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## IBPS SO Previous Year Questions - Quantitative Aptitude

Directions: Answer the questions based on the information given below.
Three types of races were organised i.e. $400 \mathrm{~m}, 800 \mathrm{~m}$ and 1000 m . The number of males who participated in 400 m race is $25 \%$ more than the number of females who participated in 800 m race. The ratio of the number of females who participated in 800 m race and 1000 m race is $2: 9$, respectively. Number of people (male + female) who participated in 800 m race and 1000 m race is 1000 and 1350, respectively. The average number of males who participated in given three types of races is 500.700 females participated in 400 m race.

Note: None of the people participated in more than one type of race.

Question 1: Find the ratio of number of males who participated in 400 m race and 800 m race, together to the total number of people who participated in 1000m race.
A) $2: 5$
B) $3: 8$
C) $5: 4$
D) $7: 9$
E) 1:3

Question 2: Find the average of number of females who participated in given three types of races.
A) 500
B) 560
C) 600
D) 450
E) 750

Question 3: The number of people who participated in 400 m race is how much percent more/less than the number of males who participated in 800m race?
A) $18.75 \%$
B) $12.25 \%$
C) $16.15 \%$
D) $20.45 \%$
E) $17.25 \%$

Question 4: An another race of 1500 m was also organised. The ratio of the number of males who participated in 1000 m race to the number of males who participated in 1500 m race is $3: 5$. If the number of females who participated in 1500 m race was $40 \%$ more than that of males, then find the number of females who participated in 1500 m race.
A) 1200
B) 1050
C) 1350
D) 1400
E) None of these

Question 5: Find the difference between the number of females who participated in 400 m race and 1000 m race, together and the number of females who participated in 800 m race.
A) 1200
B) 1400
C) 1000
D) 1800
E) 1600

Question 6: What approximate value will come in place of the question mark (?) in the following question?(Note: You are not expected to calculate the exact value.)
$41.78 \%$ of $1499+(9 / 13) \times 389.84=? \%$ of $1599.67+180.45$
A) 32
B) 45
C) 54
D) 65
E) 90

Question 7: What approximate value will come in place of the question mark (?) in the following question?(Note: You are not expected to calculate the exact value.)
$\sqrt{ } 2310 \times 4.99+(359.72+519.87)=?^{2}+63.88 \%$ of 150.42
A) 30
B) 28
C) 32
D) 34
E) 36

Question 8: What approximate value will come in place of the question mark (?) in the following question?(Note: You are not expected to calculate the exact value.)
$24.99 \%$ of $1619.78+(1259.84 \div 12.24)=? \times 16.98$
A) 30
B) 58
C) 12
D) 90
E) 120

Question 9: What approximate value will come in place of the question mark (?) in the following question?(Note: You are not expected to calculate the exact value.)
$24.45 \%$ of $14.99 \%$ of $14999.78+159.80=? \%$ of 1999.78
A) 24
B) 48
C) 35
D) 54
E) 80

Question 10: What approximate value will come in place of the question mark (?) in the following question?(Note: You are not expected to calculate the exact value.) $(24.78 \times 11.67)+(7199.67 \div 14.99)=? \times 12.65$
A) 112
B) 20
C) 45
D) 90
E) 60

Question 11: What approximate value will come in place of the question mark (?) in the following question? (Note: You are not expected to calculate the exact value.)
$(3.25 \times 149.67)+(7.12 \times 199.78)=? \times 24.89$
A) 20
B) 40
C) 70
D) 105
E) 130

# IBPS SO <br> 2022-23 

Question 12: $19.89 \%$ of 649.87 is added to 150.25 and the resultant is multiplied by 3.67 such that the resultant value is a product of ' $x$ ' and 15.76 . Find the value of ' $x$ '.
A) 70
B) 40
C) 120
D) 150
E) 10

Directions: Answer the questions based on the information given below.

The pie chart given below shows the percentage distribution of total number of students in six different schools. Total number of students in all six schools together is 8000 and ratio of number of boys to girls in school $D$ is 9:7.

Distribution of number of students


$$
\begin{aligned}
& \square A \\
& \square B \\
& -C \\
& \square D \\
& \square E
\end{aligned}
$$

The pie chart given below shows the percentage distribution of number of boys in the respective schools.


Question 13: What is the ratio of number of boys to girls in school C?
A) $63: 62$
B) $61: 62$
C) $62: 63$
D) $65: 63$
E) None of these

Question 14: Number of boys in school $A$ is how much percent more/less than the number of girls in the same school?
A) $25 \%$
B) $60 \%$
C) $50 \%$
D) $40 \%$
E) None of these

Question 15: What is the difference between number of boys and girls in school B?
A) 560
B) 440
C) 520
D) 480
E) None of these

Question 16: Number of girls in school E is approximately how much percent of number of boys in the same school.
A) $42.4 \%$
B) $35.6 \%$
C) $29.6 \%$
D) $23.2 \%$
E) $20.3 \%$

Question 17: Number of boys in school $G$ is $25 \%$ more than the same in school $F$ and ratio of number of girls in schools $F$ and $G$ is 8:9 respectively. Find total number of students in school $G$ is:
A) 1434
B) 1464
C) 1424
D) 1444
E) None of these

Question 18: In the question, two equations I and II are given. You have to solve both the equations to establish the correct relation between x and y and choose the correct option.
I. $7 x+4 y=116$
II. $5 x+3 y=84$
A) $x>y$
B) $x<y$
C) $x=y$ or the relationship cannot be established
D) $x \geq y$
E) $x \leq y$

Question 19: In the question, two equations I and II are given. You have to solve both the equations to establish the correct relation between x and y and choose the correct option.

1. $x^{2}+12 x=288$
II. $y^{2}+6 y=216$
A) $x>y$
B) $x<y$
C) $x=y$ or the relationship cannot be established
D) $x \geq y$
E) $x \leq y$

Question 20: In the question, two equations I and II are given. You have to solve both the equations to establish the correct relation between x and y and choose the correct option.
I. $8 x^{2}=4 x^{2}+56 x-195$
II. $y^{2}+144=24 y$
A) $x>y$
B) $x<y$
C) $x=y$ or the relationship cannot be established
D) $x \geq y$
E) $x \leq y$

Question 21: In the question, two equations I and II are given. You have to solve both the equations to establish the correct relation between x and y and choose the correct option.
I. $(x+9)^{2}=39 x-27$
II. $(y-8)^{2}=2 y-13$
A) $x>y$
B) $x \geq y$
C) $x \leq y$
D) $x<y$
E) $x=y$ or the relationship cannot be established

Question 22: In the question, two equations I and II are given. You have to solve both the equations to establish the correct relation between x and y and choose the correct option.
l. $x^{2}+7 x=60$
II. $y^{2}+30 y+216=0$
A) $x>y$
B) $x<y$
C) $x=y$ or the relationship cannot be established
D) $x \geq y$
E) $x \leq y$

Directions: Answer the questions based on the information given below.
The table given below shows the number of branches of café coffee day, and the total number of employees in five different cities. It also shows the ratio of male to female employees in each of the given cities.

| City | Branches | Total number of <br> employees | Male:Female |
| :---: | :---: | :---: | :---: |
| Mumbai | 25 | 450 | $2: 3$ |
| Kolkata | 18 | 360 | $1: 1$ |
| Delhi | 24 | 576 | $5: 4$ |
| Hyderabad | 12 | 264 | $6: 5$ |
| Bhopal | 16 | 320 | $3: 5$ |

Question 23: Find the ratio of the number of female employees of café coffee day in Delhi to that of the number of male employees of café coffee day in Hyderabad.
A) $4: 5$
B) $9: 10$
C) $16: 9$
D) $16: 15$
E) None of these

Question 24: Find the average number of employees in each branch of café coffee day in Mumbai.
A) 21
B) 24
C) 15
D) 18
E) 20

Question 25: The number of female employees of café coffee day in Mumbai is what percent of the total number of employees of café coffee day in Kolkata?
A) $75 \%$
B) $80 \%$
C) $50 \%$
D) $40 \%$
E) $60 \%$

Question 26: What is the average number of male employees of café coffee day in Hyderabad and Bhopal together?
A) 96
B) 145
C) 123
D) 132
E) 120

Question 27: What is the average number of female employees of café coffee day in each branch in Kolkata?
A) 10
B) 15
C) 18
D) 12
E) 20

Question 28: The question consists of two statements numbered "I and II" given below it. You have to decide whether the data provided in the statements are sufficient to answer the question.
A sum of Rs. 22800 is to be divided among A, B and C. Profit share of A, B and C, respectively is:
Statement I: A gets $5 / 7^{\text {th }}$ of the amount received by $B$ and $C$ together.
Statement II: C gets $3 / 16^{\text {th }}$ of the amount received by the rest of two together.
A) The data in statement I alone are sufficient to answer the question, while the data in statement II alone are not sufficient to answer the question.
B) The data in statement II alone are sufficient to answer the question, while the data in statement I alone are not sufficient to answer the question.
C) The data either in statement I alone or in statement II alone are sufficient to answer the question.
D) The data given in both statements I and II together are not sufficient to answer the question.
E) The data in both statements I and II together are necessary to answer the question.

Question 29: The question consists of two statements numbered "I and II" given below it. You have to decide whether the data provided in the statements are sufficient to answer the question.
If $A$ is 32 years elder to $B$, the present age of $A$ is:
Statement I: Exactly 8 years ago, A was 5 times as old as B was then.
Statement II: After 12 years, ratio of ages of A to B will be 15:7.
A) The data in statement I alone are sufficient to answer the question, while the data in statement II alone are not sufficient to answer the question.
B) The data in statement II alone are sufficient to answer the question, while the data in statement I alone are not sufficient to answer the question.
C) The data either in statement I alone or in statement II alone are sufficient to answer the question.
D) The data given in both statements I and II together are not sufficient to answer the question.
E) The data in both statements I and II together are necessary to answer the question.

Question 30: The question consists of two statements numbered "I and II" given below it. You have to decide whether the data provided in the statements are sufficient to answer the question.
Find the area of the isosceles triangle.
Statement I: Perimeter of the triangle is 124 cm .
Statement II: Length of base of the triangle is 36 cm .
A) The data in statement I alone are sufficient to answer the question, while the data in statement II alone are not sufficient to answer the question.
B) The data in statement II alone are sufficient to answer the question, while the data in statement I alone are not sufficient to answer the question.
C) The data either in statement I alone or in statement II alone are sufficient to answer the question.
D) The data given in both statements I and II together are not sufficient to answer the question.
E) The data in both statements I and II together are necessary to answer the question.

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Question 31: At what rate \% per annum, a principal of Rs. 7500 will amount to Rs. 12960 in a period of 3 years if the rate is compounded annually.
A) $20 \%$
B) $10 \%$
C) $15 \%$
D) $12 \%$
E) None of these

Question 32: A shopkeeper sold an article after offering two successive discounts of $20 \%$ and $x \%$ and sold the article for Rs. 492. Find the value of ' $x$ ' if marked price of the article is Rs. 750.
A) $15 \%$
B) $18 \%$
C) $25 \%$
D) $20 \%$
E) None of these

Question 33: The ratio of perimeter of a rectangle and square is 5:6, respectively. If the length of rectangle is 2 cm more than its breadth and area of the square is $900 \mathrm{~cm}^{2}$. Find the area of the rectangle.
A) $664 \mathrm{~cm}^{2}$
B) $654 \mathrm{~cm}^{2}$
C) $624 \mathrm{~cm}^{2}$
D) $684 \mathrm{~cm}^{2}$
E) None of these

Question 34: A sum of Rs. 6.40 is made up of 80 coins which are either 10-paise or 5 -paise coins. Find the number of 5 -paise coins.
A) 38
B) 42
C) 48
D) 32
E) None of these

Question 35: Prerna invested Rs. 2800 in a business and after some time Archna joined her investing Rs. 3200. At the end of year,Prerna received Rs. 3810 profit out of total profit of Rs. 6350. After how much time did Archna join the business?
A) 5 months
B) 7 moths
C) 6 months
D) 4 months
E) None of these

Question 36: A man can row at the speed of $24 \mathrm{~km} / \mathrm{h}$ in still water. The respective ratio of the time taken to row a certain distance in upstream and same distance downstream is $5: 3$. Find the speed of stream.
A) $4 \mathrm{~km} / \mathrm{h}$
B) $8 \mathrm{~km} / \mathrm{h}$
C) $6 \mathrm{~km} / \mathrm{h}$
D) $9 \mathrm{~km} / \mathrm{h}$
E) None of these

Question 37: In how many ways, can the word EXCEPTION be arranged so that all the vowels come together?
A) 7440
B) 8640
C) 8120
D) 7680
E) None of these

Question 38: The average run scored by a batsman in 18 matches is 64.5. In next match, he scored ' $x$ ' runs and his average increased by 0.5 . Find the value of ' $x$ '.
A) 72
B) 76
C) 68
D) 74
E) None of these

Question 39: Four years ago, Mother's age was 6 years less than thrice the son's age. After 4 years, son will be 1 year younger than half his mother's age. Find their average present age.
A) 32 years
B) 34 years
C) 33 years
D) 35 years
E) None of these

Question 40: Ratio of monthly income of John and Johnson is 6:7, respectively while the ratio of their savings is 5:6. If monthly expenditure of John and Johnson is Rs. 7000 and Rs. 8000, respectively then find monthly income of Johnson.
A) Rs. 12000
B) Rs. 14000
C) Rs. 12500
D) Rs. 21000
E) None of these

Question 41: Twenty-eight men working 10 hours in a day can make 150 blankets in 15 days. Find how many women will be required to make 120 blankets working 9 hours per day for 14 days if the work of 2-men is same as the work done by 3-women.
A) 40
B) 44
C) 36
D) 42
E) None of these

Question 42: In a fair, the average of number of males and females is $625.60 \%$ of males and $40 \%$ of females in the fair are adult. If the total number of children in the fair is 620 , then find the average of number of male children and female adults, in the fair. (Total people = adult + children)
A) 200
B) 280
C) 225
D) 250
E) 210

Question 43: Two wheels $A$ and $B$ are of radius 21 cm and 42 cm respectively. Both wheels are rolled at the same time towards each other and distance between their centres is 2043 cm , and they both meet after 12 seconds by making equal number of revolutions. Find the speed of wheel B.
A) $120 \mathrm{~cm} / \mathrm{sec}$
B) $66 \mathrm{~cm} / \mathrm{sec}$
C) $55 \mathrm{~cm} / \mathrm{sec}$
D) $132 \mathrm{~cm} / \mathrm{sec}$
E) $110 \mathrm{~cm} / \mathrm{sec}$

Question 44: Pipe A and pipe B can fill a tank in 10 hours and 12 hours, respectively while pipe $C$ takes 20 hours to empty the tank. Pipe B and C were opened for 15 hours and then closed and then pipe A alone takes some hours to fill the tank. Find the total time taken by all the three pipes to fill the tank by this process.
A) 18 hours
B) 20 hours
C) 24 hours
D) 16 hours
E) 21 hours

Question 45: An article is marked up by $20 \%$ and then discount of $10 \%$ is offered on it. By this process the article is sold for Rs. 756. What should be the mark up percentage so that there is twice the profit percent as compared to previous transaction, and the discount offered is $20 \%$.
A) $40 \%$
B) $45 \%$
C) $35 \%$
D) $20 \%$
E) $30 \%$

Directions: Answer the questions based on the information given below.

The given bar graph shows the percentage distribution of number of people living in different blocks of a society of 1600 residents.

Note: Number of residents in a block = Number of (males + females) in that block


Question 46: Find the difference between number of residents living in block $C$ and the number of residents living in block E .
A) 48
B) 54
C) 84
D) 72
E) 64

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Question 47: Number of residents living in block E is what percentage more or less than the number of residents living in block $B$ of society?
A) $20 \%$
B) $25 \%$
C) $40 \%$
D) $50 \%$
E) None of these

Question 48: If the ratio of number of males to females living in block $C$ is $6: 5$ and block $A$ is 3: 2 , respectively, find the ratio of the number of males in block $A$ to the number of males in block C.
A) $1: 1$
B) $4: 3$
C) $2: 3$
D) 7:6
E) $4: 5$

Question 49: If the ratio of the number of males in block $B$ to the number of males in block $C$ is 6: 5 , and number of females in block $B$ is equal to the number of females in block $C$, then find the number of females in block $B$.
A) 184
B) 172
C) 156
D) 178
E) 192

Question 50: Find the average number of residents living in block $D$ and block E taken together.
A) 248
B) 254
C) 264
D) 272
E) 284

निर्देश: नीचे दी गई जानकारी के आधार पर प्रश्नों के उत्तर दें।
तीन types की दौड़ें आयोजित किए जाते हैं अर्थात $400 \mathrm{~m}, 800 \mathrm{~m}$ और 1000 ml 400 m की दौड़ में भाग लेने वाले पुरुषों की संख्या 800 m की दौड़ में भाग लेने वाली महिलाओं की संख्या से $25 \%$ अधिक है। 800 m की दौड़ और 1000 m की दौड़ में भाग लेने वाली महिलाओं की संख्या का अनुपात क्रमशः $2: 9$ है। 800 m की दौड़ और 1000 m की दौड़ में भाग लेने वाले व्यक्तियों (पुरुष + महिला) की संख्या क्रमशः 1000 और 1350 है।दी गई तीन प्रकार की दौड़ में भाग लेने वाले पुरुषों की औसत संख्या 500 है। 400 m की दौड़ में 700 महिलाओं ने भाग लिया।

नोट: किसी भी व्यक्ति ने एक से अधिक प्रकार की दौड़ में भाग नहीं लिया।
प्रश्न 1: 400 m दौड़ और 800 m दौड़ में भाग लेने वाले पुरुषों की संख्या और 1000 m दौड़ में भाग लेने वाले कुल व्यक्तियों की संख्या का अनुपात ज्ञात करें?
A) $2: 5$
B) $3: 8$
C) $5: 4$
D) $7: 9$
E) $1: 3$

प्रश्न 2: उन महिलाओं की संख्या का औसत ज्ञात करें, जिन्होंने दिए गए तीन प्रकार की दौड़ में भाग लिया था।
A) 500
B) 560
C) 600
D) 450
E) 750

प्रश्न 3: 400 m की दौड़ में भाग लेने वाले व्यक्तियों की संख्या 800 m की दौड़ में भाग लेने वाले पुरुषों की संख्या से कितने प्रतिशत अधिक / कम है?
A) $18.75 \%$
B) $12.25 \%$
C) $16.15 \%$
D) $20.45 \%$
E) $17.25 \%$

प्रश्न 4: 1500 m की एक अन्य दौड़ भी आयोजित की गई थी। 1000 m की दौड़ में भाग लेने वाले पुरुषों की संख्या और 1500 m की दौड़ में भाग लेने वाले पुरुषों की संख्या का अनुपात $3: 5$ है। यदि 1500 m की दौड़ में भाग लेने वाली महिलाओं की संख्या पुरुषों की तुलना में $40 \%$ अधिक थी, तो उन महिलाओं की संख्या ज्ञात करें, जिन्होंने 1500 m की दौड़ में भाग लिया था।
A) 1200
B) 1050
C) 1350
D) 1400
E) इनमें से कोई नहीं

प्रश्न 5: 400 m दौड़ और 1000 m दौड़ में भाग लेने वाली महिलाओं की संख्या और 800 m दौड़ में भाग लेने वाली महिलाओं की संख्या के बीच का अंतर ज्ञात कीजिए।
A) 1200
B) 1400
C) 1000
D) 1800
E) 1600

प्रश्न 6: निम्नलिखित प्रश्न में प्रश्न चिहन (?) के स्थान पर क्या अनुमानित मान आएगा? (नोट: आपको सटीक मान की गणना करने की आवश्यकता नहीं है।)
$41.78 \%$ of $1499+(9 / 13) \times 389.84=? \%$ of $1599.67+180.45$
A) 32
B) 45
C) 54
D) 65
E) 90

