SBI PO Prelims Memory Based Paper (Held on: 22 Nov 2021 Shift 3) (Previous Year Paper)

SBI Probationary Officer (PO) • 2021 • 100 questions • 60 minutes • Answer key and solutions

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ENGLISH LANGUAGE

Directions

Read the passage given below and then answer the questions given below the passage. Some words may be highlighted for your attention. Pay careful attention.

In a world of 7.3 billion people, 2.4 billion lack access to adequate sanitation, of which 1 billion have no choice but to defecate in the open. Most people without adequate sanitation live in Sub-Saharan Africa and South Asia. Millions lack menstrual hygiene and vital hand washing facilities. Diarrhoeal disease, largely caused by poor water, sanitation and hygiene, is a leading cause of malnutrition, stunting and preventable child mortality, claiming nearly 600,000 lives of children under five annually. Inadequate facilities also affect education and economic productivity and impact the dignity and personal safety of women and girls.

With so many solutions at hand, the continuing deprivation of so many is a shameful reflection of our society's priorities. In 1840, the "global sanitary revolution" transformed life in Europe and other parts of the developed world. In fact, it actually furthered the economic transformation, by making those societies cleaner and healthier. But many countries still await a sanitation revolution.

Narendra Modi, India's prime minister, says building toilets is a priority over temples. His finance minister, Arun Jaitley, used a month's budget to set a goal of ending defecating in the open by 2019. That will be 150 years since the birth of Mohandas Gandhi, who said good sanitation was more important than independence. Ending open defecation would bring immense benefits. Some 130 million households lack toilets. More than 72% of rural people relieve themselves behind bushes, in fields or by roadsides. The share is barely shrinking. Of the 1 billion people in the world who have no toilet, India accounts for nearly 600 million. The costs are high. Public safety is one underappreciated problem, as young women have to leave their rural homes after dark. A broader matter is public health. Open defecation is disastrous when practised by groups in close contact with each other. Because India's population is huge, growing rapidly and densely settled, it is impossible even in rural areas to keep human faeces from crops, wells, food and children's hands. They cause enteropathy, a chronic illness that prevents the body from absorbing calories and nutrients. That helps to explain why, in spite of rising incomes and better diets, rates of child malnourishment in India do not improve faster. UNICEF, the UN's agency for children, estimates that nearly one-half of Indian children remain malnourished.

Hundreds of thousands of them die from preventable conditions each year, especially in the north, which has the maximum open defecation. Faeces in groundwater spread diseases such as encephalitis, an annual post-monsoon scourge in eastern Uttar Pradesh. Diarrhoea leaves Indians' bodies smaller on average than those of people in poorer countries where people eat fewer calories, notably in Africa. Underweight mothers produce stunted babies prone to sickness who may fail to develop to their full cognitive potential.

Fortunately, in developing the 17 Sustainable Development Goals for the 2016-2030 period, UN Member States have recognized that good sanitation and hygiene (goal 6.2) have positive, knock-on effects for eight other goals. Specifically, these are goals to end poverty and hunger, create healthy lives, provide quality education, attain gender equality, foster sustainable growth, reduce inequality and develop sustainable cities. Sanitation transforms lives. One billion people still defecate in the open, without access to even basic toilets or hand washing facilities. Improved sanitation, hygiene and safe water save millions of lives, accelerate economic growth, enhance people's dignity, and create a better future for all.

Q1. What is the antonym of the word 'rural' in the context of the given passage?

(a) Under-developed
(b) Urban
(c) Agrarian
(d) Bucolic
(e) Rustic

Q2. In a world of 7.3 billion people, approximately _____ lack access to adequate sanitation.

(a) 50%
(b) 43%
(c) 93%
(d) 80%
(e) 33%

Q3. Even in the present day many countries still await a/an _____ revolution.

(a) Sanitation
(b) Industrial
(c) Safety
(d) Hygienic
(e) Food

Q4. Which word among the following is the most suitable synonym for the word ‘adequate’ in the context of the passage?

