Closing down schools may not be the best solution, as it can further limit access to education for children in these areas. It may also disrupt the educational infrastructure and affect the overall educational system in these districts.

"The government should issue arrest warrants for all the parents who force their children to work in fields instead of attending classes." - Issuing arrest warrants might not address the underlying issue effectively. This approach could lead to further complications and may not solve the problem of school dropouts, as the root cause lies in the socio-economic challenges faced by these families.

Direction (Q. No. 61-65): Study the following information carefully and answer the questions given below :

Following are the conditions for selecting Senior Manager General Banking in a bank :

The candidate must

(i) have secured at least 60 percent makrs in std. XII

(ii) have secured at least 55 percent makrs in Graduation in any discipline

(iii) have secured at least 60 perdcent marks in Postgraduate degree/ diploma in Management / Economics / Statistics

(iv) be at least 25 years and not more than 35 years as on 01-03-2010.

(v) have post qualification work experience of at least 2 years as General Banking Officer in a bank.

(vi) have secured at least 40 percent marks in the personal interview.

In case of a candidate who satisfies all the above conditions except

(a) at (iii) above but has secured at least 60 percent marks in CA or ICWA, the case is to be reffered to the VP-Recruitment.

(b) at (vi) above but has secured at least 65 percent marks in the written examination and at least 35 percent marks in the personal interview, the case is to be reffered to the president-recruitment.

In each question below are given details of one candidate. You have to take one of the following cources of action based on the information provided and the conditions and sub-conditions given above and mark the number of that course of action as your answer. You are not to assume anything other than the information provided in each question. All these are given to you as on 01-03-2010:

61. Neeta Jaiswal was born on 2nd of June,1980. She has been working in a bank as a Generalist Officer for the past three years after completing her Postgraduation degree in economics with 60 percent marks. She has secured 68 percent marks in H. Sc. and 58 percent marks in B. Com. She has also secured 50 percent marks in both the written examination and personal interview.

(A) The data provided is inadequate to take decision.

(B) The case is to be reffered to the VP-Recruitment.

(C) The case is to be reffered to the President-Recruitment.

(D) The candidate is to be selected

61. D)

The candidate fulfils all the criteria for selection to the post. The candidate is to be selected. Option D is correct.

62. Kesav Vora was born on 8th November,1978. He has secured 65 percent marks in std. XII and 60 percent marks in graduation. He has secured 58 percent marks in M.A. Economics and 60 percent in ICWA. He has been working in a bank as a Generalist Officer for the past two years after completing his education.He has also secured50 percent marks in the written examination and 45 percent marks in the personal interview.

(A) The data provided is inadequate to take decision.

(B) The case is to be reffered to the VP-Recruitment.

(C) The case is to be reffered to the President-Recruitment.

(D) The candidate is to be selected

62. B)

The candidate has 58% marks in post - graduation. However, he has also scored 60% marks in ICWA. Hence, as per conditions he must be referred to Vice President. Option B is the correct answer.

63. Arindam Ghosh has been working in a bank as a Generalist Officer for the past four years after completing his Postgraduate Diploma in Management with 60 percent marks. He has secured 50 percent marks in the written examination and 40 percent marks in the personal interview. He has also secured 70 percent marks in std. XII. He was born on 25th February, 1975.

(A) The data provided is inadequate to take decision.

(B) The case is to be referred to the VP-Recruitment.

(C) The candidate is to be selected.

(D) The candidate is not to be selected.

63. D)

Arindam is older than 35 years, thus the candidate is not to be selected.

64. Sohan Majhi has secured 65 percent marks in B.Sc. and 70 percent marks in M. Sc. Statistics. He has been working in a bank as Generalist Officer for the past three years after completing his Postgraduation. He has secured 55 percent marks in the personal interview. He was born on 8th of July , 1982.

(A) The data provided is inadequate to take decision.

(B) The case is to be reffered to the VP-Recruitment.

(C) The case is to be reffered to the President-Recruitment.

(D)   The candidate is to be selected

64. A)

Sohan satisfied all the conditions, but his marks of XII std. are not mentioned, thus data insufficient.

65.   Neha Salve has been working in a bank as a Generalist Officer for the past four years after completing her Postgraduate degree in Economics with 60 marks . She has secured 60 percent marks in both Graduation and std. XII. She was born on 24th August, 1979. She has secured 70 percent marks in the written examination and 38 percent marks in the personal interview.

(A)   The data provided is inadequate to take decision.

(B)   The case is to be reffered to the VP-Recruitment.

(C)   The case is to be reffered to the President-Recruitment.

(D)   The candidate is to be selected

65. C)

Neha failed to satisfy (vi) condition but got 70% in written exam, thus case is to be referred to President-Recruitment.

66.   Keeping in mind the relation between numbers of the first pair. Find the possible number for the 2nd pair from the options given below:

   43 : 12 : 84 : ?