प्रश्न 7: निम्नलिखित प्रश्न में प्रश्न चिहन (?) के स्थान पर क्या अनुमानित मान आएगा? (नोट: आपको सटीक मान की गणना करने की आवश्यकता नहीं है।)
$\sqrt{ } 2310 \times 4.99+(359.72+519.87)=?^{2}+63.88 \%$ of 150.42
A) 30
B) 28
C) 32
D) 34
E) 36

प्रश्न 8: निम्नलिखित प्रश्न में प्रश्न चिहन (?) के स्थान पर क्या अनुमानित मान आएगा? (नोट: आपको सटीक मान की गणना करने की आवश्यकता नहीं है।)
$24.99 \%$ of $1619.78+(1259.84 \div 12.24)=? \times 16.98$
A) 30
B) 58
C) 12
D) 90
E) 120

प्रश्न 9: निम्नलिखित प्रश्न में प्रश्न चिहन (?) के स्थान पर क्या अनुमानित मान आएगा? (नोट: आपको सटीक मान की गणना करने की आवश्यकता नहीं है।)
$24.45 \%$ of $14.99 \%$ of $14999.78+159.80=? \%$ of 1999.78
A) 24
B) 48
C) 35
D) 54
E) 80

प्रश्न 10: निम्नलिखित प्रश्न में प्रश्न चिह्हन (?) के स्थान पर क्या अनुमानित मान आएगा? (नोट: आपको सटीक मान की गणना करने की आवश्यकता नहीं है।)
$(24.78 \times 11.67)+(7199.67 \div 14.99)=? \times 12.65$
A) 112
B) 20
C) 45
D) 90
E) 60

प्रश्न 11: निम्नलिखित प्रश्न में प्रश्न चिन्ह (?) के स्थान पर क्या अनुमानित मूल्य आएगा?(नोट: आपको सटीक मान की गणना करने की आवश्यकता नहीं है।)
$(3.25 \times 149.67)+(7.12 \times 199.78)=? \times 24.89$
A) 20
B) 40
C) 70
D) 105
E) 130

प्रश्न 12: 649.87 के $19.89 \%$ को 150.25 में जोड़ा जाता है और फिर परिणामी को 3.67 से गुना किया जाता है, जहाँ परिणामी मान ' $x$ ' और 15.76 का गुणनफल है|' $x$ ' का मान ज्ञात करें।
A) 70
B) 40
C) 120
D) 150
E) 10

निर्देश: नीचे दी गई जानकारी के आधार पर प्रश्नों के उत्तर दें।

नीचे दिया गया pie chart छह अलग-अलग schools में छात्रों की कुल संख्या के प्रतिशत वितरण को दर्शाता है। सभी छह schools में छात्रों की कुल संख्या 8000 है और School D में लड़कों की संख्या और लड़कियों की संख्या का अनुपात $9: 7$ है।


नीचे दिया गया pie chart संबंधित schools में लड़कों की संख्या का प्रतिशत वितरण दर्शाता है।


प्रश्न 13: School C में लड़कों और लड़कियों की संख्या का अनुपात कितना है?
А) $63: 62$
B) $61: 62$
C) $62: 63$
D) $65: 63$
E) इनमें से कोई नहीं

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प्रश्न 14: School $A$ में लड़कों की संख्या उसी school में लड़कियों की संख्या से कितना प्रतिशत अधिक / कम है?
A) $25 \%$
B) $60 \%$
C) $50 \%$
D) $40 \%$
E) इनमें से कोई नहीं

प्रश्न 15: School $B$ में लड़कों और लड़कियों की संख्या के बीच का अंतर कितना है?
A) 560
B) 440
C) 520
D) 480
E) इनमें से कोई नहीं

प्रश्न 16: School $E$ में लड़कियों की संख्या उसी school में लड़कों की संख्या का लगभग कितना प्रतिशत है?
A) $42.4 \%$
B) $35.6 \%$
C) $29.6 \%$
D) $23.2 \%$
E) $20.3 \%$

प्रश्न 17: School $G$ में लड़कों की संख्या school $F$ की तुलना में $25 \%$ अधिक है और school $F$ और $G$ में लड़कियों की संख्या का अनुपात क्रमशः $8: 9$ है। School G में छात्रों की कुल संख्या ज्ञात करें:
A) 1434
B) 1464
C) 1424
D) 1444
E) इनमे से कोई नहीं

प्रश्न 18: प्रश्न में, दो समीकरण $\mid$ और $I I$ दिए गए हैं। आपको $x$ और $y$ के बीच सही संबंध स्थापित करने और सही विकल्प चुनने के लिए दोनों समीकरणों को हल करना होगा।
I. $7 x+4 y=116$
II. $5 x+3 y=84$
A) $x>y$
B) $x<y$
C) $x=y$ या सम्बन्ध स्थापित नहीं किया जा सकता
D) $x \geq y$
E) $x \leq y$

प्रश्न 19: प्रश्न में, दो समीकरण I और II दिए गए हैं। आपको $x$ और $y$ के बीच सही संबंध स्थापित करने और सही विकल्प चुनने के लिए दोनों समीकरणों को हल करना होगा।
I. $x^{2}+12 x=288$
II. $y^{2}+6 y=216$
A) $x>y$
B) $x<y$
C) $x=y$ या सम्बन्ध स्थापित नहीं किया जा सकता
D) $x \geq y$
E) $x \leq y$

प्रश्न 20: प्रश्न में, दो समीकरण । और $\|$ दिए गए हैं। आपको $x$ और $y$ के बीच सही संबंध स्थापित करने और सही विकल्प चुनने के लिए दोनों समीकरणों को हल करना होगा।
I. $8 x^{2}=4 x^{2}+56 x-195$
II. $y^{2}+144=24 y$
A) $x>y$
B) $x<y$
C) $x=y$ या सम्बन्ध स्थापित नहीं किया जा सकता
D) $x \geq y$
E) $x \leq y$

प्रश्न 21: प्रश्न में, दो समीकरण । और II दिए गए हैं। आपको $x$ और $y$ के बीच सही संबंध स्थापित करने और सही विकल्प चुनने के लिए दोनों समीकरणों को हल करना होगा।
I. $(x+9)^{2}=39 x-27$
II. $(y-8)^{2}=2 y-13$
A) $x>y$
B) $x \geq y$
C) $x \leq y$
D) $x<y$
E) $x=y$ or the relationship cannot be established

प्रश्न 22: प्रश्न में, दो समीकरण । और II दिए गए हैं। आपको $x$ और $y$ के बीच सही संबंध स्थापित करने और सही विकल्प चुनने के लिए दोनों समीकरणों को हल करना होगा।

1. $x^{2}+7 x=60$
II. $y^{2}+30 y+216=0$
A) $x>y$
B) $x<y$
C) $x=y$ or the relationship cannot be established
D) $x \geq y$
E) $x \leq y$

निर्देश: नीचे दी गई जानकारी के आधार पर प्रश्नों के उत्तर दें।
नीचे दिए गये टेबल में पांच अलग-अलग शहरों में café coffee day की शाखाओं की संख्या और कर्मचारियों की कुल संख्या दिखाई गई है। यह प्रत्येक दिए गए शहरों में पुरुष और महिला कर्मचारियों के अनुपात को भी दर्शाता है।

| City | Branches | Total number <br> of employees | Male:Female |
| :---: | :---: | :---: | :---: |
| Mumbai | 25 | 450 | $2: 3$ |
| Kolkata | 18 | 360 | $1: 1$ |
| Delhi | 24 | 576 | $5: 4$ |
| Hyderabad | 12 | 264 | $6: 5$ |
| Bhopal | 16 | 320 | $3: 5$ |

प्रश्न 23: Delhi में café coffee day के महिला कर्मचारियों की संख्या और Hyderabad में café coffee day के पुरुष कर्मचारियों की संख्या का अनुपात ज्ञात करें?
A) $4: 5$
B) $9: 10$
C) $16: 9$
D) $16: 15$
E) इनमें से कोई नहीं

प्रश्न 24: Mumbai में café coffee day की प्रत्येक शाखा में कर्मचारियों की औसत संख्या ज्ञात करें?
A) 21
B) 24
C) 15
D) 18
E) 20

प्रश्न 25: Mumbai में café coffee day की महिला कर्मचारियों की संख्या, Kolkata में café coffee day के कर्मचारियों की कुल संख्या का कितना प्रतिशत है?
A) $75 \%$
B) $80 \%$
C) $50 \%$
D) $40 \%$
E) $60 \%$

प्रश्न 26: Hyderabad और Bhopal में café coffee day के पुरुष कर्मचारियों की औसत संख्या कितनी है?
A) 96
B) 145
C) 123
D) 132
E) 120

प्रश्न 27: Kolkata में प्रत्येक शाखा में café coffee day की महिला कर्मचारियों की औसत संख्या कितनी है?
A) 10
B) 15
C) 18
D) 12
E) 20

## IBPS SO 2022-23

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कथन I: A को B और C द्वारा प्राप्त कुल राशि का $5 / 7$ वां भाग मिलता है।
कथन II: C को शेष दोनों के द्वारा प्राप्त राशि का $3 / 16$ मिलता है।
A) केवल कथन । में दी गई जानकारी प्रश्न का उत्तर देने के लिए पर्याप्त है, जबकि केवल कथन II में दी गई जानकारी प्रश्न का उत्तर देने के लिए पर्याप्त नहीं है।
B) केवल कथन II में दी गई जानकारी प्रश्न का उत्तर देने के लिए पर्याप्त है, जबकि केवल कथन । में दी गई जानकारी प्रश्न का उत्तर देने के लिए पर्याप्त नहीं है।
C) या केवल कथन । या केवल कथन ॥ में दी गई जानकारी प्रश्न का उत्तर देने के लिए पर्याप्त है |
D) दोनों कथन । और ॥ में दी गई जानकारी प्रश्न का उत्तर देने के लिए पर्याप्त नहीं है।
E)

दोनों कथन । और II में दी गई जानकारी प्रश्न का उत्तर देने के लिए आवश्यक है।
प्रश्न 29: निम्नलिखित प्रश्न में दो कथन । और II दिए गए हैं। आपको यह तय करना है कि कथन में दी गई जानकारी प्रश्न का उत्तर देने के लिए पर्याप्त है या नहीं है। सभी कथन को पढ़ें और उत्तर दें।
यदि $A, B$ से 32 वर्ष बड़ा है, तो $A$ की वर्तमान आयु है:
कथन $I$ : ठीक 8 वर्ष पहले, $A$ की आयु $B$ की आयु का 5 गुना था।
कथन II: 12 वर्षों के बाद, $A$ और $B$ की आयु का अनुपात $15: 7$ होगा।
A) केवल कथन । में दी गई जानकारी प्रश्न का उत्तर देने के लिए पर्याप्त है, जबकि केवल कथन ॥ में दी गई जानकारी प्रश्न का उत्तर देने के लिए पर्याप्त नहीं है।
B) केवल कथन II में दी गई जानकारी प्रश्न का उत्तर देने के लिए पर्याप्त है, जबकि केवल कथन । में दी गई जानकारी प्रश्न का उत्तर देने के लिए पर्याप्त नहीं है।
C) या केवल कथन । या केवल कथन ॥ में दी गई जानकारी प्रश्न का उत्तर देने के लिए पर्याप्त है |
D) दोनों कथन । और । में दी गई जानकारी प्रश्न का उत्तर देने के लिए पर्याप्त नहीं है।
E) दोनों कथन I और II में दी गई जानकारी प्रश्न का उत्तर देने के लिए आवश्यक है

प्रश्न 30: निम्नलिखित प्रश्न में दो कथन । और ॥ दिए गए हैं। आपको यह तय करना है कि कथन में दी गई जानकारी प्रश्न का उत्तर देने के लिए पर्याप्त है या नहीं है। सभी कथन को पढ़ें और उत्तर दें। समद्विबाहु त्रिभुज का क्षेत्रफल ज्ञात करें?

कथन I: त्रिभुज की परिधि 124 cm है।
कथन II: त्रिभुज के आधार की लंबाई 36 cm है।
A) केवल कथन । में दी गई जानकारी प्रश्न का उत्तर देने के लिए पर्याप्त है, जबकि केवल कथन ॥ में दी गई जानकारी प्रश्न का उत्तर देने के लिए पर्याप्त नहीं है।
B) केवल कथन II में दी गई जानकारी प्रश्न का उत्तर देने के लिए पर्याप्त है, जबकि केवल कथन । में दी गई जानकारी प्रश्न का उत्तर देने के लिए पर्याप्त नहीं है।
C) या केवल कथन । या केवल्न कथन ॥ में दी गई जानकारी प्रश्न का उत्तर देने के लिए पर्याप्त है |
D) दोनों कथन । और II में दी गई जानकारी प्रश्न का उत्तर देने के लिए पर्याप्त नहीं है।
E) दोनों कथन I और II में दी गई जानकारी प्रश्न का उत्तर देने के लिए आवश्यक है |

प्रश्न 31: चक्रवृद्धि ब्याज की प्रतिवर्ष किस दर पर, मूलधन Rs 75003 वर्षों में संचयित होकर Rs 12960 हो जाएगी यदि ब्याज की दर वार्षिक देय है?
A) $20 \%$
B) $10 \%$
C) $15 \%$
D) $12 \%$
E) इनमें से कोई नहीं

प्रश्न 32: एक दुकानदार ने $20 \%$ और $\mathrm{x} \%$ के दो क्रमिक छूट प्रदान करने के बाद एक वस्तु को Rs. 492 में बेचा । ' $x$ ' का मान ज्ञात करें यदि वस्तु का अंकित मूल्य Rs. 750 है ।
A) $15 \%$
B) $18 \%$
C) $25 \%$
D) $20 \%$
E) इनमें से कोई नहीं

प्रश्न 33: एक आयत और वर्ग की परिधि का अनुपात क्रमशः $5: 6$ है। यदि आयत की लंबाई इसकी चौड़ाई से 2 cm अधिक है और वर्ग का क्षेत्रफल $900 \mathrm{~cm}^{2}$ है। आयत का क्षेत्रफल ज्ञात करें?
A) $664 \mathrm{~cm}^{2}$
B) $654 \mathrm{~cm}^{2}$
C) $624 \mathrm{~cm}^{2}$
D) $684 \mathrm{~cm}^{2}$
E) इनमें से कोई नहीं

प्रश्न 34: Rs. 6.40 की एक राशि 80 सिक्कों से बने है जो या तो 10 -पैसे या 5 -पैसे के सिक्के हैं। 5 -पैसे के सिक्कों की संख्या ज्ञात करें?
A) 38
B) 42
C) 48
D) 32
E) इनमें से कोई नहीं

प्रश्न 35: Prerna ने Rs. 2800 एक कारोबार में निवेश कियेऔर कुछ समय बाद Archna Rs. 3200 के निवेश के साथ जुड़ गयी | वर्ष के अंत में, Prerna ने कुल लाभ Rs. 6350 में से Rs. 3810 प्राप्त किये | Archna कितने समय के बाद कारोबार से जुड़ी ?
A) 5 months
B) 7 moths
C) 6 months
D) 4 months
E) इनमें से कोई नहीं

प्रश्न 36: एक व्यक्ति शांत जल में $24 \mathrm{~km} / \mathrm{h}$ की गति से तय कर सकता है। एक नाव द्वारा निश्चित दूरी को धारा विरुद्ध में तय करने में लिया गया समय और उतनी ही दूरी धारा अनुप्रवाह में तय करने में लगने वाला समय का संबंधित अनुपात $5: 3$ है। धारा की गति ज्ञात करें?
A) $4 \mathrm{~km} / \mathrm{h}$
B) $8 \mathrm{~km} / \mathrm{h}$
C) $6 \mathrm{~km} / \mathrm{h}$
D) $9 \mathrm{~km} / \mathrm{h}$
E) इनमें से कोई नहीं

प्रश्न 37: ऐसे कितने तरीकों से EXCEPTION शब्द को व्यवस्थित किया जा सकता है ताकि सभी vowels एक साथ आए?
A) 7440
B) 8640
C) 8120
D) 7680
E) इनमें से कोई नहीं

प्रश्न 38: 18 मैचों में एक बल्लेबाज द्वारा बनाया गये औसत रन 64.5 है। अगले मैच में, उन्होंने ' $x$ ' रन बनाए और उनका औसत 0.5 से बढ़ गया। ' $x$ ' का मान ज्ञात करें?
A) 72
B) 76
C) 68
D) 74
E) इनमें से कोई नहीं

प्रश्न 39: चार वर्ष पहले, माँ की आयु पुत्र की आयु की तीनगुना से 6 वर्ष कम थी। 4 वर्ष के बाद, पुत्र अपनी माँ की आधी आयु से 1 वर्ष छोटा होगा। उनकी औसत वर्तमान आयु ज्ञात करें?
A) 32 years
B) 34 years
C) 33 years
D) 35 years
E) इनमें से कोई नहीं

प्रश्न 40: John और Johnson की मासिक आय का अनुपात क्रमशः 6: 7 है, जबकि उनकी बचत का अनुपात $5: 6$ है। यदि John और Johnson का मासिक व्यय क्रमशः Rs. 7000 और Rs. 8000 है फिर Johnson की मासिक आय ज्ञात करें?
A) Rs. 12000
B) Rs. 14000
C) Rs. 12500
D) Rs. 21000
E) इनमें से कोई नहीं

प्रश्न 41: 28 व्यक्ति एक दिन में 10 घंटे काम करके 15 दिनों में 150 blankets बना सकते हैं।उन महिलाओं की संख्या ज्ञात करें जो 120 blankets बनाने के लिए 14 दिनों तक 9 घंटे प्रति दिन काम करेगी यदि 2-पुरुषों का कार्य 3-महिलाओं के कार्य के समान है।
A) 40
B) 44
C) 36
D) 42
E) इनमें से कोई नहीं

प्रश्न 42: एक मेले में, पुरुष और महिलाओं की संख्या का औसत 625 है|मेले में, $60 \%$ पुरुष और $40 \%$ महिलाएं व्यस्क है। यदि मेले में बच्चो की कुल संख्या 620 है, तो मेले में पुरुष बच्चों और महिला व्यस्क की संख्या का औसत ज्ञात करें |(कुल व्यक्ति = व्यस्क + बच्चे)
A) 200
B) 280
C) 225
D) 250
E) 210

प्रश्न 43: पहिये $A$ और $B$ की त्रिज्या क्रमशः 21 cm और 42 cm के हैं। दोनों पहियों को एक-दूसरे की ओर एक ही समय में लुढ़काया जाता है और उनके केंद्रों के बीच की दूरी 2043 cm है, और वे दोनों 12 सेकंड के बाद समान संख्या में चक्कर लगाकर मिलते हैं। पहिया $B$ की गति ज्ञात करें?
A) $120 \mathrm{~cm} / \mathrm{sec}$
B) $66 \mathrm{~cm} / \mathrm{sec}$
C) $55 \mathrm{~cm} / \mathrm{sec}$
D) $132 \mathrm{~cm} / \mathrm{sec}$
E) $110 \mathrm{~cm} / \mathrm{sec}$

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प्रश्न 44: पाइप $A$ और पाइप $B$ क्रमशः 10 घंटे और 12 घंटे में एक टैंक भर सकते हैं, जबकि पाइप $C$ को टैंक को खाली करने में 20 घंटे लगते हैं। पाइप $B$ और $C 15$ घंटे के लिए खोले गए और फिर बंद हो गए और फिर पाइप $A$ अकेले टैंक को भरने में कुछ घंटे लेता है। इस प्रक्रिया द्वारा टैंक को भरने के लिए सभी तीन पाइपों द्वारा लिया गया कुल समय ज्ञात करें?
A) 18 hours
B) 20 hours
C) 24 hours
D) 16 hours
E) 21 hours