(a) Sufficient
(b) Insufficient
(c) Unequal
(d) Deficient
(e) Lacking

Q5. Which among the following is the most suitable synonym for the word ‘foster’ in the context of the given passage?

(a) Deprive
(b) Discourage
(c) Dispirit
(d) Promote
(e) Dishearten

Q6. What is the general tone of the author?

(a) Descriptive
(b) Narrative
(c) Analytical
(d) Argumentative
(e) Critical

Q7. Which serious disease is caused by the mixing of human faeces in crops, wells, food and children’s hands and prevents the body from absorbing calories and nutrients?

(a) Diarrhoea
(b) Malnutrition
(c) Enteropathy
(d) Mortality
(e) Encephalitis

Q8. The 17 Sustainable Development Goals for the 2016-2030 period was developed by _____.

(a) The UN member states
(b) The UNICEF
(c) The WHO
(d) All the countries in the world
(e) The Blue Cross

Q9. In which of the following areas are women NOT affected by lack sanitation according to the passage?

(a) Menstrual Hygiene
(b) Personal Safety
(c) Education
(d) Marriage

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(e) Pregnancy

Q10. Of the 1 billion people in the world who have no toilet, India accounts for nearly _____ %.

(a) 50
(b) 60
(c) 100
(d) 40
(e) 90

Q11. The question below contains five scattered segments of a sentence. Indicate the sequence which correctly assembles the segments and completes the sentence.

A. potential to not only
B. improve operations for higher productivity,
C. energy-efficiency models hold the
D. millions for any business
E. but also help save

(a) CABED
(b) EDCBA
(c) DEABC
(d) CABDE
(e) CDEAB

Q12. The question below contains five scattered segments of a sentence. Indicate the sequence which correctly assembles the segments and completes the sentence.

A. long way from facing severe
B. a net exporter of food
C. India has come a
D. independence to becoming
E. food shortages after

(a) DECBA
(b) DCEAB
(c) ABCDE
(d) EABCD
(e) CAEDB

Q13. The question below contains five scattered segments of a sentence. Indicate the sequence which correctly assembles the segments and completes the sentence.

A. towards a common
B. people in unity look
C. their own selfish motives
D. goal instead of satisfying
E. forward to work

(a) BEADC
(b) ABCED
(c) BDECA
(d) DBCEA
(e) CBDEA

Q14. The question below contains five scattered segments of a sentence. Indicate the sequence which correctly assembles the segments and completes the sentence.

A. to create something new out of it.
B. the collection and
C. recycling is a method

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D. of procedure that includes

E. breaking down waste material

(a) EBDCA
(b) CDBEA
(c) ADBEC
(d) DBCEA
(e) BDEAC

Q15. The question below contains five scattered segments of a sentence. Indicate the sequence which correctly assembles the segments and completes the sentence.

A. algeria, Tunisia and New Caledonia

B. the only countries

C. white population are

D. in which there

E. is a considerable

(a) EDCBA
(b) ABCDE
(c) BDECA
(d) CBEDA
(e) DAEBC

Q16. Fill in the blank with the appropriate word.

The _____ cocktail party was attended by the most esteemed guests from the Hollywood movie circles.

(a) Vivid
(b) Convivial
(c) Desultory
(d) Dramatic
(e) Secluded

Q17. Fill in the blank with the appropriate word.

After winning the Olympic medal, Chris was _____ into fame.

(a) Denigrated
(b) Catapulted
(c) Dissociated
(d) Abnegated
(e) Flabbergasted

Q18. Direction: The sentence given below has a blank space and five words are given in the options. Click on the word which you consider the most APPROPRIATE to fit the blank.

He expected that I would eventually _____ myself to running our home and rearing our children, much the way Louise Childs did.

(a) Delegate
(b) Impede
(c) Relegate
(d) Behest
(e) Delinquent

Q19. Fill in the blank with the correct answer from the options given below:

It was a strange fact, however, that talent and skill, if _____ for too long, cease to dazzle.