(A)   46

(B)   32

(C)   12

(D)   None of the above

66. B)

The logic here is as follows, $4 \times 3 = 12$

$8 \times 4 = 32$

67.   Three words are given in the following question which have common feature. Four options are given below the three words, one of which has that same common feature, Find the word :

Fruit , Flower, Stem

(A)   Scent

(B)   Leaf

(C)   Vegetation

(D)   Forest

67. B)

Common feature: Parts of Plants

68.   Three words are given in the following question. Four options are given below, one of which is representative of the three words. Find the options :

   Cheetah, Lion, Tiger

(A)   Zoo

(B)   Extinct

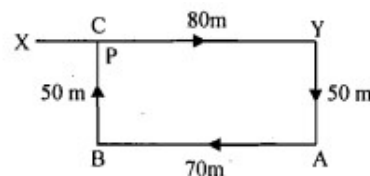(C)   Circus

(D)   Carnivorous

68. D)

All three are carnivorous animals.

69.   Raj travelled from a point X straight to Y at a distance of 80 metres. He turned right and walked 50 metres, then again turned right and walked 70 metres, Finally, he turned right and walked 50 metres. How far is he from the starting point ?

(A)   10 metres

(B)   20 metres

(C)   50 metres

(D)   70 metres

69. A)

XC=80-70=10 m

70.   Pointing to a photograph, a person tells his friend, "She is the granddaughter of the elder brother of my father". How is the girl in the photograph related to this man ?

(A)   Niece

(B)   Sister

(C) Aunt

(D) Sister-in-law

70. A)

Here is the breakdown of the relationships:

1. The elder brother of the person's father is his uncle.

2. The granddaughter of the person's uncle will be the daughter of the person's cousin.

3. The person will be an uncle to that girl.

4. Therefore, that girl will be the niece of the person.

Direction(Q. Nos. 71-75) : In the following diagram, the circle represents College Professors, the triangle stands for Surgical Specialists and Medical Specialists are represented by the rectangle:
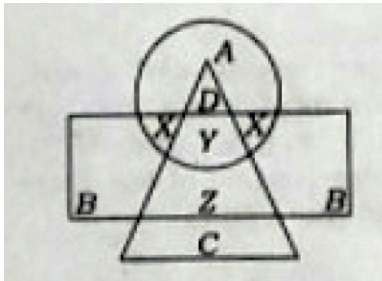
71. College Professors who are also Medical Specialists are represented by

(A) A

(B) X

(C) Y

(D) Z

71. B)

Circle= college professors

Rectangle=Medical specialists

Overlap between the two is x

72. College Professors who are also Surgical Specialists are represented by

(A) A

(B) X

(C) Y

(D) Z

72. D)

The required region is the one which is common to the circle and the triangle only i.e., D

73. Surgical Specialists who are also Medical Specialists but not Professors are represented by

(A) B

(B) X

(C) Y

(D) Z

73. D)

Surgical specialists who are also medical specialists but not professors is common area of triangle and rectangle and not circle which is represented by Z.

74. C represents

(A) Medical Specialists

(B) College Professors

(C) Surgical Specialists

(D) Medical and Surgical Specialists

74. C)

C represent only surgical specialists.

75. B represents

(A) Professors who are neither Medical nor Surgical Specialists

(B) Professors who are not Surgical Specialists

(C) Medical Specialists who are neither Professors nor Surgical Specialists

(D) Professors who are not Medical Specialists

75. C)

B represents medical specialists who are neither professors nor surgical specialists.

Directions (Q. Nos. 76-80) : Read the following information carefully and answer the questions given below :
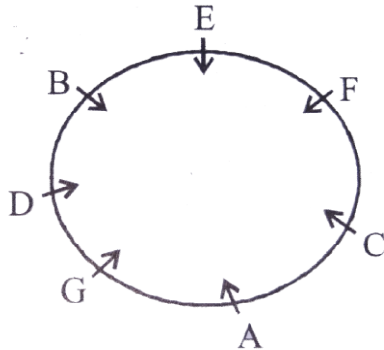
(i) A,B,C,D,E,F and G are sitting around a circle and facing the centre.

(ii) G is second to the left of C, who is to the immediate left of f.

(iii) A is third to the left E.

(iv) B is between D and E

76. Which of the following is the position of F ?

(A)   Fourth to the right of D

(B)   To the immediate left of C

(C)   Between A and E

(D)   To the immediate right of A

76.   A)

77.   Which of the following is false ?

(A)   A is fourth to the right of E

(B)   G is to the immediate right of D

(C)   F is third to the right of D

(D)   B is to the immediate left of G

77.   C)

F is fourth to the right of D

78.   Which of the following is true ?

(A)   C is the fourth to the left of B

(B)   A is to the immediate right of G

(C)   D is second to the left of E

(D)   B is second to the right of G

78. B)

From the figure, A is to right of G

79.   Which of the following pairs has first person sitting to the immediate left of the second person ?

(A)   BE

(B)   CA

(C)   GD

(D)   DG

79. B)

A is to immediate left of C

80.   Which of the following has the middle person sitting between the remaining two ?

(A)   FCE

(B)   EFB

(C)   DEB

(D)   None of the above

80. D)

In none of the options, the given condition is met