प्रश्न 45: एक वस्तु को $20 \%$ अधिक पर अंकित किया जाता है और फिर उस पर $10 \%$ की छूट प्रदान की जाती है। इस प्रक्रिया द्वारा वस्तु को Rs. 756 में बेचा जाता है।वस्तु को कितने प्रतिशत अधिक पर अंकित किया जाना चाहिए ताकि पिछले लेनदेन की तुलना में लाभ प्रतिशत दोगुना हो, और प्रदान किया गया छूट $20 \%$ हो।
A) $40 \%$
B) $45 \%$
C) $35 \%$
D) $20 \%$
E) $30 \%$

निर्देश: दिए गए जानकारी के आधार पर सवालों के उत्तर दें।

दिया गया bar graph 1600 निवासी के एक society में विभिन्न blocks में रह रहे व्यक्तिओं की संख्या का प्रतिशत वितरण दर्शाता है।

Note: एक block में निवासी की कुल संख्या = उस block में (पुरुष + महिला) की संख्या

## Percentage distribution of number of people living in different blocks of a society.



प्रश्न 46: Block C में रह रहे निवासियों की संख्या और block E में रह रहे निवासियों की संख्या के बीच का अंतर ज्ञात करें
A) 48
B) 54
C) 84
D) 72
E) 64

प्रश्न 47: Block $E$ में रह रहे निवासियों की संख्या block $B$ में रह रहे निवासियों की संख्या से कितना प्रतिशत अधिक या कम है?
A) $20 \%$
B) $25 \%$
C) $40 \%$
D) $50 \%$
E) None of these

प्रश्न 48: Block C और block $A$ में रह रहे पुरुष और महिलाओं की संख्या का अनुपात क्रमशः 6:5 और $3: 2$ है, तो block A और block C में रह रहे पुरुषों की संख्या का अनुपात ज्ञात करें।
A) $1: 1$
B) $4: 3$
C) $2: 3$
D) $7: 6$
E) $4: 5$

प्रश्न 49: यदि block $B$ और block $C$ में रह रहे पुरुषों की संख्या का अनुपात $6: 5$ है और block $B$ में महिलाओं की संख्या और block $C$ में महिलाओं की संख्या बराबर है तो block $B$ में महिलाओं की संख्या ज्ञात करें।
A) 184
B) 172
C) 156
D) 178
E) 192

प्रश्न 50: Block D और block E में रह रहे निवासियों की औसत संख्या ज्ञात करें।
A) 248
B) 254
C) 264
D) 272
E) 284

## ANSWER KEYS and SOLUTIONS:

| 1) - D) | 2) - C) | 3) - A) | 4) - B) | 5) - B) | 6) - B) |
| :---: | :---: | :---: | :---: | :---: | :---: |
| 7) - C) | 8) - A) | 9) - C) | 10) - E) | 11) - C) | 12) - A) |
| 13) - A) | 14) - C) | 15) - D) | 16) - C) | 17) - A) | 18) - A) |
| 19) - C) | 20) - B) | 21)-E) | 22) - D) | 23) - C) | 24) - D) |
| 25) - A) | 26) - D) | 27) - A) | 28) - E) | 29) - C) | 30) - E) |
| 31) - A) | 32) - B) | 33) - C) | 34) - D) | 35) - A) | 36) - C) |
| 37) - B) | 38) - D) | 39) - C) | 40) - B) | 41) - A) | 42) - D) |
| 43) - E) | 44) - B) | 45) - B) | 46) - E) | 47) - B) | 48) - A) |
| 49) - E) | 50) - D) |  |  |  |  |

Solution 1: D)

Let the number of females who participated in 800 m race be 4 x
Therefore, number of males who participated in 400 m race $=1.25 \times 4 \mathrm{x}=5 \mathrm{x}$
Number of females who participated in 1000 m race $=4 \mathrm{x} \times(9 / 2)=18 \mathrm{x}$
Total people who participated in 1000 m race $=1350$
Therefore, number of males who participated in 1000 m race $=(1350-18 \mathrm{x})$
Number of people who participated in 800 m race $=1000$
Therefore, Number of males who participated in 800 m race $=(1000-4 \mathrm{x})$
Also, total number of males who participated in given three types of races $=500 \times 3=1500$
Therefore, $5 \mathrm{x} 1000-4 \mathrm{x} 1350-18 \mathrm{x}=1500$
Or, $17 x=850$
Or, $x=50$
Therefore, number of males who participated in 400 m race $=5 \mathrm{x}=250$
Number of males who participated in 800 m race $=1000-4 \mathrm{x}=800$
Number of males who participated in 1000m race $=1350-18 x=450$
Total males who participated in given three types of races $=1500$
Number of females who participated in 400m race $=700$
Number of females who participated in 800 m race $=4 \mathrm{x}=200$
Number of females who participated in 1000 m race $=18 \mathrm{x}=900$
Total females who participated in given three types of races $=700200900=1800$
Therefore,

| Race | Number of males <br> who participated | Number of <br> females who <br> participated | Total people who <br> participated |
| :---: | :---: | :---: | :---: |
| 400 m | 250 | 700 | $700250=950$ |
| 800 m | 800 | 200 | 1000 |
| 1000 m | 450 | 900 | 1350 |


| Total | 1500 | 1800 |  |
| :---: | :---: | :---: | :---: |

Required ratio $=(250+800): 1350=1050: 1350=7: 9$
Hence, option d.

## Solution 2: C)

Required average $=1800 / 3=600$
Hence, option c.

## Solution 3: A)

Required percentage $=\{(950-800) / 800\} \times 100=18.75 \%$
Hence, option a.

## Solution 4: B)

According to the question,
Number of males who participated in 1500 m race $=450 \times(5 / 3)=750$
Therefore, number of females who participated in 1500 m race $=1.4 \times 750=1050$
Hence, option b.

## Solution 5: B)

Required difference $=(700+900)-200=1400$
Hence, option b.

## Solution 6: B)

$41.78 \%$ of $1499+(9 / 13) \times 389.84=? \%$ of $1599.67+180.45$
$42 \%$ of $1500+(9 / 13) \times 390 \sim$ ? of $1600+180$
$0.42 \times 1500+(9 \times 30)-180 \sim ? \%$ of 1600
?\% of $1600 \sim 630+270-180$
$? \sim(720 / 1600) \times 100=45$
Hence, option b.

Solution 7: C)
$\sqrt{ } 2310 \times 4.99+(359.72+519.87)=?^{2}+63.88 \%$ of 150.42
$\sqrt{ } 2304 \times 5+(360+520) \sim ?^{2}+64 \%$ of 150
$48 \times 5+880 \sim ?^{2}+0.64 \times 150$
$240+880 \sim ?^{2}+96$
$?^{2} \sim 1120-96$
$?^{2} \sim 1024$
$?^{2} \sim 32$

Hence, option c.

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Solution 8: A)
$24.99 \%$ of $1619.78+(1259.84 \div 12.24)=? \times 16.98$
$25 \%$ of $1620+(1260 \div 12) \sim ? \times 17$
$0.25 \times 1620+105 \sim ? \times 17$
$? \sim(405+105) \div 17$
$? \sim 510 \div 17$
? ~ 30

Hence, option a.

## Solution 9: C)

$24.45 \%$ of $14.99 \%$ of $14999.78+159.80=? \%$ of 1999.78
$24 \%$ of $15 \%$ of $15000+160 \sim$ ? of 2000
$0.24 \times 0.15 \times 15000+160 \sim ? \%$ of 2000
?\% of $2000 \sim 540+160$
$? \sim(700 / 2000) \times 100 \sim 35$
Hence, option c.

## Solution 10: E)

$(24.78 \times 11.67)+(7199.67 \div 14.99)=? \times 12.65$
$(25 \times 12)+(7200 \div 15) \sim ? \times 13$
$? \sim(300+480) \div 13$
? ~ 60

Hence, option e.

## Solution 11: C)

$(3.25 \times 149.67)+(7.12 \times 199.78)=? \times 24.89$
$(3 \times 150)+(7 \times 200) \sim ? \times 25$
$? \sim(450+1400) \div 25$
$? \sim 74$
$? \sim 70$

Hence, option c.

Solution 12: A)
According to the question,
$(19.89 \%$ of $649.87+150.25) \times 3.67=15.76 \times x$
$(20 \%$ of $650+150) \times 4 \sim 16 x$
$(0.2 \times 650+150) \times 4 \sim 16 x$
$x \sim 1120 \div 16$
$x \sim 70$

Hence, option a.

Solution 13: A)

Total number of students in school $D=0.16 \times 8000=1280$

Number of boys in school D $=9 / 16 \times 1280=720$
Number of girls in school D = 1280-720=560
Total number of boys in all five schools together $=720 / 0.15=4800$

| Schools | Total number of students | Number of boys | Number of girls |
| :---: | :---: | :---: | :---: |
| A | $\begin{gathered} 0.12 \times 8000= \\ 960 \end{gathered}$ | $\begin{gathered} 0.12 \times 4800= \\ 576 \end{gathered}$ | $960-576=384$ |
| B | $\begin{gathered} 0.18 \times 8000= \\ 1440 \end{gathered}$ | $\begin{gathered} 0.20 \times 4800= \\ 960 \end{gathered}$ | $\begin{gathered} 1440-960= \\ 480 \end{gathered}$ |
| C | $\begin{gathered} 0.25 \times 8000= \\ 2000 \end{gathered}$ | $\begin{gathered} 0.21 \times 4800= \\ 1008 \end{gathered}$ | $\begin{gathered} 2000-1008= \\ 992 \end{gathered}$ |
| D | 1280 | 720 | 560 |
| E | $\begin{gathered} 0.14 \times 8000= \\ 1120 \end{gathered}$ | $\begin{gathered} 0.18 \times 4800= \\ 864 \end{gathered}$ | $\begin{gathered} 1120-864= \\ 256 \end{gathered}$ |
| F | $\begin{gathered} 0.15 \times 8000= \\ 1200 \end{gathered}$ | $\begin{gathered} 0.14 \times 4800= \\ 672 \end{gathered}$ | $\begin{gathered} 1200-672= \\ 528 \end{gathered}$ |

Desired Ratio $=1008: 992=63: 62$

Hence, option a.

## Solution 14: C)

Desired Percentage $=[(576-384) / 384] \times 100=50 \%$
Hence, option c.

## Solution 15: D)

Desired difference $=960-480=480$

Hence, option d.

## Solution 16: C)

Desired Percentage $=256 / 864 \times 100 \sim 29.6 \%$
Hence, option c.

Solution 17: A)
Total number of students in school G $=1.25 \times 672+9 / 8 \times 528=840+594=1434$
Hence, option a.
Solution 18: A)
From II:
$5 x+3 y=84$
$y=(84-5 x) / 3$
From I:
$7 x+4 y=116$
$7 x+4 \times\{(84-5 x) / 3\}=116$
$21 x+336-20 x=348$
$x=12$
And $y=(84-5 \times 12) / 3=8$
So, $x>y$
Hence, option a.

## Solution 19: C)

From I:
$x^{2}+12 x=288$
$x^{2}+12 x-288=0$
$x^{2}+24 x-12 x-288=0$
$x(x+24)-12(x+24)=0$
$(x+24)(x-12)=0$
$x=-24,12$
From II:
$y^{2}+6 y=216$
$y^{2}+18 y-12 y-216=0$
$y(y+18)-12(y+18)=0$
$(y+18)(y-12)=0$
$y=-18,12$

| $X$ | Relation | $y$ |
| :---: | :---: | :---: |
| -24 | $<$ | -18 |
| -24 | $<$ | 12 |
| 12 | $>$ | -18 |
| 12 | $=$ | 12 |

So, no relation can be established.
Hence, option c.

## Solution 20: B)

From I:
$8 x^{2}=4 x^{2}+56 x-195$
$4 x^{2}-56 x+195=0$
$4 x^{2}-30 x-26 x+195=0$
$2 x(2 x-15)-13(2 x-15)=0$
$(2 x-13)(2 x-15)=0$
$x=13 / 2,15 / 2$
$x=6.5,7.5$
From II:
$y^{2}+144=24 y$
$y^{2}-24 y+144=0$
$y^{2}-12 y-12 y+144=0$
$y(y-12)-12(y-12)=0$
$(y-12)(y-12)=0$
$y=12,12$

| $X$ | Relation | $Y$ |
| :---: | :---: | :---: |
| 6.5 | $<$ | 12 |
| 7.5 | $<$ | 12 |

So, $x<y$.
Hence, option b.

## Solution 21: E)

From I:
$(x+9)^{2}=39 x-27$
$x^{2}+18 x+81=39 x-27$
$x^{2}-21 x+108=0$
$x^{2}-9 x-12 x+108=0$
$x(x-9)-12(x-9)=0$
$(x-9)(x-12)=0$
$x=9,12$
From II:
$(y-8)^{2}=2 y-13$
$y^{2}-16 y+64=2 y-13$
$y^{2}-18 y+77=0$
$y^{2}-7 y-11 y+77=0$
$y(y-7)-11(y-7)=0$
$(y-7)(y-11)=0$
$y=7,11$
$\square$

| 9 | $>$ | 7 |
| :---: | :---: | :---: |
| 12 | $>$ | 7 |
| 9 | $<$ | 11 |
| 12 | $>$ | 11 |

So, the relationship between x and y cannot be established.
Hence, option e.

## Solution 22: D)

From I:
$x^{2}+7 x=60$
$x^{2}+7 x-60=0$
$x^{2}+12 x-5 x-60=0$
$x(x+12)-5(x+12)=0$
$(x+12)(x-5)=0$
$x=-12,5$
From II:
$y^{2}+30 y+216=0$
$y^{2}+12 y+18 y+216=0$
$y(y+12)+18(y+12)=0$
$(y+12)(y+18)=0$
$y=-18,-12$

| X | Relation | Y |
| :---: | :---: | :---: |
| -12 | $>$ | -18 |
| -12 | $=$ | -12 |
| 5 | $>$ | -18 |
| 5 | $>$ | -12 |

So, $x \geq y$
Hence, option d.

Solution 23: C)

| City | Branches | Total <br> number of <br> employees | Average <br> number of <br> em each <br> branch | Male <br> Employees | Female <br> Employees |
| :---: | :---: | :---: | :---: | :---: | :---: |
| Mumbai | 25 | 450 | 18 | $450 / 5 \times 2=$ <br> 180 | $450 / 5 \times 3=$ <br> 270 |
| Kolkata | 18 | 360 | 20 | $360 / 2 \times 1=$ <br> 180 | $360 / 2 \times 1=$ <br> 180 |
| Delhi | 24 | 576 | 24 | $576 / 9 \times 5=$ <br> 320 | $576 / 9 \times 4=$ <br> 256 |
| Hyderabad | 12 | 264 | 22 | $264 / 11 \times 6$ <br> $=144$ | $264 / 11 \times 5$ <br> $=120$ |
| Bhopal | 16 | 320 | 20 | $320 / 8 \times 3=$ <br> 120 | $320 / 8 \times 5=$ <br> 200 |

Required ratio $=256: 144=16: 9$
Hence, option c.

## Solution 24: D)

Required average $=450 / 25=18$
Hence, option d.
Solution 25: A)

Required percentage $=270 / 360 \times 100=75 \%$
Hence, option a.

## Solution 26: D)

Required average $=(144+120) / 2=264 / 2=132$
Hence, option d.

## Solution 27: A)

Required average $=180 / 18=10$
Hence, option a.

## Solution 28: E)

Let amount received by A, B and C is Rs. x, Rs. y and Rs. z respectively.

Statement I:
$x /(y+z)=5 / 7$

So, data in statement I alone is not sufficient to answer the question.
Statement II:
$z /(x+y)=3 / 16$
So, data in statement II alone is not sufficient to answer the question.
Combining statement I and statement II, we get;
$x:(y+z)=5: 7$

And, $z:(y+x)=3: 16$
Let $\mathrm{x}+\mathrm{y}+\mathrm{z}=19 \times 12 \times \mathrm{k}$
So, $x /(x+y+z)=5 / 12$
Or, $x=5 / 12 \times 19 \times 12 \times k=95 k$
And $z=3 / 19 \times 19 \times 12 \times k=36 k$

And, $\mathrm{y}=19 \times 12 \times \mathrm{k}-95 \mathrm{k}-36 \mathrm{k}=97 \mathrm{k}$

So, profit share of $A=95 k /(95 k+36 k+97 k) \times 22800=95 / 228 \times 22800=$ Rs. 9500

Profit share of $B=97 k / 228 k \times 22800=$ Rs. 9700

Profit share of $C=36 k / 228 k \times 22800=$ Rs. 3600
Hence, option e.

Solution 29: C)

Let present age of $B$ is ' $x$ ' years
Present age of $A={ }^{\prime} x+32^{\prime}$ years
Statement I:
$x+32-8=5(x-8)$

Or, $x+24=5 x-40$
Or, $4 x=64$
Or, $x=16$
Present age of $A=16+32=48$ years
So, data in statement I alone is sufficient to answer the question.
Statement II:
$(x+32+12) /(x+12)=15 / 7$
Or, $7 x+308=15 x+180$
Or, $8 x=128$
Or, $x=16$
Present age of $A=16+32=48$ years
So, data in statement II alone is sufficient to answer the question.
Hence, option c.

## Solution 30: E)

Statement I:

Perimeter of triangle $=124 \mathrm{~cm}$
So, data in statement I alone is not sufficient to answer the question.
Statement II:

Length of base of the triangle $=36 \mathrm{~cm}$

So, data in statement II alone is not sufficient to answer the question.

Combining statement I and II we get;
Let length of equal sides is ' $x$ ' cm
So, $x+x+36=124$
Or, $x=44$
Length of altitude $=\sqrt{ }\left\{44^{2}-(36 / 2)^{2}\right\}=\sqrt{ }\left(44^{2}-18^{2}\right)=\sqrt{ }(26 \times 62)=2 \sqrt{ } 403 \mathrm{~cm}$
Desired Area $=1 / 2 \times$ length of base $\times$ length of altitude $=1 / 2 \times 2 \sqrt{ } 403 \times 36=36 \sqrt{ } 403 \mathrm{~cm}^{2}$
Hence, option e.

## Solution 31: A)

Let the rate be r\% per annum
According to question,
$12960=7500 \times[1+(r / 100)]^{3}$
$12960 / 7500=[1+(r / 100)]^{3}$
$[1+(r / 100)]^{3}=216 / 125=(6 / 5)^{3}$
$1+(r / 100)=6 / 5$
$r / 100=(6 / 5)-1=1 / 5$
$r=20 \%$
Hence, option a.

## Solution 32: B)

According to question,
$750 \times 0.8 \times(100-x) / 100=492$
$600 \times(100-x) / 100=492$
$100-x=492 / 6$
$100-x=82$
$x=18$

Hence, option b.

## Solution 33: C)

Let length of side of the square is 'a' cm
So, $a^{2}=900$
$a=30 \mathrm{~cm}$
Perimeter of square $=4 \times 30=120 \mathrm{~cm}$
Let length and breadth of the rectangle be ' $x$ ' cm and ' $(x-2)^{\prime}$ ' cm respectively
Perimeter of rectangle $=5 / 6 \times 120=100 \mathrm{~cm}$
So, $2 \times(x+x-2)=100$
$2 x-2=50$
$x=52 / 2=26 \mathrm{~cm}$
Length of rectangle $=26 \mathrm{~cm}$
Breadth of rectangle $=26-2=24 \mathrm{~cm}$
Area of rectangle $=26 \times 24=624 \mathrm{~cm}^{2}$
Hence, option c.

## Solution 34: D)

Let number of 10-paise coins be ' $x$ '
Number of 5-paise coins $=80-\mathrm{x}$
According to question,
$10 x+5 \times(80-x)=6.4 \times 100$
$10 x+400-5 x=640$
$5 x=240$
$x=48$
Number of 5-paise coins $=80-48=32$

Hence, option d.

## Solution 35: A)

Let Archna invested for x months
Archna's profit share $=6350-3810=$ Rs. 2540
Prerna's profit share = Rs. 3810;
Ratio of profit of Archana to the profit of Prerna $=2540: 3810=2: 3$
According to question,
$2800 \times 12: 3200 \times x=3: 2$
$x=7$
Hence, Archna joined the business after 5 months.
Hence, option a.