(a) suspended
(b) spent
(c) displayed
(d) surrounded

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(e) commanded

Q20. Directions: The given question has one blank indicating that something has been omitted. Choose the word for the given options that could fit in the blank correctly.

The interviewers described these chats as essential in building up rapport and trust with the participant, and for _____ their concerns.

(a) exacerbating
(b) hoodwink
(c) alleviating
(d) deferred
(e) squandering

Q21. Given below are 3 sentences, one or more of them is incorrect. Identify the one(s) that are incorrect.

A. Jay wanted to meet up with his friends but the lockdown had made it impossible for him to leave the house.

B. Pooja was distraught after the loss of her beloved pet, but she manage to move on and adopt another puppy soon.

C. Ali wasn't going to go on the trek but his friends pressured him into lying to his parent until they agreed.

(a) A and B
(b) B and C
(c) C and A
(d) A only
(e) C only

Q22. The given sentences have an error, find the sentence/s with error, if both the sentences are correct select 'Neither 1 nor 2 have an error'. Ignore any punctuation errors

1. Having heard the news, he quickly sold his brother's record collection.

2. Having been promised a steak dinner, she looked less than impressed with her Happy Meal.

(a) 1 has an error
(b) 2 has an error
(c) Both 1 and 2 have an error
(d) Neither 1 nor 2 have an error
(e) There is more than one error in either of the sentence

Q23. The given sentences have an error, find the sentence/s with error, if both the sentences are correct select 'Neither 1 nor 2 have an error'. Ignore any punctuation errors

1. I managed reach the top of the hill before sunset on the beautiful mountain peak.

2. I hope to see you next week before the presentation commences.

(a) 1 has an error
(b) 2 has an error
(c) Both 1 and 2 have an error
(d) Neither 1 nor 2 have an error
(e) There is more than one error in either of the sentence

Q24. The given sentences have an error, find the sentence/s with error, if both the sentences are correct select 'Neither 1 nor 2 have an error'. Ignore any punctuation errors

1. Jenny rang earlier and asked after you, so I told her you were fine.

2. The crowd backed away when the man pulled out a knife.

(a) 1 has an error
(b) 2 has an error
(c) Both 1 and 2 have an error
(d) Neither 1 nor 2 has an error
(e) There is more than one error in either of the sentence

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Q25. The given sentences have an error, find the sentence/s with error, if both the sentences are correct select 'Neither 1 nor 2 have an error'. Ignore any punctuation errors

1. You should not waste your time staring at close doors. Try out something meaningful.
2. The risen sun blocked the moon completely for two years on the planet Minerav.

(a) 1 has an error
(b) 2 has an error
(c) Both 1 and 2 have an error
(d) Neither 1 nor 2 have an error
(e) There is more than one error in either of the sentence

Directions

The following sentences form a paragraph. The last sentence of the paragraph is given. The rest of the sentences are numbered as P, Q, R, S and T. These five parts are not given in their proper order. Read the sentences and choose the alternative that arranges them in a correct order.

P. Artificial intelligence and machine learning are core drivers of how Google will pursue its 20-year-old mission

Q. The search engine focused strongly on mobile use and appeared to be growing more like Facebook, encouraging users to linger and explore topics, interests or stories

R. Google unveiled changes Monday aimed at making the leading search engine more visual and intuitive to the point it can answer questions before being asked

S. He described the latest changes as shifting from answers to journeys, providing ways to target queries without knowing what words to use and enhancing image-based searches

T. To organize the world's information and make it accessible to anyone, search vice president Ben Gomes said at an event in San Francisco

Google Images was redesigned to weave in "Lens" technology that enables queries based on what is pointed out in pictures.

Q26. Which of the following sentences should be the SECOND sentence of the paragraph?

(a) Q
(b) R
(c) S
(d) T
(e) P

Q27. Which of the following sentences should be the FIFTH sentence of the paragraph?