## Solution 36: C)

Let the time taken and distance travelled in upstream and downstream be 5 x hours and 3 x hours and D km.

Speed of stream $=y \mathrm{~km} / \mathrm{h}$
Speed in upstream $=24-y$
Speed in downstream $=24+y$
According to question,
$D /(24-y)=5 x$
$D /(24+y)=3 x$
(1) $\div(2)$
$(24+y) /(24-y)=5 / 3$
$72+3 y=120-5 y$
$8 y=48$
$y=6 \mathrm{~km} / \mathrm{h}$
Hence, option c.

## Solution 37: B)

Desired number of ways $=(6!\times 4!) / 2=8640$
Hence, option b.

## Solution 38: D)

Total runs scored by the batsman in 18 matches $=64.5 \times 18=1161$
Total runs including last match $=19 \times 65=1235$
Runs scored in last match $=x=1235-1161=74$
Hence, option d.

## Solution 39: C)

Let present age of mother and son be ' M ' years and ' S ' years respectively.
According to question,
$(M-4)=3 \times(S-4)-6$
$M-4=3 S-12-6$
$3 S-M=14$
And, $(S+4)=(M+4) / 2-1$
$2 S+8=M+4-2$
$M-2 S=6$.
Solving equation (1) and (2), we get
$M=46$ years and $S=20$ years
Desired Average $=(46+20) / 2=33$ years
Hence, option c.
Solution 40: B)

Let monthly income of John and Johnson be Rs. ' $6 x$ ' and Rs. ' $7 x$ ' respectively.
According to question,
$(6 x-7000) /(7 x-8000)=5 / 6$
$36 x-42000=35 x-40000$
$x=2000$
Monthly income of Johnson $=7 \times 2000=$ Rs. 14000
Hence, option b.

## Solution 41: A)

Let number of women be 'W'
According to question,
$(28 \times 15 \times 10 \times 3) / 150=(\mathrm{W} \times 14 \times 9 \times 2) / 120$
So, $W=40$
Hence, option a.

## Solution 42: D)

Let the number of males and females be ' $a$ ' and ' $b$ ', respectively.
Total number of persons in the fair $=625 \times 2=1250$
Total number of adults in the fair $=1250-620=630$
According to the question,
$0.6 a+0.4 b=630$
$0.4 a+0.6 b=620$
On solving equation (1) \& (2), we get
$a=650$ and $b=600$
Therefore,
Number of male children $=0.4 \times 650=260$

Number of female adult in the fair $=0.4 \times 600=240$

Required average $=(260+240) / 2=250$
Hence, option d.

## Solution 43: E)

Circumference of wheel $A=2 \pi r=132 \mathrm{~cm}$
Circumference of wheel $B=2 \pi r=264 \mathrm{~cm}$

Since distance between their centres is 2043 cm but when they meet, their outer surface will touch each other. So, resultant distance they will need to cover is (2043-21-42) = 1980 cm

Let $A$ covers $X$ cm before meeting $B$.
Therefore, distance covered by $B=(1980-x) c m$
According to the question,
$X / 132=(1980-X) / 264$
$3 X=1980$

Or, X = 660

Therefore, distance covered by wheel B = 1980-660=1320 cm

Speed of wheel B = 1320/12 = $110 \mathrm{~cm} / \mathrm{sec}$

Hence, option e.

## Solution 44: B)

Let the total capacity of tank = 120 units (L.C.M of 10, 12 and 20)
Efficiency of pipe $A=120 / 10=12$ units/hr
Efficiency of pipe $B=120 / 12=10$ units/hr
Efficiency of pipe $C=120 / 20=-6$ units/hr

Efficiency of pipe $B$ and $C=\{(10+(-6)\}=4$ units/hr
Tank filled in 15 hours $=15 \times 4=60$ units.

Remaining capacity of tank $=120-60=60$ units
Time taken by pipe A to fill the tank $=60 / 12=5$ hours
Required total time taken $=15+5=20$ hours
Hence, option b.

## Solution 45: B)

Let the cost price of the article be Rs. ' $x$ '.
Therefore, $1.2 \times 0.9 \mathrm{x}=756$
Or, $1.08 \mathrm{x}=756$
Or, $x=756 / 1.08=$ Rs. 700
Profit percentage $=\{(756-700) / 700\} \times 100=8 \%$
In second case,
Selling price $=1.16 \times 700=$ Rs. 812
Marked price of the article $=812 / 0.80=$ Rs. 1015
Required percentage $=\{(1015-700) / 700\} \times 100=45 \%$
Hence, option b.

## Solution 46: E)

| Block | Number of Residents |
| :---: | :---: |
| A | $0.20 \times 1600=320$ |
| B | $0.24 \times 1600=384$ |
| C | $0.22 \times 1600=352$ |
| D | $0.16 \times 1600=256$ |
| E | $0.18 \times 1600=288$ |

Therefore, required difference $=352-288=64$
Hence, option e.

## Solution 47: B)

| Block | Number of Residents |
| :---: | :---: |
| A | $0.20 \times 1600=320$ |


| B | $0.24 \times 1600=384$ |
| :---: | :---: |
| C | $0.22 \times 1600=352$ |
| D | $0.16 \times 1600=256$ |
| E | $0.18 \times 1600=288$ |

Therefore, required percentage $=[(384-288) / 384] \times 100=25 \%$
Hence, option b.

## Solution 48: A)

| Block | Number of Residents |
| :---: | :---: |
| A | $0.20 \times 1600=320$ |
| B | $0.24 \times 1600=384$ |
| C | $0.22 \times 1600=352$ |
| D | $0.16 \times 1600=256$ |
| E | $0.18 \times 1600=288$ |

Number of males living in block C $=(6 / 11) \times 352=192$
Number of males living in block $A=(3 / 5) \times 320=192$
Therefore, required ratio = 192: $192=1: 1$
Hence, option a.

## Solution 49: E)

| Block | Number of Residents |
| :---: | :---: |
| A | $0.20 \times 1600=320$ |
| B | $0.24 \times 1600=384$ |
| C | $0.22 \times 1600=352$ |
| D | $0.16 \times 1600=256$ |
| E | $0.18 \times 1600=288$ |

Let, the number of males in block $B$ and the number of males in block $C$ be $6 x$ and $5 x$ respectively.

According to question,
$6 x-5 x=384-352$
$x=32$
So, number of males in block $B=6 \times 32=192$
So, required number of females in block $B=384-192=192$

Hence, option e.

## Solution 50: D)

| Block | Number of Residents |
| :---: | :---: |
| A | $0.20 \times 1600=320$ |
| B | $0.24 \times 1600=384$ |
| C | $0.22 \times 1600=352$ |
| D | $0.16 \times 1600=256$ |
| E | $0.18 \times 1600=288$ |

Therefore, required average $=(256+288) / 2=272$
Hence, option d.

## IBPS SO Previous Year Questions - English

Directions: Read the following passage and answer the questions.

All vertebrates - from frogs and birds to human beings - require the same thyroid hormone to thrive. Every stage of brain development is modulated by the thyroid hormone and, over millions of years, the structure of this critical hormone has remained unchanged. But, increasingly, the trappings of modern life are preventing it from playing its critical role in human brain development. Thyroid hormone signalling is very vulnerable to interference by chemicals that can scramble the endocrine communication routes between cells. These endocrine disruptors, as they are called, include ubiquitous chemicals such as pesticides, plastifiers, flame retardants and surfactants, all of which are found in our food, non-stick pans, furniture, cleaning products, clothes and cosmetics. They are even found in the air we breathe and the water we drink.

This is bad news for our brains, and children's brains in particular. Thyroid hormone serves multiple functions in orchestrating the production and differentiation of the 100 billion cells that make up the human brain. Without the right amount of thyroid hormone at the right time, human babies will suffer severe intellectual disabilities, developing an IQ of only about 35. Experiments have been conducted on tadpoles to test the hypothesis that common chemicals in the environment, singly and as a mixture, can interfere with brain development in humans. Previous work had shown that tadpoles with endocrine disorders couldn't metamorphose, that is, they never become frogs. The most recent paper, published on March 7 in Scientific Reports, shows that young tadpoles exposed to a mixture of common chemicals at concentrations routinely found in human amniotic fluid not only modified thyroid hormone signalling but also reduced the total number and size of neurons and inhibited tadpole movement. Even with limited exposure of three days, significant effects on the tadpoles' brain development were observed. Tadpoles have long been used to study human developmental processes, including in the first cloning experiments back in the late 1950s because they offer important insights into how brains develop.

Research emphasises the genetic bases of autism spectrum disorders, but it is highly plausible that environmental factors could exacerbate genetic susceptibilities. In studies conducted on gestating rats, autism-like behaviour in offspring has been linked to disruptions in thyroidhormone signalling, specifically hypothyroidism. Endocrine disruption may also tell us something about the IQ decreases observed in certain populations. Comparing IQ in different populations at different time points is, of course, not scientifically rigorous. But measuring IQ at a given time point in a given population exposed to different levels of chemicals can be meaningful.

Several data sets from around the world have shown IQ scores dropping over time. Military recruitment boards in Finland and Denmark demonstrate this decrease, and similar losses are seen in other populations, including adults in France and children in the United Kingdom. Other data shows that reaction time in young people is slowing. This is surprising, perhaps, given that many young people today play screen games that require rapid responses. But the speed of neuronal transmission is dependent on myelination, the formation of the lipid sheath around the neurons, which requires thyroid hormone. Thus, reaction time is vulnerable to interruption by the endocrine disruptors present in our everyday lives.

Today, chemical contamination is such that we are all exposed to hundreds of chemicals, few of which have been fully tested for their toxic effects. Little is known about their potential effects on our hormonal systems, and even less about how they act together as mixtures to have a "cocktail effect". Most findings showing adverse effects on tadpoles' thyroid-hormone signalling, including reduced neuronal number and mobility, indicate the urgent need to revisit the way chemicals are tested before they hit the market.

Question 1: Which of the following is NOT an endocrine disruptor?
A) flame retardants
B) pesticides
C) surfactants
D) aspirin
E) plastifiers

Question 2: How do endocrine disruptor chemicals affect thyroid hormone signalling?
A) they disrupt endocrine communication routes
B) they lead to a fall in the production of endocrine hormones
C) they lead to excess production of endocrine hormones
D) they lead to inflammation of the endocrine glands
E) None of the above

Question 3: Which of the following can be included in the category 'vertebrates'?

1. spiders
2. human beings
3. birds
A) Only 2
B) Only 1 and 2
C) Only 2 and 3
D) Only 1 and 3
E) All 1, 2 and 3

Question 4: In which of the following ways can the deficiency of thyroid hormone affect human babies?
A) in increases the chances of muscular dystrophies
B) it makes them vulnerable to respiratory failure
C) it impedes the proper development of the skeletal system
D) it leads to impairment of the immune system
E) it can lead to intellectual disabilities

Question 5: According to the passage, which of the following animals is used to study human brain development?
A) lemurs
B) rabbits
C) monkeys
D) tadpoles
E) chimpanzees

Question 6: The speed of neural transmission is dependent on $\qquad$ .
A) cellular respiration
B) myelination
C) pulmonary ventilation
D) thermoregulation
E) systemic circulation

Question 7: Which of the following words is the closest in meaning to the word 'exacerbate' as used in the passage?
A) exploit
B) abate
C) aggravate
D) neglect
E) anticipate

Question 8: Which of the following words is opposite in meaning to the word 'ubiquitous' as used in the passage?
A) destitute
B) scarce
C) frivolous
D) vital
E) incongruous

## IBPS SO <br> 2022-23

Question 9: In the following question, match the sentences beginning in Column 1 with their appropriate endings in Column 2.

| Column 1 | Column 2 |
| :---: | :---: |
| A. The inadequate quality of <br> teaching in secondary schools is <br> exacerbated | D. to be more mindful of waste <br> each time we make a purchase. |

B. It is a moral imperative for each one of us
C. To truly skill women for the future, we must make proposals
E. that ensure they receive the education and skills they need to find work in the labor market. F. by a shortage of teachers with adequate subject-specific knowledge in STEM streams.
A) A and D
B) A and E
C) B and D
D) C and D
E) C and F

Question 10: In the following question, match the sentences beginning in Column 1 with their appropriate endings in Column 2.

| Column 1 | Column 2 |
| :---: | :---: |
| A. Myanmar's economic <br> expansion will depend | D. worker performance, worker <br> health and the length of stay of <br> employees in the company. |
| B. The steam engine increased <br> the productive capacity of <br> factories, | E. which led to the great <br> expansion of national and <br> international transportation <br> networks in the 19th century. |
| C. The ease or difficulty of a <br> commute impacts | F. on utilizing the country's rich <br> natural resources and human <br> capital. |

A) A and D
B) A and E
C) B and D
D) B and F
E) C and D

Question 11: In the following question, match the sentences beginning in Column 1 with their appropriate endings in Column 2.

Column 1
Column 2

| A. Women tend to put more <br> effort and time toward <br> environmental protection | D. through garbage sorting, <br> recycling, and using reusable <br> shopping bags rather than <br> disposable ones. |
| :---: | :---: |
| B. Rapid economic development <br> brings with it extensive <br> pressures on the natural <br> environment, which if not <br> managed well, | E. that about one garbage truck is <br> emptied into the ocean every <br> single minute. |
| C. The continuing popularity of <br> single-use plastics in many <br> countries means | F. will lead to underperforming <br> plans and investments, <br> unbalanced progress, and high <br> risk development. |

A) A and E
B) A and F
C) B and D
D) B and E
E) C and E

Directions: Read the following passage and answer the questions.
It's hard to make profit in space. Moving "stuff" (cargo, equipment and people) from Earth into space is an expensive process. This is because we haven't learnt how to recycle rockets yet. Since the launch of Sputnik started the space age 60 years ago, most of the spacecraft that have been launched are Expendable Launch Vehicles (ELVs), which only fly once. After delivering their payload, they either come crashing back down to Earth, burn up in the atmosphere, or simply remain in orbit as space junk.

Every time a new payload needs to be sent into space, a new ELV has to be built, costing millions of dollars. It might seem that the obvious solution is to reuse rockets. The idea of Reusable Launch Vehicles (RLVs) isn't new, but reusing rockets has proven tricky in the past. The first real attempt at making an RLV was NASA's Space Shuttle program. The Space Shuttle fleet was meant to lower the cost of space transportation by being partially reusable. But rather than lowering costs, the program increased them. The complexity and risk of the Space Shuttle fleet made maintaining and operating them expensive. And when the 30-year program ended in 2011, it may have seemed like the argument for RLVs ended with it.

But proponents of RLVs were undeterred.

A few months after the final Space Shuttle flight, SpaceX, a start-up company founded by tech billionaire Elon Musk announced a plan to make its Falcon 9 rocket reusable. SpaceX began working on ways to recover and reuse the Falcon 9's booster, the largest, most expensive part of the rocket. Two years later, the company began trying to recover used boosters by having them make controlled descents into the ocean after completing their missions. After some spectacular failures, SpaceX successfully recovered a booster for the first time in late 2015. Over the next 15 months, SpaceX recovered more and more boosters, building up a stockpile of secondhand rockets. But it still hadn't reused any of them. That changed in March 2017, when one of the recovered boosters was refurbished and used to launch a communications satellite. It wasn't the first time a rocket had been reused - that honour will always belong to the Space Shuttle program. But unlike the Space Shuttle, the reused Falcon 9 was cheaper.

Today, for the first time in history, recycling rockets makes good business sense. Even without being reused, the Falcon 9 was already much cheaper than similar medium-sized rockets. And it will only get cheaper with more reuse flights. US rocket industry heavyweight United Launch Alliance (ULA), a joint venture between Boeing and Lockheed Martin, has published a plan for reusing rockets. But even after the successful SpaceX reuse flight in March, ULA CEO Tory Bruno remains sceptical about RLVs. European rocket company Arianespace seems to be ignoring RLVs altogether.

Even if the traditional players in the rocket industry continue to ignore RLVs, SpaceX will not remain alone in its quest for reusability. Other billionaires aren't letting Musk have the industry to himself. Jeff Bezos owns Blue Origin, a rival rocket company. The company is finishing testing New Shepherd, a small suborbital rocket, and plans to start using it for sending passengers into space. The Virgin Group also wants to send tourists on suborbital flights. It has founded Virgin Galactic, which will fly passengers on SpaceShipTwo, a reusable spaceplane. At the same time, in the UK, Reaction Engines are designing the Skylon reusable spaceplane with its innovative SABRE hybrid engine.

The Japan Aerospace Exploration Agency (JAXA) is researching a reusable sounding rocket. And the Indian Space Research Organization is testing a reusable Space Shuttle-like spaceplane. In Australia, the University of Queensland is developing SPARTAN, a small RLV that uses cuttingedge scramjet engines. Time will tell which of these efforts are successful but it's clear that momentum for RLVs is building. RLVs bring with them the promise of low-cost space transportation, which could open up new worlds of opportunity in space. The age of reusability has begun.

Question 12: Which of the possible ends can an Expendable Launch Vehicle face after delivering its payload?

1. it comes crashing back down to Earth
2. it burns up in the atmosphere
3. it remains in orbit as space junk
A) Only 2
B) Only 1 and 2
C) Only 2 and 3
D) Only 1 and 3
E) All 1, 2 and 3

Question 13: The first real attempt at making an RLV was made by $\qquad$ .
A) SpaceX
B) Blue Origin
C) Virgin Galactic
D) Arianespace
E) NASA

Question 14: Which of the following is NOT true of the Space Shuttle program?
A) It was a 30 -year old program.
B) It was carried out by NASA
C) It is so far the cheapest attempt at using refurbished rocket parts.
D) It was aimed at lowering the cost of space transportation.
E) None of the above

Question 15: For what purpose will the suborbital rocket New Shepherd be used?
A) for space exploration
B) for launching a communication satellite
C) for transporting passengers
D) for warfare
E) Both (a) and (b)

Question 16: Which of the following organisations is developing an RLV that uses scramjet engines?
A) the Japan Aerospace Exploration Agency
B) the University of Queensland
C) the Indian Space Research Organization
D) Reaction Engines
E) United Launch Alliance

Question 17: Which of the following words is opposite in meaning to the word 'undeterred' as used in the passage?
A) adamant
B) indifferent
C) discouraged
D) insolent
E) aggressive

Question 18: Which of the following words is the closest in meaning to the word 'sceptical' as used in the passage?
A) whimsical
B) subtle
C) conceited
D) optimistic
E) doubtful

Directions: In the question given below, a set of sentences is given, which when properly sequenced, form a coherent paragraph. Arrange the sentences in the correct sequence, and answer the questions.
P. Crestfallen but determined to derive some meaning from the years of upheaval, the researchers set out to discover the precise drivers behind the bonobos' downfall.
Q. Habitat destruction due to logging and industrial agriculture-including palm oil cultivationcurrently ranks as the greatest threat to great ape populations.
R. Their work has yielded surprising results that could inform the work of conservationists and benefit other endangered great apes.
S. However, scientists discovered that it is not only these massive disturbances that cause widespread decline.
T. As the bonobos' fading populations unfortunately showed, even disruptions on a relatively minor scale-a forest clearing here, an uptick in hunting there-can have devastating impacts.

Question 19: Which of the following would be the FIRST statement after rearrangement?
A) $P$
B) Q
C) $R$
D) S
E) $T$

Question 20: Which of the following would be the SECOND statement after rearrangement?
A) R
B) Q
C) $P$
D) S
E) $T$

Question 21: Which of the following would be the THIRD statement after rearrangement?
A) T
B) Q
C) $R$
D) S
E) $P$

Question 22: Which of the following would be the FOURTH statement after rearrangement?
A) Q
B) $P$
C) $R$
D) S
E) $T$

Question 23: Which of the following would be the FIFTH (LAST) statement after rearrangement?
A) $T$
B) Q
C) $P$
D) S
E) R

Question 24: In the following question, one part of the sentence may have an error. Find out which part of the sentence has an error and select the appropriate option. If a sentence is free from error, select 'No Error'.
A) An action plan prepared by the
B) health authority had already begun
C) to swing into action and
D) much key changes were under way.
E) No error

Question 25: In the following question, one part of the sentence may have an error. Find out which part of the sentence has an error and select the appropriate option. If a sentence is free from error, select 'No Error'.
A) I later told my boss about
B) what had happen, but she
C) told me that I probably
D) misunderstood the situation.
E) No error

Question 26: In the following question, one part of the sentence may have an error. Find out which part of the sentence has an error and select the appropriate option. If a sentence is free from error, select 'No Error'.
A) Two fights broke out and a
B) man had to be took to the
C) hospital by an ambulance
D) as he suffered a head injury.
E) No error

Question 27: In the following question, one part of the sentence may have an error. Find out which part of the sentence has an error and select the appropriate option. If a sentence is free from error, select 'No Error'.
A) Amendments must be approved
B) by two-thirds of both houses of
C) parliament and a majority of
D) voters in a national referendum.
E) No error

Question 28: In the following question, one part of the sentence may have an error. Find out which part of the sentence has an error and select the appropriate option. If a sentence is free from error, select 'No Error'.
A) Organisers hopes that the
B) project will make it easier for
C) people to contact their GPs
D) on health and fitness matters.
E) No error

Directions: In the following passage, some parts are missing or highlighted. Read the passage carefully and answer the questions.

The search for ancestral lands in Murujuga began with the researchers seeking permission from Murujuga's traditional custodians. $\qquad$ Benjamin's team studied the shoreline and then ventured into the sea to look for $\qquad$ (B) $\qquad$ underwater landmarks for their dive team to investigate-an old riverbed, a valley, a shoreline. $\qquad$ (C) $\qquad$ the stone artifacts discovered underwater at Murujuga are a first for Australia, archaeologists elsewhere have been exploring drowned landscapes for decades now, in search of deeper histories. $\qquad$ (D) $\qquad$ the rise and fall of sea levels across geological ages to identify archaeological sites on ancient shorelines was a strategy applied over 20 years ago on the other side of the Pacific Ocean, in the bays of Haida Gwaii, an archipelago off British Columbia. (E) Many coastal cites situated on Haida Gwaii's
modern-day shores or farther upslope have been identified in the process. But to go further back in time, into the late Pleistocene, archaeologists knew they must venture deep underwater using sonar and remote-controlled submersibles. In 1999, Daryl Fedje, an archaeologist with Parks Canada at the time and now at the Hakai Institute, and his colleagues scooped up a 10,000-year-old stone tool just 10 centimeters long from a drowned coastal (F) plain now 53 meters below sea level. Like Murujuga's traditional custodians, the archipelago's Indigenous people, the Haida, were (G) not surprised by this find; it was simply a physical mark of their __(H)__ presence on the islands.

Question 29: Which of the following phrases can fit in (A)?

1. Having sought their permission
2. With their permission
3. After getting their permission
A) Only 2
B) Only 1 and 2
C) Only 1 and 3
D) Only 2 and 3
E) All 1, 2 and 3

Question 30: Which of the following words can fit in (B) as well as in the sentence below?

1. William Hague laid down a marker for the election this week, when he made a speech $\qquad$ that a Tory government would introduce tax cuts.
A) promising
B) evading
C) assuring
D) potential
E) asserting

Question 31: Which of the following connectors can fit in (C)?
A) since
B) therefore
C) unless
D) while
E) moreover

Question 32: Which of the following words can fit in (D) as well as in the sentence below?

1. He told us one evening how he had been delivered from those who were $\qquad$ his destruction.
A) plotting
B) parting
C) observing
D) monitoring
E) planning

Question 33: Which of the following words in (E) are contextually inapt?
A) cites
B) situated
C) farther
D) identified
E) All are correct

Question 34: Which of the following sentences DO NOT use the highlighted word in (F) correctly?

1. I wish to make it plain that Russell himself is not responsible, directly or indirectly, for the writing of the pamphlet.
2. I missed the plain, and the next available flight doesn't leave until tomorrow.
3. The diners were disappointed with the plain, insipid soup they were served.
A) Only 1
B) Only 1 and 3
C) Only 2
D) Only 2 and 3
E) Only 3

Question 35: Which of the following phrases can replace the highlighted portion in (G)?

1. Hardly surprised at the found
2. No wonder that the discovery
3. Not surprise at the discovery
A) Only 1 and 2
B) Only 1 and 3
C) Only 2 and 3
D) All 1, 2 and 3
E) No Improvement

Question 36: Which of the following words can fit in $(\mathrm{H})$ as well as in the sentence below?

1. He worked for 37 years at York Carriageworks and died of an illness related to asbestos, after
$\qquad$ a long and painful collapse.
A) bearing
B) lasting
C) enduring
D) withstanding
E) permanent

Question 37: In the question below, two sentences are given, each with a part missing. Choose the option that provides the word that can grammatically and contextually fit in both sentences. 1. The absence of this table would appear to be $\qquad$ , as the pages of the resubmitted document were renumbered.
2. I aimed to $\qquad$ over it for months and discuss it at length with my husband before I decided to go on tour.
A) ponder
B) intentional
C) premeditate
D) mull
E) deliberate

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Question 38: In the question below, two sentences are given, each with a part missing. Choose the option that provides the word that can grammatically and contextually fit in both sentences. 1. The 2016 report of the United Nations Conference on Trade and Development on Least Developed Countries $\qquad$ some worrisome facts indeed.
2. Accusations, probably untrue, were levelled at Gaveston that he had stolen royal funds and had purloined Isabella's wedding $\qquad$ _.
A) discloses
B) reveals
C) gifts
D) presents
E) unearths

Question 39: In the question below, two sentences are given, each with a part missing. Choose the option that provides the word that can grammatically and contextually fit in both sentences. 1. The report is based on a widely recognised formula, the Gini coefficient, that $\qquad$ quality of life.
2. Philippine President Rodrigo Duterte's bloody war on drugs is just the latest in a region where drug use has usually been met with draconian $\qquad$ .
A) measures
B) quantifies
C) steps
D) estimates
E) actions

Question 40: In the question below, two sentences are given, each with a part missing. Choose the option that provides the word that can grammatically and contextually fit in both sentences. 1. $\qquad$ the position of its member states, ASEAN has also adopted a hardline stance, reaffirming the region's "zero-tolerance approach" to drugs in its annual summit.
2. The birth rate is the lowest in Europe, $\qquad$ deep pessimism about the future and the astonishingly high cost of housing.
A) regarding
B) reflecting
C) indicating
D) considering
E) reviewing

Question 41: In the question below, two sentences are given, each with a part missing. Choose the option that provides the word that can grammatically and contextually fit in both sentences. 1. Even in countries that continue to implement tough approaches, localised interventions are producing $\qquad$ results.
2. I'm not $\qquad$ we'll win it, but I can assure all the supporters that we're determined to give it our best shot.
A) promising
B) encouraging
C) positive
D) guaranteeing
E) favourable

Question 42: In the following question, a sentence is given with a phrase or idiom highlighted in bold. Select the option given below that can replace the highlighted phrase and mark that as your answer.
Nigeria's decision to suspend Twitter indefinitely could costed the country economically in terms of new investments into its technology sector.
A) have negative affects on the country's economy
B) proving economically detrimental for the country
C) be harmful for the country's economy
D) taken a toll on the economy of the country
E) No improvement

Question 43: In the following question, a sentence is given with a phrase or idiom highlighted in bold. Select the option given below that can replace the highlighted phrase and mark that as your answer.
Hopes for a global human-rights awakening has given way to frank assessments of the persistence of slave labor and extreme poverty.
A) have given away
B) have enabled
C) has made it possible to do
D) have been an impede to
E) No improvement

Question 44: In the question below, a sentence is given with a part highlighted in bold. From the options, choose the phrase that can replace it in order to make the sentence grammatically and meaningfully correct.
In December she was finally put on the wait list, but then developed a lung infection that led too pneumonia.
A) that led to
B) leading up to
C) that led astray
D) that lead to
E) No Improvement

Question 45: In the question below, a sentence is given with a part highlighted in bold. From the options, choose the phrase that can replace it in order to make the sentence grammatically and meaningfully correct.
It are being speculated that there could be a series of simultaneous bombings across the country.
A) It is being speculate
B) Some speculating
C) There is speculation
D) Amid speculation
E) No Improvement

Question 46: In the question below, a sentence is given with a part highlighted in bold. From the options, choose the phrase that can replace it in order to make the sentence grammatically and meaningfully correct.
The conditions that intend to produce terrorists, suicide bombers etc. should be addressed and fixed.
A) that are likely
B) that tend to
C) that might be
D) that is inclined to
E) No Improvement

Question 47: In the question below, a sentence is given with a part highlighted in bold. From the options, choose the phrase that can replace it in order to make the sentence grammatically and meaningfully correct.
In some areas, land clearing and the introduction of cats have caused frilled lizard numbers to decline.
A) on a decline
B) to respectfully decline
C) to fall sharp
D) to reduced
E) No Improvement

Question 48: In the question below, a sentence is given with a part highlighted in bold. From the options, choose the phrase that can replace it in order to make the sentence grammatically and meaningfully correct.
The proposed lake has expressed concern locally in case it affects underground water supplies.
A) causing the concerned
B) is a cause of concern
C) a lot of concern for
D) caused some concern
E) No Improvement

Question 49: In the following question, match the sentences beginning in Column 1 with their appropriate endings in Column 2.

| Column 1 | Column 2 |
| :---: | :---: |
| A. A combination of overfishing, <br> pollution and environmental <br> damage has led | D. to significant losses in both <br> quantities of fish and the <br> number of fish species available. |
| B. Employers can assist <br> freelancers by | E. it may become a trans- <br> generational disaster. |
| C. Psychologists have warned if <br> we don't start to address the <br> mental health emergency of <br> young people's anxiety and <br> depression, | F. designing interesting jobs with <br> on-the-job learning and growth <br> opportunities. |

A) A and D
B) A and F
C) B and E
D) C and D
E) C and F

Question 50: In the following question, match the sentences beginning in Column 1 with their appropriate endings in Column 2.

| Column 1 | Column 2 |
| :---: | :---: |
| A. The destruction of tropical <br> forest is a major contributor | D. to the emergency room <br> because of a lack of other <br> treatment options. |
| B. Paediatricians have said they <br> are seeing growing numbers of <br> young people coming | E. to biodiversity loss and the <br> climate crisis. |
| C. Recent headlines suggest that <br> mask wearing has become | F. a signal of political allegiance. |

A) A and D
B) A and F
C) B and D
D) B and E
E) C and E

## ANSWER KEYS and SOLUTIONS:

| 1) - D) | 2) - A) | 3) - C) | 4) - E) | 5) - D) | 6) - B) |
| :---: | :---: | :---: | :---: | :---: | :---: |
| 7) - C) | 8) - B) | 9) - C) | 10) - E) | 11) - E) | 12) - E) |
| 13) - E) | 14) - C) | 15) - C) | 16) - B) | 17) - C) | 18) - E) |
| 19) - B) | 20) - D) | 21) - A) | 22) - B) | 23) - E) | 24) - D) |
| 25) - B) | 26) - B) | 27) - E) | 28) - A) | 29) - E) | 30) - A) |
| 31) - D) | 32) - A) | 33) - A) | 34) - C) | 35) - E) | 36) - C) |
| 37) - E) | 38) - D) | 39) - A) | 40) - B) | 41) - A) | 42) - C) |
| 43) - B) | 44) - A) | 45) - C) | 46) - B) | 47) - E) | 48) - D) |
| 49) - A) | 50) - C) |  |  |  |  |

## Solution 1: D)

Aspirin does not feature in the list of endocrine disruptors given in the passage. Refer to the line:
"These endocrine disruptors, as they are called, include ubiquitous chemicals such as pesticides, plastifiers, flame retardants and surfactants, all of which are found in our food, non-stick pans, furniture, cleaning products, clothes and cosmetics." Thus, (d) is the right answer.
(a), (b), (c) and (e) are incorrect. According to the line quoted above, they are all examples of endocrine disruptors.

## Solution 2: A)

The passage tells us that endocrine disruptor chemicals affect thyroid hormone signalling by disrupting the endocrine communication routes between cells. Refer to the line: "Thyroid hormone signalling is very vulnerable to interference by chemicals that can scramble the endocrine communication routes between cells." Thus, (a) is the right answer.
(b), (c) and (d) are incorrect. The passage does not claim that endocrine disruptor chemicals lead to an increase or decrease in the production of endocrine hormones. Neither do they cause inflammation of the endocrine glands.

## Solution 3: C)

2 and 3 are correct. According to the passage, human beings and birds fall into the category of vertebrates. Refer to the line: "All vertebrates - from frogs and birds to human beings - require the same thyroid hormone to thrive." Thus, (c) is the right answer.

1 is incorrect. The passage does not include spiders in the list of vertebrates.

## Solution 4: E)

The passage tells us that the deficiency of thyroid hormone can affect human babies by causing intellectual disabilities. Refer to the lines: "Without the right amount of thyroid hormone at the right time, human babies will suffer severe intellectual disabilities, developing an IQ of only about 35." Thus, (e) is the right answer.

The other options are incorrect. Nowhere does the passage say that the deficiency of thyroid hormone in human babies can lead to muscular dystrophies, respiratory failure, impeded development of the skeletal system or impairment of the immune system.

## Solution 5: D)

The passage tells us that tadpoles are used to study human brain development. Refer to the line: "Tadpoles have long been used to study human developmental processes, including in the first cloning experiments back in the late 1950s because they offer important insights into how brains develop." Thus, (d) is the right answer. The passage does not mention lemurs, rabbits, monkeys or chimpanzees in the context of studying human brain development, which renders the other options incorrect.

## Solution 6: B)

The passage tells us that the speed of neural transmission depends on myelination. Refer to the line: "But the speed of neuronal transmission is dependent on myelination, the formation of the lipid sheath around the neurons, which requires thyroid hormone." Thus, (b) is the right answer.

The passage does not tell us whether or not the other option affects the speed of neural transmission.

## Solution 7: C)

The passage uses EXACERBATE to convey that environmental factors could worsen the genetic susceptibilities in human beings. AGGRAVATE is the closest in meaning to the word as used in the passage. Thus, (c) is the right answer.

EXPLOIT - make use of

ABSTAIN - restrain oneself from doing something
NEGLECT - not pay proper attention to

ANTICIPATE - expect or foresee

## Solution 8: B)

The passage uses UBIQUITOUS to convey that endocrine disruptors can be found in very commonly used products. SCARCE is opposite in meaning to the word as used in the passage. Thus, (b) is the right answer.

DESTITUTE - extremely poor
FRIVOLOUS - light-hearted
VITAL - essential
INCONGRUOUS - inappropriate or unsuitable

## Solution 9: C)

(c) is the right answer. The correct pairs are AF, BD and CE.

AF - A begins the sentence by stating that the low quality of teaching in secondary schools is made worse. F concludes the sentence by adding that it is made worse by a shortage of teachers with adequate subject-specific knowledge in STEM streams.
$B D$ - $B$ begins the sentence by talking about something that is a moral obligation for us. D clarifies that the sentence is talking about being more mindful of waste each time we make a purchase.

CE - C begins the sentence by starting a discussion on what we should do to skill women for the future. E concludes the sentence by saying that we should ensure they receive the education and skills they need to find work in the labor market.

## Solution 10: E)

$(e)$ is the right answer. The correct pairs are AF, BE and CD.
AF - A begins the sentence by talking about what Myanmar's economic expansion will depend. F tells us that it will depend on utilizing the country's rich natural resources and human capital.

BE - B tells us that the steam engine increased the productive capacity of factories. E concludes the sentence by talking about the event that took place as a result of that - the great expansion of national and international transportation networks in the 19th century.

CD - C talks about the impacts of the ease or difficulty of a commute. $D$ adds that it impacts worker performance, worker health and the length of stay of employees in the company.

## Solution 11: E)

(e) is the right answer. The correct pairs are AD, BF and CE.

AD - A begins the sentence by talking about how women put more effort and time toward environmental protection. $D$ tells us that they do so by garbage sorting, recycling, and using reusable shopping bags rather than disposable ones.

BF - B starts a discussion about what might happen if pressures on the natural environment are not managed well. $F$ tells us that it will lead to underperforming plans and investments, unbalanced progress, and high risk development.

CE - C begins the sentence by opening a discussion on what the continuing popularity of singleuse plastics means. $E$ tells us that it means that about one garbage truck is emptied into the ocean every single minute.

## Solution 12: E)

After delivering its payload, an Expendable Launch Vehicle can come crashing back down to Earth, burn up in the atmosphere or remain in orbit as space junk. All three outcomes are possible. Refer to the line: "After delivering their payload, they either come crashing back down to Earth, burn up in the atmosphere, or simply remain in orbit as space junk." Thus, (e) is the right answer.

## Solution 13: E)

The first real attempt at making an RLV was made by NASA. Refer to the line: "The first real attempt at making an RLV was NASA's Space Shuttle program." Thus, (e) is the right answer.

## Solution 14: C)

The Space Shuttle program is not the cheapest attempt at using refurbished rocket parts. Falcon 9 was cheaper than the Space Shuttle. Refer to the line: "But unlike the Space Shuttle, the reused Falcon 9 was cheaper." Thus, (c) is the right answer.

The rest are incorrect as they all hold true with respect to the Space Shuttle program.
For (a), refer to the line: "And when the 30-year program ended in 2011, it may have seemed like the argument for RLVs ended with it."

For (b), refer to the line: "The first real attempt at making an RLV was NASA's Space Shuttle program."

For (d), refer to the line: "The Space Shuttle fleet was meant to lower the cost of space transportation by being partially reusable."

## Solution 15: C)

The suborbital rocket New Shepherd will be used for transporting passengers. Refer to the line: "The company is finishing testing New Shepherd, a small suborbital rocket, and plans to start using it for sending passengers into space." Thus, (c) is the right answer.
(a), (b), and (d) are incorrect as the passage does not associate New Shepherd with space exploration, launching a communication satellite or warfare.

## Solution 16: B)

The University of Queensland is developing an RLV that uses scramjet engines. Refer to the line: "In Australia, the University of Queensland is developing SPARTAN, a small RLV that uses cutting-edge scramjet engines." Thus, (b) is the right answer.

## Solution 17: C)

UNDETERRED has been used in the passage to convey that the advocates of RLVs were not disheartened at the end of the Space Shuttle program. DISCOURAGED is opposite in meaning to the word as used in the passage. Thus, (c) is the right answer.

ADAMANT - refusing to be persuaded or to change one's mind
INDIFFERENT - unconcerned
INSOLENT - rude or arrogant
AGGRESSIVE - likely to attack or confront

## Solution 18: E)

SCEPTICAL has been used in the passage to mean hesitant or unsure. DOUBTFUL is the closest in meaning to the word as used in the passage. Thus, (e) is the right answer.

WHIMSICAL - temperamental
SUBTLE - crafty or ingenious
CONCEITED - excessively proud of oneself
OPTIMISTIC - hopeful

## Solution 19: B)

QSTPR is the final order. Q begins the passage by introducing the main idea discussed - habitat destruction due to logging and industrial agriculture is the greatest threat to ape populations. S follows by contradicting this and telling us how scientists have discovered that these are not the only causes behind decline of apes. T follows by telling us how the decline of bonobos have
shown how disruptions on a minor scale can also have a huge impact on apes. P proceeds by telling us how the researchers studied the bonobos to ascertain the exact causes behind their demise. R concludes by telling us how their work could benefit conservation efforts targeting other endangered great apes. Thus, (b) is the right answer.

## Solution 20: D)

QSTPR is the final order. Q begins the passage by introducing the main idea discussed - habitat destruction due to logging and industrial agriculture is the greatest threat to ape populations. S follows by contradicting this and telling us how scientists have discovered that these are not the only causes behind decline of apes. T follows by telling us how the decline of bonobos have shown how disruptions on a minor scale can also have a huge impact on apes. P proceeds by telling us how the researchers studied the bonobos to ascertain the exact causes behind their demise. R concludes by telling us how their work could benefit conservation efforts targeting other endangered great apes. Thus, (d) is the right answer.