(a) P
(b) Q
(c) S
(d) R
(e) T

Q28. Which of the following sentences should be the FIRST sentence of the paragraph?

(a) P
(b) R
(c) S
(d) Q
(e) T

Q29. Which of the following sentences should be the FOURTH sentence of the paragraph?

(a) S
(b) Q
(c) R
(d) T
(e) P

Q30. Which of the following sentences should be the THIRD sentence of the paragraph?

(a) P
(b) S
(c) R
(d) Q
(e) T

QUANTITATIVE APTITUDE

Q31. In the given question, two equations numbered I and II are given. Solve both the equations and mark the appropriate answer.

I. $2x^2 + 23x + 56 = 0$

II. $12y^2 + 41y + 35 = 0$

(a) $x > y$
(b) $x < y$
(c) $x \geq y$
(d) $x \leq y$
(e) x = y or relation between x and y can not be determined.

Q32. In the given question, two equations numbered I and II are given. You have to solve both the equations and mark the appropriate answer-

I. $2x^2 – 7x + 3 = 0$

II. $2y^2 – 9y + 4 = 0$

(a) $x > y$
(b) $x < y$
(c) $x \geq y$
(d) $x \leq y$
(e) x = y or relationship between x and y cannot be established

Q33. In the following questions two equations numbered I and II are given. You have to solve both the equations and give the answer:

I. $2x^2 + 7x + 3 = 0$

II. $4y^2 + 16y + 15 = 0$

(a) $x > y$
(b) $x > y$
(c) $x < y$
(d) $x < y$
(e) x = y or no relation can be established between x and y.

Q34. In the given question, two equations numbered I and II are given. You have to solve both the equations and mark the appropriate answer.

I. $x^3 = y + 239$

II. $y^2 + 46y + 529 = 0$

(a) $x > y$
(b) $x < y$
(c) $x \geq y$
(d) $x \leq y$
(e) x = y or no relation can be obtained

Q35. In the given question, two equations numbered I and II are given. You have to solve both the equations and mark the appropriate answer -

I. $16x^2 + 20x + 6 = 0$

II. $10y^2 + 38y + 24 = 0$

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(a) if x < y
(b) if x > y
(c) if x ≤ y
(d) if x ≥ y
(e) if x = y or no relation can be established

Q36. What should come in place of the question mark '?' in the following number series?

300, 345, ?, 570, 750, 975, 1245

(a) 432
(b) 435
(c) 426
(d) 440
(e) 443

Q37. What should come in place of the question mark '?' in the following number series?

15, 23, 32, 157, ?, 1537

(a) 500
(b) 206
(c) 412
(d) 298
(e) 308

Q38. What should come in place of the question mark '?' in the following number series?

540, 419, ?, 345, 336, 332

(a) 338
(b) 358
(c) 370
(d) 350
(e) 328

Q39. What should come in place of the question mark '?' in the following number series?

0.25, 2.25, 6.25, 12.25, 20.25, ?

(a) 42.25
(b) 30.25
(c) 24.25
(d) 34.25
(e) 56.25

Q40. What should come in place of the question mark '?' in the following number series?

2, 9, 39, 161, ?, 2613

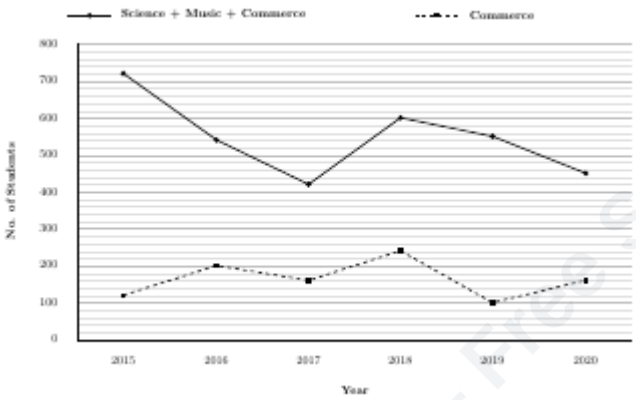
(a) 643
(b) 651
(c) 661
(d) 673
(e) 649

Directions

Direction - Study the line graph and answer the following questions carefully

The line graph shows the no. of students studying in three different streams i.e. Science, Music and Commerce in six different years and number of students studying Commerce out of them in respective years.