## Solution 21: A)

QSTPR is the final order. Q begins the passage by introducing the main idea discussed - habitat destruction due to logging and industrial agriculture is the greatest threat to ape populations. S follows by contradicting this and telling us how scientists have discovered that these are not the only causes behind decline of apes. T follows by telling us how the decline of bonobos have shown how disruptions on a minor scale can also have a huge impact on apes. P proceeds by telling us how the researchers studied the bonobos to ascertain the exact causes behind their demise. R concludes by telling us how their work could benefit conservation efforts targeting other endangered great apes. Thus, (a) is the right answer.

## Solution 22: B)

QSTPR is the final order. Q begins the passage by introducing the main idea discussed - habitat destruction due to logging and industrial agriculture is the greatest threat to ape populations. S follows by contradicting this and telling us how scientists have discovered that these are not the only causes behind decline of apes. T follows by telling us how the decline of bonobos have shown how disruptions on a minor scale can also have a huge impact on apes. P proceeds by telling us how the researchers studied the bonobos to ascertain the exact causes behind their demise. R concludes by telling us how their work could benefit conservation efforts targeting other endangered great apes. Thus, (b) is the right answer.

## Solution 23: E)

QSTPR is the final order. Q begins the passage by introducing the main idea discussed - habitat destruction due to logging and industrial agriculture is the greatest threat to ape populations. S follows by contradicting this and telling us how scientists have discovered that these are not the only causes behind decline of apes. T follows by telling us how the decline of bonobos have shown how disruptions on a minor scale can also have a huge impact on apes. P proceeds by
telling us how the researchers studied the bonobos to ascertain the exact causes behind their demise. R concludes by telling us how their work could benefit conservation efforts targeting other endangered great apes. Thus, (e) is the right answer.

## Solution 24: D)

In D, replace MUCH with MANY as the former is used to modify uncountable nouns while the latter is used to modify countable nouns. Here, CHANGES is countable so MANY will be used. Thus, (d) is the right answer.

## Solution 25: B)

In B, replace the base form verb HAPPEN with HAPPENED as the past perfect tense construction HAD + VERB will take the past participle form of the verb. Thus, (b) is the right answer.

## Solution 26: B)

In B, replace the second form verb TOOK with TAKEN as the passive voice clause BE + VERB will take the past participle form of the verb. Thus, (b) is the right answer.

## Solution 27: E)

The sentence is grammatically correct and free of error. Thus, (e) is the right answer.

## Solution 28: A)

In A, replace the singular verb HOPES with its plural form HOPE, as the plural subject ORGANISERS will take a plural verb after it. Thus, (a) is the right answer."

## Solution 29: E)

The sentence tells us how Benjamin's team obtained permission from the traditional custodians of Murujuga before carrying out their research. All 1, 2 and 3 can fit here to convey the requisite meaning. Thus, (e) is the right answer.

## Solution 30: A)

We need an adjective in (B) to modify the noun STONE ARTIFACTS. The sentence talks about how the researchers ventured into the sea to look for underwater landmarks that were likely to be present there. We need a verb to fit in 1 , which talks about how Hague made a speech in which he claimed that a Tory government would introduce tax cuts. PROMISING can fit in both 1 and in (B), which will make (a) the right answer.

EVADING (avoiding) will not fit in either sentence. ASSURING and ASSERTING will fit only in 1. POTENTIAL will fit in (B), but not in 1 .

## Solution 31: D)

The sentence in which (C) appears, shows contrast. The first part of the sentence tells us how the stone artifacts discovered underwater at Murujuga are the first ones to be found in Australia, and the second half contrasts it by telling us how archaeologists have explored drowned landscapes in other places. WHILE can fit here to bring out the contrast, which will make (d) the right answer.

SINCE and THEREFORE are used to show causation, UNLESS implies conditionality and MOREOVER is used to show additionality, none of which is the case here.

## Solution 32: A)

We need a gerund to fit in (D), as it talks about how monitoring the rise and fall of sea levels across geological ages and taking note of it was a strategy. We need a continuous form verb in 1, which talks about how people had been planning to destroy him. PLOTTING will fit in both 1 and in (D) to convey the requisite meanings. Thus, (a) is the right answer.

Parting - being separated from. This will fit in neither blank. C and D will fit only in (D), and E will fit only in 1.

## Solution 33: A)

The sentence tells us how many coastal locales are situated (located) on modern-day shores or farther (ahead in distance) upslope, which have been identified (recognised) in the process.
CITES means refers, which will not be apt in the context. SITES should be used instead, which will make ( $a$ ) the right answer.

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 PRACTICE MOCK
## Solution 34: C)

PLAIN means clear, as used in 1, which talks about something that the author wishes to make clear to the listener. PLAIN also means bland or lacking flavour, as used in 3, which talks about how the bland soup disappointed the diners.

PLAIN has been confused with PLANE in 2, which talks about how the author missed his airplane. Thus, (c) is the right answer.

Solution 35: E)

The sentence tells us how the indigenous people were not surprised at the discovery. The highlighted phrase is contextually and grammatically correct, which will make (e) the right answer.

1 is incorrect as the noun FIND should be used in place of the verb FOUND as it is being modified by the definite article THE. 2 is incorrect as it does not establish a link with the sentence. 3 is incorrect as we need the adjective SURPRISED instead of the noun SURPRISE.

## Solution 36: C)

We need an adjective to describe the noun PRESENCE in (H), as the sentence talks about how the find was a mark of the surviving presence of the indigenous people. We need a verb here in 1 , as it talks about how he tolerated a long and painful collapse before his death. ENDURING can fit in both sentences to convey the requisite meanings. Thus, (c) is the right answer.

A and D will only fit in 1 , while $B$ and $E$ will only fit in (H).

## Solution 37: E)

1 - we need an adjective to modify the noun ABSENCE. DELIBERATE (done on purpose) will fit here as the sentence tells us how the absence of the table from the document seemed to be on purpose.

2 - we need a base form verb to fit in the TO + VERB infinitive construction. DELIBERATE (think) will fit here as the sentence tells us how the speaker aimed to think over for months the decision to go on tour. Thus, E is the right answer.

PONDER and MULL means to think deeply about something, and will only fit in 2. INTENTIONAL will only fit in 1. PREMEDITATE (plan or think about) will fit in 2 only since it is a verb. The adjective form PREMEDITATED (carefully planned) would have fit in 1 as well.

## Solution 38: D)

1 - we need a singular verb to agree with the singular subject REPORT. PRESENTS (shows) will fit here as the sentence tells us how the 2016 report has brought forward some worrisome facts.

2 - we need a noun here to be modified by the adjective WEDDING. PRESENTS (gifts) will fit here as the sentence tells us how accusations were levied at a person for having stollen Isabella's wedding gifts. Thus, D is the right answer.

DISCLOSES, REVEALS and UNEARTHS will fit only in 1 , while GIFTS will fit only in 2.

## Solution 39: A)

1 - we need a singular verb to agree with the singular subject REPORT. MEASURES (calculates) will fit here as the sentence tells us how the report calculates quality of life.

2 - we need a noun here to be modified by the adjective DRACONIAN. MEASURES (procedures; courses of action) will fit here as the sentence tells us how drug use is dealth with harshly in Philippines. Thus, A is the right answer.

QUANTIFIES and ESTIMATES will fit only in 1 , whil;e STEPS and ACTIONS will fit only in 2.

## Solution 40: B)

1 - we need a present participle form verb to join the two clauses of the sentence. REFLECTING (thinking carefully over) will fit here as the sentence tells us how ASEAN has adopted a hardline stance against drugs concerning the position of its member states.

2 - we need a present participle form verb here to join the two clauses of the sentence.
REFLECTING (showing; suggesting) will fit here as the sentence tells us how the low birth rate in Europe shows deep pessimism about the future and high cost of housing. Thus, B is the right answer.

REGARDING, REVIEWING and CONSIDERING will fit only in 1 , while INDICATING will fit only in 2 .

## Solution 41: A)

1 - we need an adjective to modify the noun RESULTS. PROMISING (good; reassuring) will fit here as the sentence tells us how localised interventions are producing good results even in countries that continue to implement tough approaches.

2 - we need a continuous form verb here to agree with the subject I'M. PROMISING (giving one's word) will fit here as the sentence tells us how the speaker is not giving one's word that they would win it, but assures the listeners that they would try their best. Thus, A is the right answer.

ENCOURAGING, POSITIVE and FAVOURABLE will fit only in 1, while GUARANTEEING will fit only in 2.

## Solution 42: C)

The sentence talks about the negative effects of suspending Twitter on Nigeria's economy. (c) is the right answer as it can replace the highlighted phrase.

A is incorrect. The verb singular AFFECTS will be replaced with the plural noun EFFECTS to be modified by the adjective NEGATIVE. B, D and the highlighted phrase are incorrect as the modal verb COULD will be followed by the base form of the main verb.

## Solution 43: B)

The sentence talks about how hopes for a global human-rights awakening have made frank assessments of the persistence of slave labor and extreme poverty possible. (b) is the right answer as it can replace the highlighted phrase. (a) is incorrect. HAVE GIVEN AWAY means to
have disclosed, which does not fit contextually. (c) as well as the highlighted phrase are incorrect as the plural subject HOPES will agree with the plural verb HAVE as opposed to HAS. (d) is incorrect. The verb IMPEDE needs to be replaced with the noun IMPEDIMENT to be modified by the indefinite article AN.

## Solution 44: A)

THAT LED TO (that resulted in) will fit here as the sentence tells us how the lung infection she developed resulted in pneumonia. Thus, (a) is the right answer.

The highlighted phrase is incorrect as the preposition TO should be used in place of the adverb TOO. B will not render meaning in the context. LED ASTRAY means to stray from the right path. $D$ is incorrect as the second form verb LED should be used.

## Solution 45: C)

THERE IS SPECULATION (there are beliefs) will fit here as the sentence tells us how it is being believed that a number of bombings could take place across the country. Thus, (c) is the right answer.

The highlighted phrase is incorrect because the singular verb IS should be used in place of the plural ARE. A is incorrect because the past participle form verb SPECULATED should be used in the passive voice clause. $B$ is incorrect because the helping verb ARE/ WERE is needed. $D$ will not establish continuity with the rest of the sentence.

## Solution 46: B)

THAT TEND TO (that are likely to) will fit here as the sentence tells us how the conditions that might produce terrorists, suicide bombers, etc. should be fixed. Thus, (b) is the right answer.

The highlighted phrase is incorrect because INTEND means to aim or want. A is incorrect because the preposition TO is needed after LIKELY. C is incorrect because the helping verb BE is followed by the continuous form verb, while PRODUCE is the base form. D is incorrect because we need the plural verb ARE to agree with the plural subject CONDITIONS.

## Solution 47: E)

TO DECLINE (to reduce) will fit here as the sentence tells us how the number of frilled lizards have fallen. Thus, (e) is the right answer.

A will not establish continuity in the sentence. B is incorrect as it uses the verb DECLINE to mean refuse. C is incorrect as we need the adverb SHARPLY to modify the verb FALL. D is incorrect as we need a base form verb REDUCE to fit in the TO + VERB infinitive construction.

## Solution 48: D)

CAUSED SOME CONCERN (caused worries) will fit here as the sentence tells us how the proposed lake has caused some people to become concerned. Thus, (d) is the right answer.

None of the other phrases will lend meaning to the context.

## Solution 49: A)

(a) is the right answer. The correct pairs are AD, BF and CE.

AD - A talks about what overfishing, pollution and environmental damage have led to. D adds that they have led to significant losses in both quantities of fish and the number of fish species available.

BF - B begins the sentence by talking about how employers can assist freelancers. F says that they can do so by designing interesting jobs with on-the-job learning and growth opportunities.

CE - C begins the sentence by talking about what might happen if we don't start to address the mental health emergency of young people's anxiety and depression. E says that if we do not start addressing these issues, it may become a trans-generational disaster.

## Solution 50: C)

(c) is the right answer. The correct pairs are $\mathrm{AE}, \mathrm{BD}$ and CF .

AE - A says that the destruction of tropical forest is a major contributor but does not clarify what it contributes to. E adds that it contributes to biodiversity loss and the climate crisis.

BD - B talks about how paediatricians are seeing growing numbers of young people. D says that they are seeing them coming to the emergency room because of a lack of other treatment options.

CF - C begins the sentence by talking about what recent headlines have to say about mask wearing. F adds that according to recent headlines, mask wearing has become a signal of political allegiance.

## IBPS SO Previous Year Questions - Reasoning

Directions(1-5): Answer the questions based on the information given below.
Eight persons P, Q, R, S, T, U, V and W are sitting in a row facing north direction. Each of them has different number of books from 1 to 8 . Two persons sit to the right of T. P sits third to the left of Q , who has 4 books. Q does not sit at any extreme end. One person sits between P and R . $S$ sits immediate left of W . U , who has 6 books, sits to the left of V , who does not sit adjacent to T .

P has twice number of books than that of $R$. W has even number of books. $V$ has more books than T , who has more books than S .

Question 1: Who among the following has highest number of books?
A) $R$
B) V
C) W
D) Q
E) $T$

Answer: C)

## Solution:

W has highest number of books i.e. 8 .
Hence, option c.
Question 2: How many persons sit to the left of Q?
A) Six
B) One
C) Five
D) Three
E) Four

## Answer: E)

## Solution:

Four persons sit to the left of Q .
Hence, option e.
Question 3: What is the sum of number of books of $R$ and $P$ ?
A) 4
B) 3
C) 5
D) 2
E) 6

## Answer: B)

## Solution:

Sum of number of books of R and $\mathrm{P}=1+2=3$
Hence, option b.
Question 4: Who sits at extreme right end?
A) W
B) V
C) Q
D) T
E) U

## Answer: A)

## Solution:

W sits at extreme right end.
Hence, option a.
Question 5: V has $\qquad$ books.
A) 3
B) 1
C) 5
D) 7
E) 8

Answer: D)

## Solution:

V has 7 books.

Hence, option d.

## Common Solution:

Starting Point: Here, we can start with T, P and Q in order to form three cases.

## Clues:

1.) Two persons sit to the right of $T$.
2.) $P$ sits third to the left of $Q$, who has 4 books.
3.) $Q$ does not sit at any extreme end.

## Inference:

Case 1: No one sits to the left of $P$ :

| P |  |  | $\mathrm{Q}(4)$ |  | T |  |  |
| :--- | :--- | :--- | :--- | :--- | :--- | :--- | :--- |

Case 2: One person sits to the left of P :

|  | P |  |  | $\mathrm{Q}(4)$ | T |  |  |
| :--- | :--- | :--- | :--- | :--- | :--- | :--- | :--- |

Case 3: Three persons sit to the left of $P$ :

|  |  |  | P |  | T | $\mathrm{Q}(4)$ |  |
| :--- | :--- | :--- | :--- | :--- | :--- | :--- | :--- |

## Clues:

4.) One person sits between $P$ and $R$.
5.) $S$ sits immediate left of $W$.

## Inference:

From (5), case 3 must be rejected.
Case 1: No one sits to the left of $P$ :

| P |  | R | $\mathrm{Q}(4)$ |  | T | S | W |
| :--- | :--- | :--- | :--- | :--- | :--- | :--- | :--- |

Case 2: One person sits to the left of P :

|  | P |  | R | $\mathrm{Q}(4)$ | T | S | W |
| :--- | :--- | :--- | :--- | :--- | :--- | :--- | :--- |

## Clues:

6.) $U$, who has 6 books, sits to the left of $V$, who does not sit adjacent to $T$.
7.) $P$ has twice number of books than that of $R$.
8.) W has even number of books.
9.) V has more books than T , who has more books than S .

## Inference:

From (6), case 1 must be rejected. From (7), $P$ and $R$ must have 2 and 1 books respectively. From (8), W must have 8 books. From (9), V, T and $S$ must have 7, 5 and 3 books respectively.

The final seating arrangement is given below:

| $U(6)$ | $\mathrm{P}(2)$ | $\mathrm{V}(7)$ | $\mathrm{R}(1)$ | $\mathrm{Q}(4)$ | $\mathrm{T}(5)$ | $\mathrm{S}(3)$ | $\mathrm{W}(8)$ |
| :--- | :--- | :--- | :--- | :--- | :--- | :--- | :--- |

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Question 6: In the question below some statements are given followed by three conclusions I, II, and III. You have to take the given statements to be true even if they seem to be at variance with commonly known facts. Read all the conclusions and then decide which of the given conclusion definitely follows from the given statements, disregarding commonly known facts.

## Statements:

Some Guava are not Apple
No Apple are Grapes
Some Grapes are Pear

## Conclusions:

I. All Pear can be Apple
II. Some Guava are Pear
III. Some Grapes are Guava
A) Only Conclusion I follow
B) Only Conclusion II follow
C) Only Conclusion I and III follows
D) Only Conclusion III follows
E) None of the Conclusions follows

## Answer: E)

## Solution:

We draw the following figure:


From the figure, we get, none of the conclusions follows.
Hence, option e.
Question 7: In the question below some statements are given followed by three conclusions I, II, and III. You have to take the given statements to be true even if they seem to be at variance with commonly known facts. Read all the conclusions and then decide which of the given conclusion definitely follows from the given statements, disregarding commonly known facts.

## Statements:

No Harry are Snape
No Snape are Ginny
Some Ginny are Potter

## Conclusions:

I. At least Some Potter are Snape
II. At least Some Ginny are Harry
III. Some Potter can be Harry
A) Only Conclusion I follow
B) Only Conclusion II follow
C) Only Conclusion I and III follows
D) Only Conclusion III follows
E) None of the Conclusions follows

Answer: D)

## Solution:

We draw the following figure:



From the figure, we get only conclusion III follows.
Hence, option d.
Question 8: In the question below some statements are given followed by three conclusions I, II, and III. You have to take the given statements to be true even if they seem to be at variance with commonly known facts. Read all the conclusions and then decide which of the given conclusion definitely follows from the given statements, disregarding commonly known facts.

## Statements:

All Tom are Jerry
A few Jerry are Mouse
Only a few Mouse are Cat

## Conclusions:

I. At least Some Cat are Tom is a possibility
II. At least Some Mouse are Tom
III. All Cat are Jerry
A) Only Conclusion I follows
B) Only Conclusion II follows
C) Only Conclusion I and II follow
D) None of the Conclusions follows
E) Only Conclusion III follows

Answer: A)

## Solution:

We draw the following figure:


From the figure, we get, only conclusion I follows.
Hence, option a.
Question 9: In the question below some statements are given followed by three conclusions I, II, and III. You have to take the given statements to be true even if they seem to be at variance with
commonly known facts. Read all the conclusions and then decide which of the given conclusion definitely follows from the given statements, disregarding commonly known facts.

## Statements:

Only a few Risks are Rewards
Only Gain are Win

Only a few Rewards are Gain

## Conclusions:

I. All Rewards are Win is a possibility
II. All Win are Risks is a possibility
III. All Rewards are Risks
A) Only Conclusion I follows
B) Only Conclusion II follows
C) Only Conclusion I and II follow
D) None of the Conclusions follows
E) Only Conclusion III follows

Answer: D)

## Solution:

We draw the following figure:


As, only gain is win means that nothing can be part of win except gain. So, from the figure we get none of the conclusions follows.

Hence, option d.

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Directions(10-12): Answer the questions based on the information given below.
Nine people $P, Q, R, S, T, U, V, W$ and $X$ are sitting at some distance from each other. $X$ is sitting $6 m$ north of $P$. P is sitting 3 m west to Q , who is sitting 2 m north to R , who is sitting 3 m east to S . $T$ is sitting $9 m$ west to $U$, who is sitting 5 m north to V , who is sitting 4 m west to W . T is sitting 5 m south to $S$.

Question 10: What is the shortest distance between $V$ and $P$ ?
A) 10 m
B) 12 m
C) $9 m$
D) 15 m
E) None of the above

Answer: D)

## Solution:

The shortest distance between P and V can be calculated by applying Pythagoras theorem,
$P V^{2}=144+81$
$P V=15 m$


Hence, option d.
Question 11: What is the direction of R with respect to W ?
A) North
B) North East
C) North West
D) South East
E) None of the above

Answer: C)

## Solution:

$R$ is sitting in the north-west of W.
Hence, option c.
Question 12: Find the odd one out.
A) R, U
B) $\mathrm{S}, \mathrm{W}$
C) T, U
D) T, V
E) $X$, V

## Answer: C)

## Solution:

In all the given options, first person is in northwest of $2^{\text {nd }}$ person except in option (c).
Hence, option c.
Common Solution:
According to the information given following figure can be formed:


Directions(13-17): Answer the questions based on the information given below.
Ten persons namely, P, Q, R, S, T, U, V, W, X and Y live in a building of five floors in Silicon Valley Society in Bangalore. The ground floor is considered as $1^{\text {st }}$ floor, the floor above it as $2^{\text {nd }}$ floor and so on. Each floor consists of two types of flats i.e. Flat-A and Flat-B. On every floor, Flat A is in the west of Flat-B. The dimensions of each of the flats are same. Only one person lives in each flat.

X lives on $2^{\text {nd }}$ floor. U lives two floors above $V$ such that they both live in either Flat-A or Flat-B of their floors. T lives in the west of $R$ on an odd numbered floor. $Y$, who lives in the same type of flat as that of $T$, lives either three floors below or above $P$ in the same type of flat as that of $P$. Q and $R$ live in the same type of flats such that $Q$ lives two floors above R. W lives neither on the topmost floor nor to the east of $P$.

Question 13: Who lives in Flat-A of $3^{\text {rd }}$ floor?
A) $S$
B) V
C) T
D) $R$
E) W

## Answer: C)

## Solution:

T lives in Flat-A of $3^{\text {rd }}$ floor.

Hence, option c.
Question 14: Who doesn't live in flat-B of their floors?
I. W
II. S
III. U
A) Only I
B) Only II
C) Only I and III
D) Only III
E) None of the above

## Answer: B)

## Solution:

Only S doesn't live in Flat-B of his/her floor.
Hence, option b.
Question 15: Find the odd one out.
A) S
B) $P$
C) Q
D) $R$
E) T

Answer: B)

## Solution:

Only P doesn't live on an odd numbered floor.
Hence, option b.
Question 16: Who lives two floors below $R$ in the same type of flat as that of $R$ ?
A) $Y$
B) $Q$
C) S
D) P
E) W

## Answer: E)

## Solution:

W lives two floors below $R$ in Flat- $B$.
Hence, option e.
Question 17: Who among the following lives on an even numbered floor?
A) S
B) $Y$
C) W
D) V
E) Q

Answer: D)
Solution:
$\checkmark$ lives on $2^{\text {nd }}$ floor.
Hence, option d.
Common Solution:

Starting point: Since a lot of information about T is given, we would consider placing T, R and Q along with Y and P .

Clues: T lives in the west of $R$ on an odd numbered floor. $Y$, who lives in the same type of flat as that of $T$, lives either three floors below or above $P$ in the same type of flat as that of $P$.

Inference: It implies that T, Y, P live in flat-A of their floors while Q, R live in flat-B of their floors.
Clues: U lives two floors above V such that they both live in either Flat-A or Flat-B of their floors.
Inference: The next point is that $Y$ and $P$ have two floors in between them and $T$ lives on an odd numbered floor. So, if we start placing $T, Y, P$, we can never place $U$ and $V$ who are two floors apart from each other in flat-A of their floors. So, it clearly means that $\mathrm{U}, \mathrm{V}$ live in Flat-B. Thus, we finally get two cases:

Case 1: $\mathrm{Y}, \mathrm{P}$ live on 5, 2 floors in any order. And X lives on $2^{\text {nd }}$ floor.

| Floor | Flat-A | Flat-B |
| :---: | :---: | :---: |
| 5 | Y/P |  |
| 4 |  |  |
| 3 |  |  |
| 2 | P/Y | X |
| 1 |  |  |

Case 2: $\mathrm{Y}, \mathrm{P}$ live on 4, 1 floors in any order.

| Floor | Flat-A | Flat-B |
| :---: | :---: | :---: |
| 5 |  | Q |
| 4 | $\mathrm{Y} / \mathrm{P}$ |  |
| 3 | T | R |
| 2 | $\mathrm{P} / \mathrm{Y}$ |  |
| 1 |  |  |

Now, if we see the first case of flat-B, we will never be able to place $U$ and $Y$ by placing $Q$ and $R$ on odd numbered floors. So, the first case gets rejected. We are left with Case 2 only.

Case 2: Thus, X lives in flat-A on $2^{\text {nd }}$ floor.

| Floor | Flat-A | Flat-B |
| :---: | :---: | :---: |
| 5 |  | Q |
| 4 | $\mathrm{Y} / \mathrm{P}$ | U |
| 3 | T | R |
| 2 | X | V |
| 1 | $\mathrm{P} / \mathrm{Y}$ |  |

Clues: W lives neither on the topmost floor nor to the east of P.
Inference: So, S lives in flat-A on $5^{\text {th }}$ floor and we get the floors of P and Y .
The final arrangement is shown below:

| Floor | Flat-A | Flat-B |
| :---: | :---: | :---: |
| 5 | S | Q |
| 4 | P | U |
| 3 | T | R |
| 2 | X | V |
| 1 | Y | W |

Directions(18-20): Answer the questions based on the information given below.
There are ten members related to each other in three generations. No single person is a parent.
$L$ is the wife of $G$ and $H$ is the child of $G$. $C$ is the grandfather of $T$ and married to $D$. $F$ is the brother-in-law of H. Y, who is the mother of T , is the daughter-in-law of $\mathrm{G} . \mathrm{Z}$ is the nephew of H . H and I are siblings and both are married. C has only one daughter. I is not married to Y .

Question 18: How is L related to Z?
A) Grandmother
B) Mother
C) Sister
D) Aunt
E) Can't be determined

## Answer: A)

## Solution:

$L$ is the grandmother of $Z$.
Hence, option a.
Question 19: If $T$ is the son of $Y$ then how is I related to $T$ ?
A) Grandmother
B) Sister
C) Aunt
D) Sister-in-law
E) Cousin

## Answer: C)

## Solution:

$I$ is the aunt of $T$.

Hence, option c.
Question 20: How is the brother-in-law of F related to D ?
A) Son
B) Brother
C) Nephew
D) Son-in-law
E) Can't be determined

## Answer: D)

## Solution:

$H$ is the brother-in-law of $F$ and son-in-law of $D$.

Hence, option d.
Common Solution:
$H$ is the child of $G$. $L$ is the wife of $G$. Now, $H$ and $I$ are siblings. I is not married to $Y$. Also, $Z$ is the nephew of H and F is the brother-in-law of H so, F must be husband of I and Z is the son of I . Also, $C$ has only one daughter which means $H$ must be son-in-law of $C$ and son of $G$ and $L$ as there is no single parent.

Family tree:


Question 21: In the question, assuming the given statements to be true, find which of the conclusion (s) among given three conclusions is /are definitely true and then give your answer accordingly.
Statements: J>E $\geq \mathrm{M}<\mathrm{O} ; \mathrm{M}>\mathrm{H} ; \mathrm{V} \leq \mathrm{H}$

## Conclusions:

I. $\mathrm{J}>\mathrm{V}$
II. $\mathrm{H}<\mathrm{O}$
III. $\mathrm{J} \geq 0$
A) Only conclusions I and III are true.
B) Only conclusions I and II are true.
C) Only conclusion I is true.
D) Only conclusion II is true.
E) All conclusions I, II and III are false.

## Answer: B)

## Solution:

Given statements: J>E $\geq \mathrm{M}<\mathrm{O} ; \mathrm{M}>\mathrm{H} ; \mathrm{V} \leq \mathrm{H}$
On combining, we get,
$J>E \geq M>H \geq V ; O>M>H \geq V$
Conclusions:
I. J $>$ V: True (As J $>E \geq \mathrm{M}>\mathrm{H} \geq \mathrm{V}$, so, J>V)
II. $\mathrm{H}<\mathrm{O}$ : True (As $\mathrm{O}>\mathrm{M}>\mathrm{H}$, so, $\mathrm{O}>\mathrm{H}$ )
III. J $\geq$ O: False (As J>E $\geq \mathrm{M}<\mathrm{O}$, so, the relation between J and O cannot be determined)

So, only conclusion I and II follow.
Hence, option b.
Question 22: In the question, assuming the given statements to be true, find which of the conclusion (s) among given three conclusions is /are definitely true and then give your answer accordingly.
Statements: $\mathrm{R}=\mathrm{G}=\mathrm{Q}>\mathrm{P} ; \mathrm{W}=\mathrm{C}<\mathrm{P} ; \mathrm{W}>\mathrm{N}$

## Conclusions:

I. $Q>W$
II. $\mathrm{N}<\mathrm{G}$
III. $\mathrm{R}=\mathrm{Q}$
A) Only conclusion I is true.
B) Only conclusions I and II are true.
C) Only conclusion III is true.
D) Only conclusions II and III are true.
E) All conclusions I, II and III are true.

## Answer: E)

## Solution:

Given statements: $\mathrm{R}=\mathrm{G}=\mathrm{Q}>\mathrm{P} ; \mathrm{W}=\mathrm{C}<\mathrm{P} ; \mathrm{W}>\mathrm{N}$
On combining, we get
$\mathrm{R}=\mathrm{G}=\mathrm{Q}>\mathrm{P}>\mathrm{C}=\mathrm{W}>\mathrm{N}$
Conclusions:
I. $\mathrm{Q}>\mathrm{W}$ : True (As $\mathrm{Q}>\mathrm{P}>\mathrm{C}=\mathrm{W}$, so, $\mathrm{Q}>\mathrm{W}$ )
II. $\mathrm{N}<\mathrm{G}$ : True (As G=Q > P > C = W >N, so, G>N)
III. $\mathrm{R}=\mathrm{Q}$ : True (As $\mathrm{R}=\mathrm{G}=\mathrm{Q}$, so, $\mathrm{R}=\mathrm{Q}$ )

So, all conclusions I, II and III follow.

Hence, option e.

Question 23: In the question, assuming the given statements to be true, find which of the conclusion (s) among given three conclusions is /are definitely true and then give your answer accordingly.
Statements: $T>R \geq O ; P<A ; O>V \geq A$

## Conclusions:

I. $\mathrm{V}<\mathrm{T}$
II. $A \geq R$
III. $\mathrm{A} \leq \mathrm{O}$
A) Only conclusions I and II are true.
B) Only conclusions I and III are true.
C) Only conclusion I is true.
D) Only conclusion II is true.
E) All conclusions I, II and III are false.

## Answer: C)

## Solution:

Given statements: $\mathrm{T}>\mathrm{R} \geq \mathrm{O} ; \mathrm{P}<\mathrm{A} ; \mathrm{O}>\mathrm{V} \geq \mathrm{A}$

On combining, we get,
$T>R \geq O>V \geq A>P$

Conclusions:
I. $\mathrm{V}<\mathrm{T}$ : True (As $\mathrm{T}>\mathrm{R} \geq \mathrm{O}>\mathrm{V}$, so, $\mathrm{T}>\mathrm{V}$ )
II. $A \geq R$ : False (As $R \geq O>V \geq A$, so, $R>A$ )
III. $A \leq O$ : False (As $O>V \geq A$, so, $O>A$ )

So, only conclusion I follows.
Hence, option c.
Question 24: Which of the following symbols should replace the question marks (?) in the given expression in order to make the expressions ' $5 \geq 6$ ' definitely true?
$2 \geq A ; X \leq 6$ (?)A; $5 \geq 2$
A) $>$
B) $\geq$
C) $\leq$
D) $<$
E) None of the above

## Answer: C)

## Solution:

$2 \geq A ; X \leq 6$ (?)A; $5 \geq 2$
On combining, $\mathrm{X} \leq 6$ (?)A $\leq 2 \leq 5$
Replacing the signs of option (a) in the given inequality, $X \leq 6>A \leq 2 \leq 5$, it doesn't satisfy the given condition.

Replacing the signs of option (b) in the given inequality, $X \leq 6 \geq A \leq 2 \leq 5$, it doesn't satisfy the given condition.

Replacing the signs of option (c) in the given inequality, $X \leq 6 \leq A \leq 2 \leq 5$, it satisfies the given condition.

Replacing the signs of option (d) in the given inequality, $X \leq 6<A \leq 2 \leq 5$, it doesn't satisfy the given condition.

Hence, option c.
Directions(25-29): Answer the questions based on the information given below.
Eight persons (Kia, Kaju, Puja, Amit, Ashu, Anil, Anu, and Era) work in Nestle company on eight different designations (GM, AGM, PM, APM, SM, BM, Salesman, and Intern) but not necessarily in the same order. All the designations are in descending order of precedence such that GM is the
senior most designation and Intern is the junior most designation. Each person likes different OTT platforms (Mubi, Hotstar, Netflix, Arre, Hayu, Hooq, Viki, and Ullu).

At most two persons are senior to Era. Kia is one designation junior to Anu. Kaju, who likes Hayu, is senior to Puja but junior to Amit. As many persons are junior to Kia as senior to the person, who likes Netflix. Neither APM nor SM likes Hooq. Ashu is two designations senior to Anil, who likes Arre. The person, who likes Hotstar, is one designation junior to the person, who likes Viki. Three persons are designated between Era and Anu, who likes Mubi. The person, who likes Hooq, is three designations junior to the person, who likes Netflix.

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Question 25: Which of the following combinations is/are definitely correct?
A) GM - Era-Viki
B) BM - Kia - Hooq
C) Intern- Puja- Hotstar
D) AGM - Ashu - Ullu
E) Both ' $a$ ' and ' $b$ '

## Answer: E)

## Solution:

Both 'a' and 'b' are correct combinations.
Hence, option e.
Question 26: Which of the following persons like Netflix?
A) Ashu
B) Puja
C) Era
D) Amit
E) None of the above

Answer: D)

## Solution:

Amit likes Netflix.

Hence, option d.

Question 27: $\qquad$ persons are designated between Anu and the persons, who likes Viki.
A) Two
B) One
C) None
D) Four
E) Three

## Answer: E)

## Solution:

Era likes Viki.

Three persons are designated between Anu and Era.
Hence, option e.

Question 28: What is the designation of the person, who likes Ullu?
A) Salesman
B) Intern
C) BM
D) APM
E) None of the above

Answer: B)

## Solution:

Puja likes Ullu.
Puja is an Intern.
Hence, option b.

Question 29: $\qquad$ who is an AGM, likes $\qquad$ .
A) Ashu, Viki
B) Ashu, Netflix
C) Puja, Ullu
D) Ashu, Hotstar
E) None of the above

## Answer: D)

## Solution:

Ashu, who is an AGM, likes Hotstar.
Hence, option d.
Common Solution:
Starting Point: Start with placing Era, Anu, and Kia to form least number of cases initially.

## Clues:

1. At most two persons are senior to Era.
2. Three persons are designated between Era and Anu, who likes Mubi.
3. Kia is one designation junior to Anu.
4. As many persons are junior to Kia as senior to the person, who likes Netflix.

## Inferences:

From clue 1, we get Era is PM or AGM or GM.
From clue 2 and clue 3, we get Anu is Salesman or BM or SM. Kia is Intern or Salesman or BM.
From clue 4, we get the person, who is GM or AGM or PM likes Netflix.
Case I: When Era is PM.

| Designations | Persons | OTT <br> Platforms |
| :---: | :---: | :---: |


| GM |  | Netflix |
| :---: | :---: | :---: |
| AGM |  |  |
| PM | Era |  |
| AM |  |  |
| SM |  |  |
| BM | Anu | Mubi |
| Salesman | Kia |  |
| Intern |  |  |

Case II: When Era is AGM.

| Designations | Persons | OTT <br> Platforms |
| :---: | :---: | :---: |
| GM |  |  |
| AGM | Era | Netflix |
| PM |  |  |
| AM |  |  |
| SM |  | Mubi |
| BM | Anu |  |
| Salesman | Kia |  |
| Intern |  |  |

Case III: When Era is GM.

| Designations | Persons | OTT <br> Platforms |
| :---: | :---: | :---: |
| GM | Era |  |
| AGM |  |  |
| PM |  | Netflix |
| AM |  |  |
| SM | Anu | Mubi |
| BM | Kia |  |
| Salesman |  |  |
| Intern |  |  |

## Clues:

1. The person, who likes Hooq, is three designations junior to the person, who likes Netflix.
2. Neither APM nor SM likes Hooq.
3. Ashu is two designations senior to Anil, who likes Arre.
4. The person, who likes Hotstar, is one designation junior to the person, who likes Viki.

## Inferences:

From clue 1 and clue 2, we reject Case I and Case II as we can't place the person, who likes Hooq. Kia likes Hooq.

From clue 3, we get Ashu is AGM. Anil is AM.
From clue 4, we get either GM or Salesman likes Viki. Either AGM or Intern likes Hotstar.
Case III(a): When GM likes Viki.

| Designations | Persons | OTT <br> Platforms |
| :---: | :---: | :---: |
| GM | Era | Viki |
| AGM | Ashu | Hotstar |
| PM |  | Netflix |
| AM | Anil | Arre |
| SM | Anu | Mubi |
| BM | Kia | Hooq |
| Salesman |  |  |
| Intern |  |  |

Case III(b): When Salesman likes Viki.

| Designations | Persons | OTT <br> Platforms |
| :---: | :---: | :---: |
| GM | Era |  |
| AGM | Ashu |  |
| PM | Anil | Netflix |
| AM | Anu | Arre |
| SM | Kia | Hooq |
| BM |  | Viki |
| Salesman | Hotstar |  |
| Intern |  |  |

## Clues:

1. Kaju, who likes Hayu, is senior to Puja but junior to Amit.

Inferences:

From clue 1, we reject Case III(b) as we can't place Kaju. Amit likes Netflix. Kaju is Salesman. Puja is Intern and likes Ullu.

The final arrangement is as follows:

| Designations | Persons | OTT <br> Platforms |
| :---: | :---: | :---: |
| GM | Era | Viki |
| AGM | Ashu | Hotstar |
| PM | Amit | Netflix |
| AM | Anil | Arre |
| SM | Anu | Mubi |
| BM | Kia | Hooq |
| Salesman | Kaju | Hayu |
| Intern | Puja | Ullu |

## IBPS SO 2022-23

 Take a FREE Mock Test Get Your All India RankDirections(30-34): Answer the questions based on the information given below.
In a certain code of language,
I. 'In all the services and other combat' is coded as 'ty hr gh fx bq po ha'
II. 'all combat well fought' is coded as 'fx hp zx bq'
III. 'well deserved honor' is coded as 'zx oi di'
IV. 'In all case' is coded as 'ty lk fx'
V. the services and care deserved' is coded as 'po gz hr gh oi'

Question 30: What is the code of 'deserved well'?
A) fx bq
B) po oi
C) oi $z x$
D) ha hr
E) None of the above

## Answer: C)

## Solution:

The code of 'deserved well' is 'oi $z x^{\prime}$.

Hence, option c.
Question 31: What will be the code of 'all in one'?
A) fx ty ha
B) ty fx gh
C) oi gz fx
D) zx po hr
E) fx ty ju

## Answer: E)

## Solution:

The code of 'all in one' is 'fx ty ju'.
Hence, option e.

Question 32: 'ha hp' is the possible code for which of the following words?
A) other fought
B) well fought
C) services fought
D) honor other
E) None of the above

Answer: A)

## Solution:

The codes 'ha hp' are coded for 'other fought'.