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Q41. Number of student in 2015 studying Science is 100 more than that of Music student. Then find Music student is how much more or less than Commerce student in 2015?

(a) 150
(b) 130
(c) 120
(d) 110
(e) None of these

Q42. Ratio of number of student in Science to that in Music in 2018 is 5 : 7. Then number of student in Music in same year is what percent of total student in 2018?

(a) 35%
(b) 40%
(c) 45%
(d) 42%
(e) None of these

Q43. Number of student studying Science in 2021 is 150 which is 60% of the Music student in 2020. Then find the ratio of Science to Commerce student in 2020?

(a) 17 : 8
(b) 1 : 4
(c) 16 : 3
(d) can't be determined
(e) None of these

Q44. Total student studying all the three streams in 2014 is 30% more than total students studying all the three streams in 2017 and Commerce student in 2014 is 4/5 th of Commerce student in 2015. Find the average of total number of Science and Music student in 2014 and 2018 together?

(a) 400
(b) 310
(c) 306
(d) 405
(e) None of these

Q45. What is the total Music and Science student in 2016 and 2018 together?

(a) 800
(b) 600
(c) 650
(d) 700
(e) None of these

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Q46. The average expenditure of the hotel when there are 15 guests is Rs. 70 per guest and the average expenditure is Rs. 50 when there are 25 Guests. If it is known that there are some fixed expenses irrespective of the number of guests then the average expenditure per guest when there are 75 guests in the hotel.

(a) Rs. 35
(b) Rs. 40
(c) Rs. 25
(d) Rs. 30
(e) Rs. 20

Q47. In a festive season, the rate of an article goes up by 12.5% due to which the sale of an article goes down by 25% then find the percentage change in the revenue of the shop?

(a) +15.625%
(b) -15.625%
(c) -10.625%
(d) +10.625%
(e) None of these

Q48. The average age of a father, a mother and a son 6 years ago was 30 years. By including a daughter present age the present average age of all four members of a family is 29. At present the average age of a father and a mother is 46 years. Find the difference between present age of a son and present age of a daughter.

(a) 10 years
(b) 4 years
(c) 8 years
(d) 2 years
(e) 6 years

Q49. A and B borrowed the same sum of money at 5% and 7% respectively rate of simple interest per annum for 2 years. B paid Rs. 80 more interest than A. Find the sum.

(a) Rs. 2000
(b) Rs. 3000
(c) Rs. 1000
(d) Rs. 5000
(e) Rs. 2500

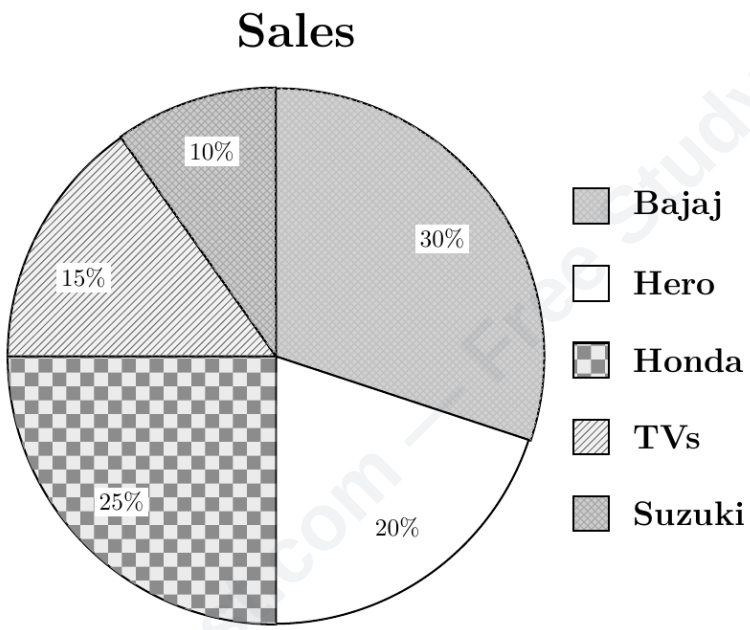
Q50. Three workers H, I and J are working on a lathe machine for 9 hours in a day and have received a target of completing 2000 pieces of metal in 5 days. What will be the extra hours required if H is 50% more efficient than I, Ratio of work done by I to J is 4 : 5 and J can complete 100 pieces in a day.

(a) 4.2 hours
(b) 4 hours
(c) 3.5 hours
(d) 3 hours
(e) 2 hours

Directions

Direction: Read the following Pie Chart carefully and answer the following questions. Pie Chart shows the sales % of different bike companies in the year 2019 and the total number of bike Sold in 2019 is 25000.

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Q51. Find the difference between the number of Bajaj bikes and TVS bikes sold.

(a) 3250
(b) 3350
(c) 3450
(d) 3750
(e) 3650

Q52. The number of Honda bikes sold is what % of number of Suzuki bikes sold?

(a) 150%
(b) 180%
(c) 300%
(d) 350%
(e) 250%

Q53. Find the number of Hero bikes sold in 2018 if in 2018 it was 80% of the number of Hero bikes sold in 2019.

(a) 5000
(b) 4000
(c) 3000
(d) 6000
(e) 5500

Q54. Find the number of Bajaj bikes sold in the year 2019.

(a) 8500
(b) 9500
(c) 7000
(d) 6500
(e) 7500

Q55. The number of Suzuki bikes sold is what % less than number of Hero bikes sold in 2019?

(a) 25%
(b) 30%
(c) 40%
(d) 50%
(e) 55%

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Q56. A person mixed milk and water in 2 containers in the ratio 3 : 4 and 5 : 6 respectively then he mixed both the mixture in the third container and the ratio of milk and water in the resultant mixture becomes 4 : 5. Total quantity of mixtures is 18 litres. Find the quantity of milk in the 1st container.

(a) 7 L
(b) 4 L
(c) 3 L
(d) 5 L
(e) none of these

Q57. A train crosses two platforms of different length in the same time. If the length of platforms is in the ratio of 5 : 3 and length of train is very small as compared to the platform, then by what percentage does the speed of train increase while crossing the longer platform?

(a) 67%
(b) 93%
(c) 33%
(d) 40%
(e) 20%

Q58. A rower can row a certain distance upstream in 15 hours and back to the initial point 6 hours early. If the speed of the stream is 4 km/hr. What is the speed of the rower in still water?

(a) 20
(b) 16
(c) 18
(d) 21
(e) 25

Q59. A invests Rs.400, B invests Rs.900 and C invests Rs.400 into a partnership. After 7 months, A adds Rs.300 to his investment, and B removes Rs.300. After 9 months, C adds some amount from his investment. They earned a total annual profit of Rs.3600. The profit share of C is Rs.1000. Find the total investment of C.

(a) Rs. 6000
(b) Rs. 4500
(c) Rs. 7900
(d) Rs. 6800
(e) Rs. 7200

Q60. A shopkeeper gives 1 shirt free for every 10 shirts bought and also gives a discount of 10%. If a person buys 10 shirts, the shopkeeper gets the profit of Rs. 200. The marked price of one shirt is Rs. 310/9. Find the CP of one shirt.

(a) 10
(b) 20
(c) 15
(d) 30
(e) None of the above

Q61. Area of rectangle is 96 square meter more than the area of triangle. Length of rectangle is 18 m. Height of triangle is 20 m. Base of triangle is equal to breadth of rectangle. Find the perimeter of rectangle

(a) 60
(b) 72
(c) 54
(d) 64
(e) 48

Q62. Two cards are taken together out of a pack of 52 cards. The probability that one card is a spade and the other is a heart?