Hence, option a.
Question 33: Which of the following statement is/are required to get the code of 'the services'?
I. 'the bruisers and bladers' is coded as 'po hm bv hr'
II. 'the rulers and services' is coded as 'jk po hr gh'
III. 'all horses and services' is coded as 'fx po gh yt'
A) Only I
B) Only I and II together
C) I, II and III together
D) Only I and III together
E) Only III

## Answer: D)

## Solution:

We know that the code of 'the services and' is either 'po or hr or gh'.
From statement I, 'the bruisers and bladers' is coded as 'po hm bv hr'
So, the code of 'services' must be 'gh'

From statement III, ‘all horses and services' is coded as 'fx po gh yt'
So, the code of 'the' must be 'hr'
So, the code of 'the services' is 'gh hr'.
Hence, option d.
Question 34: If the code of 'the well services received' is 'po zx az hr' and the code of 'the man combat case' is 'po lk bq we', then what will be the code for 'man and received?
A) az we po
B) gh az we
C) zx po hr
D) az we bq
E) hr bq po

## Answer: B)

## Solution:

Given that "the well services received' is 'po zx az hr', and 'the man combat case' is 'po lk bq we' so, the code of 'the' and 'services' is 'po and hr' which means the code of 'and' is 'gh' so, the code of 'man and received' is 'gh az we'.

Hence, option b.

## Common Solution:

From statements II and III, we get the code of 'well' i.e., 'zx'.
From statements I, II and IV, we get the code of 'all' and 'in' i.e., 'fx' and ty' respectively which means the code of 'case' must be ' $k$ ' also, the code of 'combat' must be 'bq' which gives us the code of 'fought' i.e., 'hp'.

From statements III and V , we get the code of 'deserved' i.e., 'oi' so, the code of 'honor' must be 'di'.

Also, the code of 'care' is 'gz' and the code of 'other' must be 'ha'
So, from statements I and V, the code of 'the services and' is po, hr, gh (there codes are not fixed).

Following table shows the words and their codes:

| Words well all | in case | combat | fought | deserved | honor | care | other the/services/and |  |  |  |  |
| :--- | :--- | :--- | :--- | :--- | :--- | :---: | :---: | :---: | :---: | :---: | :---: |
| Codes | zx | fx | ty | Ik | bq | hp | oi | di | gz | ha | $\mathrm{po}, \mathrm{hr}, \mathrm{gh}$ |

Directions(35-39): Answer the questions based on the information given below.
Ten persons ( $\mathrm{A}, \mathrm{E}, \mathrm{I}, \mathrm{O}, \mathrm{U}, \mathrm{V}, \mathrm{W}, \mathrm{X}, \mathrm{Y}$, and Z ) sit around a circular table facing towards the center but not necessarily in the same order. The persons, whose initial starts with a vowel, like different colours (Red, Pink, Blue, Green, and Yellow) and the remaining persons like different cars (Ferrari, BMW, Audi, Bentley, and Mercedes).
$V$ doesn't like BMW. The person, who likes red colour, sits $3^{\text {rd }}$ to the right of Y. O, who doesn't like red or pink colour, sits $3^{\text {rd }}$ to the right of E . U sits $2^{\text {nd }}$ to the right of I . Two persons sit between X and $U$ (from either side of the table). The person, who likes blue colour, sits immediate right of $X$. Two persons sit between the person, who likes blue colour and A, who likes yellow colour (From either side of the table). A doesn't sit adjacent to U. Y, who likes Audi, sits adjacent to A. The
person, who likes Mercedes, sits $3^{\text {rd }}$ to the right of the person, who likes pink colour. Neither $Z$ nor V likes Mercedes. Z, who doesn't like BMW or Bentley, sits adjacent to W.

Question 35: The person, who likes Ferrari, sits $\qquad$ to the right of the person, who likes Bentley.
A) $2^{\text {nd }}$
B) Immediate
C) $3^{\text {rd }}$
D) $4^{\text {th }}$
E) None of the above

## Answer: C)

## Solution:

Z likes Ferrari.

V likes Bentley.
$Z$ sits $3^{\text {rd }}$ to the right of $V$.

Hence, option c.

Question 36: U, who likes $\qquad$ colour, sits $\qquad$ to the left of O , who likes $\qquad$ colour.
A) Pink, $2^{\text {nd }}$, Green
B) Blue, $2^{\text {nd }}$, Green
C) Red, $3^{\text {rd }}$, Green
D) Green, $4^{\text {th }}$, Blue
E) None of the above

## Answer: A)

## Solution:

U likes pink colour. O likes green colour.
$U$ sits $2^{\text {nd }}$ to the left of $O$.

Hence, option a.

Question 37: How many persons sit between the person, who likes BMW and the person, who likes blue colour, when counted from the left of the person, who likes blue colour?
A) One
B) Two
C) None
D) Three
E) None of the above

Answer: C)

## Solution:

X likes BMW. I likes blue colour.
No persons sit between $X$ and I , when counted from the left of I .
Hence, option c.

# IBPS SO 2022-23 

Question 38: What is the position of the person, who likes Mercedes with respect to $Y$ ?
A) $2^{\text {nd }}$ to the left
B) $5^{\text {th }}$ to the right
C) $6^{\text {th }}$ to the left
D) $3^{\text {rd }}$ to the left
E) $6^{\text {th }}$ to the right

Answer: D)

## Solution:

W likes Mercedes.
$W$ sits $3^{\text {rd }}$ to the left of $Y$.

Hence, option d.
Question 39: I and W like $\qquad$ colour and $\qquad$ car respectively.
A) Blue, Bentley
B) Red, Mercedes
C) Green, BMW
D) Pink, Mercedes
E) None of the above

## Answer: E)

## Solution:

I likes blue colour and W likes Mercedes.
Hence, option e.

Common Solution:
Starting Point: Start with placing U, I, and X to from two cases initially.

## Clues:

1. $U$ sits $2^{\text {nd }}$ to the right of $I$.
2. Two persons sit between $X$ and $U$ (from either side of the table).
3. The person, who likes blue colour, sits immediate right of $X$.

## Inferences:

From clue 1 and clue 2 , we get $X$ sits either $3^{\text {rd }}$ to the left or $3^{\text {rd }}$ to the right of $U$.
From clue 3, we get either I or the person, who sits $4^{\text {th }}$ to the left of I likes blue colour.
Case I: When $X$ sits $3^{\text {rd }}$ to the left of $U$.


Case II: When $X$ sits $3^{\text {rd }}$ to the right of $U$.


Clues:

1. Two persons sit between the person, who likes blue colour and $A$, who likes yellow colour (From either side of the table).
2. A doesn't sit adjacent to $U$.
3. Y, who likes Audi, sits adjacent to A.

## Inferences:

From clue 1 and clue 2 , we get $A$ sits either $2^{\text {nd }}$ to the left of $X$ or immediate left of $I$.
From clue 3, we get $Y$ sits either immediate left or immediate right of $A$.

Case I(a): When Y sits immediate left of A.


Case I(b): When Y sits immediate right of A.

(Blue)

## Case II:



Clues:

1. The person, who likes red colour, sits $3^{\text {rd }}$ to the right of $Y$.
2. O, who doesn't like red or pink colour, sits $3^{\text {rd }}$ to the right of E .
3. The person, who likes Mercedes, sits $3^{\text {rd }}$ to the right of the person, who likes pink colour.

## Inferences:

From clue 1 and clue 2, we reject Case I(a) and Case II as we can't place the person, who likes red colour. E likes red colour. O likes green colour. U likes pink colour.

From clue 3, we get the person, sits immediate right of O likes Mercedes.
Case I(b):
(Mercedes)

(Blue)

## Clues:

1. Neither Z nor V likes Mercedes.
2. Z, who doesn't like BMW or Bentley, sits adjacent to W. V doesn't like BMW.

## Inferences:

From clue 1, we get W likes Mercedes.

From clue 2, we get Z likes Ferrari. X likes BMW. V likes Bentley.
The final arrangement is as follows:


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Directions(40-41): Answer the questions based on the information given below.
Six persons (P, Q, R, S, T and U) have different heights and different weights. T, who is the tallest person, is heavier than only $R$ and $P$. $Q$, who is lighter than $S$, is taller than $S$, who is not the heaviest person. $R$ is lighter and shorter than both $P$ and $U$. $R$ is taller than $Q$. Heaviest person is not the third tallest person.

Question 40: How many persons are taller than P?
A) One
B) Two
C) Three
D) Four
E) None of the above

## Answer: B)

## Solution:

Two persons are taller than P.
Hence, option b.
Question 41: How many persons are lighter than U?
A) One
B) Two
C) Three
D) Four
E) None of the above

## Answer: E)

## Solution:

Five persons are lighter than $U$.

Hence, option e.
Common solution:

Starting Point: We start by placing T as it is directly given in the question.

## Clues:

1. $T$, who is the tallest person, is heavier than only $R$ and $P$.

## Inference:

From clue 1, we get T is third lightest person.

Ranking for Weight:

$$
\ldots \gg \quad>T>R / P>P / R
$$

Ranking for Height:
T > $\qquad$ $>$ $\qquad$ __ $>$ $>$ $\qquad$
2. $Q$, who is lighter than $S$, is taller than $S$, who is not the heaviest person.
3. R is lighter and shorter than both P and U .
4. $R$ is taller than $Q$.
5. Heaviest person is not the third tallest person.

## Inference:

From clue 2 , we get Q is the third heaviest person.
From clue 3 and 4, we get $R$ is the lightest person and third smallest person.
From clue 5, we get $U$ is the heaviest person and second tallest person.
The final arrangement is as follows:
Ranking for weight,
$U>S>Q>T>P>R$
Ranking for height,
$T>U>P>R>Q>S$
Question 42: How many pairs of letters are there in the word 'MOMENTUM' which has as many letters between them in the word as in the alphabetical series?
A) Three
B) Two
C) Five
D) One
E) None of the above

Answer: D)

## Solution:

TU is the pair, which has as many letters between them in the given word 'MOMENTUM' as in the alphabetical series.

Hence, option d.
Question 43: How many pairs of letters are there in the word 'DECORUM' which has as many letters between them in the word as in the alphabetical series?
A) One
B) Five
C) Four
D) Two
E) None of the above

## Answer: A)

## Solution:

DE is the only pair, which has as many letters between them in the given word 'DECORUM' as in the alphabetical series.

Hence, option a.
Question 44: The question given below consists of two statements numbered I and II given below it. You have to decide whether the data provided in the statements are sufficient to answer the question. Read all the statement and answer the question.
Six persons ( $\mathrm{U}, \mathrm{V}, \mathrm{W}, \mathrm{X}, \mathrm{Y}$, and Z ) live on six different floors of a six-floor building such that the bottommost floor is numbered as 1 and the topmost floor is numbered as 6 but not necessarily in the same order. How many persons live between Z and X ?

Statement I: Only W lives above U. X lives immediately above V. Z lives below V but not on a prime numbered floor.

Statement II: V lives two floors above Z. V lives on an odd numbered floor. X lives on an even numbered floor immediately above V .
A) If the data given in statement I alone is sufficient to answer the question.
B) If the data given in statement II alone is sufficient to answer the question.
C) If the data given in either statement I or statement II alone is sufficient to answer the question.
D) If the data given in both statement, I and statement II together are sufficient to answer the question.
E) If the data given in both statement, I and statement II together are not sufficient to answer the question.

## Answer: B)

## Solution:

From Statement I alone: Only W lives above U. X lives immediately above V. Z lives below V but not on a prime numbered floor, we get:

Case I: When X lives on $4^{\text {th }}$ floor.
Case II: When X lives on $3^{\text {rd }}$ floor.

|  | Case I | Case II |
| :---: | :---: | :---: |
| Floors | Persons | Persons |
| $6^{\text {th }}$ | W | W |
| $5^{\text {th }}$ | U | U |
| $4^{\text {th }}$ | X | Y |
| $3^{\text {rd }}$ | V | X |
| $2^{\text {nd }}$ | Y | V |
| $\mathrm{I}^{\text {st }}$ | Z | Z |

Either two or one person lives between X and Z .
From Statement II alone: V lives two floors above Z. V lives on an odd numbered floor. X lives on an even numbered floor immediately above V , we get:

Case I: When V lives on $3^{\text {rd }}$ floor.
Case II: When V lives on $5^{\text {th }}$ floor.

|  | Case I | Case II |
| :---: | :---: | :---: |
| Floors | Persons | Persons |
| $6^{\text {th }}$ |  | X |
| $5^{\text {th }}$ | X | V |
| $4^{\text {th }}$ | V |  |
| $3^{\text {rd }}$ | Z | Z |
| $2^{\text {nd }}$ |  |  |
| $1^{\text {st }}$ |  |  |

Two persons live between X and Z .

The data given in statement II alone is sufficient to answer the question.
Hence, option b.

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Question 45: The question given below consists of two statements numbered I and II given below it. You have to decide whether the data provided in the statements are sufficient to answer the question. Read all the statement and answer the question.
Five persons (M, N, O, P, and Q) like different subjects (Hindi, Mathematics, English, History, and Civics) but not necessarily in the same order. Who likes Civics?

Statement I: O and P likes Hindi and Mathematics respectively. Neither N nor Q likes Civics.
Statement II: N likes History. P doesn't like Hindi and Civics. Q likes English. O doesn't like Civics.
A) If the data given in statement I alone is sufficient to answer the question.
B) If the data given in statement II alone is sufficient to answer the question.
C) If the data given in either statement I alone or statement II alone is sufficient to answer the question.
D) If the data given in both statement, I and statement II together are sufficient to answer the question.
E) If the data given in both statement I and statement II together are not sufficient to answer the question.

## Answer: C)

## Solution:

From Statement I alone: O and P likes Hindi and Mathematics respectively. Neither N nor Q likes Civics, we get:

| Persons | Subjects |
| :---: | :---: |
| $M$ | Civics |
| N | English/History |
| O | Hindi |
| P | Mathematics |
| Q | History/English |

M likes Civics.

From Statement II alone: N likes History. P doesn't like Hindi and Civics. Q likes English. O doesn't like Civics, we get:

| Persons | Subjects |
| :---: | :---: |
| $M$ | Civics |
| N | History |
| O | Hindi |
| P | Mathematics |
| Q | English |

M likes Civics.
The data given in either statement I or statement II alone is sufficient to answer the question.
Hence, option c.

## Question 46:

In the question given below, a passage is given followed by three statements which may or may not be inferred from the passage. Select the correct combination of statements that can be inferred.

Between the 1430s and the arrival of the Spanish in 1532, the Incas conquered and ruled an empire stretching for 4,000 kilometres along the spine of the Andes, from Quito in modern Ecuador to Santiago in Chile. Known to its conquerors as Tahuantinsuyu - 'the land of four parts' - it contained around 11 million people from some 80 different ethnic groups, each with its own dialect, deities and traditions. The Incas themselves, the ruling elite, comprised less than about one per cent.

1. The Incas constituted a minority in Tahuantinsuyu.
2. Tahuantinsuyu's tribes lost to the Incas in a battle which took place in 1430 s.
3. Santiago is not in Chile.
A) Only 1
B) Only 2
C) Only 1 and 2
D) Only 1 and 3
E) All 1, 2 and 3

## Answer: D)

## Solution:

(d) is the right answer as both 1 and 3 are correct.

1 is correct. The passage starts by talking about Incas whose empire stretched over 4,000 kilometres. They were the ones who conquered Tahuantinsuyu. The passage also states that they were the ruling elite who constituted less than one percent of the total population. Hence, they comprised a minority in Tahuantinsuyu.

3 is correct. The passage explicitly states that Santiago is in Chile.
Thus, (d) is the right answer.
Question 47: Swine flu, a recently discovered disease, is being diagnosed with increasing frequency. The number of cases reported this year is more than double the number reported two years ago. This clearly shows the need for the government to allocate more funds for treatment and prevention of Swine Flu.
All of the following, if true, would weaken the conclusion except
A) a new test employed for the first time this year detects Swine Flu at a considerably earlier stage in the development of the disease
B) a private foundation has committed sufficient funds to cover treatment and prevention needs as well as research for the next five years
C) a committee of experts reviewed the funding two years ago
D) funds already available for research in Swine Flu are currently under-utilized
E) the number of cases reported this year represents the same fraction of the population as reported in all of the last two years

## Answer: C)

## Solution:

As per the argument, since there has been an increase in the number of swine flu cases reported this year as compared to the levels two years ago, the government should allocate more funds for treatment and prevention of Swine Flu. All of the given reasoning would counter the above conclusion except option (c), as it says that a committee of experts reviewed the funding two years ago. This does not object the suggestion that the funding should be revised this year.

Thus, option (c) is the right answer.

Question 48: There are several cases every year where people get their appendix removed and all live normal lives after the operation. Thus, it can be concluded that the appendix has no function in the body.
The argument would be most weakened by which of the following, if it were true?
A) Another part of the body can take over the function of the appendix if it is removed.
B) The human appendix develops as part of the immune system, a system of vital importance in defense against disease.
C) People live normal lives after getting their appendix removed but the appendix is known to be part of the digestive system.
D) Surgeries for removing appendix are performed only when the appendix become seriously infected.
E) The appendix has been shown to have a vital role to play in the physiology of laboratory rabbits and guinea pigs.

## Answer: A)

## Solution:

As per the argument, since patients live normal lives after getting their appendix removed, it can be concluded that it has no function in the body. This argument can be best weakened by option (a), as it says that another part of the body can take over the function of the appendix if it is removed. This means appendix does have a function which is played by some other organ once it is removed.

Thus, option (a) is the right answer.

## Question 49:

In the question given below, a passage is given followed by three statements which may or may not be inferred from the passage. Select the correct combination of statements that can be inferred.

Grabbing the awkwardly shaped items that people pick up in their day-to-day lives is a slippery task for robots. In a significant step toward overcoming this problem, roboticists at UC Berkeley, U.S., have built a robot that can pick up and move unfamiliar, real-world objects with a 99\% success rate. The high grasping success rate of this robot means that this technology could soon be applied in industry, with the potential to revolutionise manufacturing and the supply chain.

1. The ability to pick up and move unfamiliar, real-world objects accurately is needed in the manufacturing and supply chain industry.
2. The robot only has applications in the manufacturing and supply chain industry.
3. It will be impossible to build a robot that can pick up and move objects with a success rate higher than 99\%.
A) Only 1 and 3
B) Only 1 and 2
C) Only 1
D) Only 2
E) All 1, 2 and 3

## Answer: C)

## Solution:

The premise tells us that the ability to pick objects up and move them with a $99 \%$ success rate means that this technology can be applied in industry, and it has a huge potential to revolutionise manufacturing and supply chain, which means that this ability is needed in these industries. 1 follows. Thus, (c) is the right answer.

2 does not follow as insufficient information is provided in the passage to make this conclusion. 3 is incorrect likewise.

## Question 50:

In the question given below, a passage is given followed by three statements which may or may not be inferred from the passage. Select the correct combination of statements that can be inferred.

Johns Hopkins scientists have developed a novel chemical process that may lead to the creation of a new class of antibiotics. The discovery comes at a time when more types of bacteria are becoming resistant to existing antibiotics, increasing the occurrence of lethal infections. The ability to create new antibiotics would have significant ramifications for medical treatment and public health, say the researchers.

1. Most lethal infections are caused by bacteria.
2. The new chemical process may be used to cure infections caused by bacteria resistant to existing antibiotics.
3. Antibiotics are used to cure diseases caused by bacteria.
A) Only 3
B) Only 1 and 2
C) Only 1 and 3
D) Only 2 and 3
E) All 1, 2 and 3

## Answer: D)

## Solution:

The premise tells us that the novel development of this chemical process comes at a time when more types of bacteria are becoming resistant to existing antibiotics, which means that this chemical process can be used to cure infections caused by bacteria resistant to existing antibiotics. 2 follows. The premise also tells us that many bacteria have become resistant to existing bacteria, which increases the occurrence of lethal infections, which means that antibiotics are generally used to cure infections caused by bacteria. 3 follows. Thus, (d) is the right answer.

1 is incorrect as the information given in the premise is insufficient to make this conclusion.