(a) 1/52
(b) 3/52

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(c) 1/26
(d) 13/102
(e) 13/51

Q63. A diamond of weight 150 grams is cut into three pieces. The weight of the first piece and the second piece are in a ratio of 8 : 5. The weight of the third piece is 20 grams. Find the weight of the first piece.

(a) 80 grams
(b) 90 grams
(c) 100 grams
(d) 85 grams
(e) 95 grams

Q64. Ram and Shyam fill a cistern using a 50 liters bucket at the rate of 10 buckets and 15 buckets per hour. They fill the cistern in 8 hours. Anil can empty the same cistern in 50 hours by drawing out 2 buckets per hour. Find the capacity (in liter) of bucket used by Anil.

(a) 80
(b) 100
(c) 120
(d) 150
(e) None of these

Q65. In an examination, 68 percent of candidates passed in mathematics and 62 percent of the candidates passed in statistics. While 40 percent passed in both the subjects. If 30 candidates failed in both these subjects, then the total number of candidates were:

(a) 600
(b) 450
(c) 180
(d) 300
(e) None of the above/More than one of the above

REASONING ABILITY

Directions

Direction: Study the following information carefully and answer the given questions.
In a certain code language:
‘we are making efforts’ is written as ‘ee ca ce ac’,
‘making efforts for best’ is written as ‘ce bb aa ee ’,
‘result are strict for’ is written as ‘ea ca bb ae’ and
‘we are the best’ is written as ‘ca aa cc ac ’.

Q66. Which word is represented by ‘ac’?

(a) we
(b) are
(c) making
(d) efforts
(e) Can’t say

Q67. Which of the following code is used for ‘strict’ in this code language?

(a) ea
(b) ca
(c) bb
(d) ae
(e) Either 1) or 4)

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Q68. Code ‘cc’ is for which word in the given language?

(a) we
(b) are
(c) the
(d) best
(e) Can't say

Q69. Which of the following codes can be used for ‘for efforts’ in code language?

(a) bb ca
(b) ee aa
(c) ca aa
(d) bb ee
(e) ee ca

Q70. What would be the code for ‘we are the’?

(a) bb ac aa
(b) ea ae ce
(c) ca ac cc
(d) bb ea ce
(e) ae aa ea

Q71. Direction: In the following question assuming the given statements to be true, find which of the conclusion(s) among given conclusions is/are definitely true and then give your answers accordingly.

Statements:

$S = U \leq K < W, X < Q < S$

Conclusions:

I. $U < X$

II. $W > Q$

(a) Only conclusion I follows
(b) Only conclusion II follows
(c) Both conclusions I and II follow
(d) Either conclusion I or II follows
(e) None follows

Q72. Direction: In the question below are given statements followed by two conclusions numbered I, and II. 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 conclusions logically follows from the given statements.

Statements: $H < Y < U \geq Q = N > R; S = T \geq G = V < H$

Conclusions:

I. $U > V$

II. $S \geq Y$

(a) Neither I nor II follows
(b) Both I and II folows
(c) Only I follows
(d) Either I or II follows
(e) Only II follows

Q73. In the following question, how to place the symbols so that both the conditions, $E > K$ and $B < S$, definitely hold true when all the expressions are considered together?

E > F M < X; S > M K; K > Y __ B

(a) >, >, <
(b) =, >, <
(c) >, >, >

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(d) <, <, ≥
(e) <, >, =

Q74. Which of the following would replace & and @ in the following expression so that 'R > W' is definitely true?

R ≥ P > T & S > K = L; W @ B < S

(a) ≥, ≥
(b) <, >
(c) =, <
(d) ≤, >
(e) ≤, ≤

Directions

Directions: Study the following information carefully and answer the followed by it.

Ten students are sitting on two parallel benches, students sitting on bench 1 are facing south and students sitting on bench 2 are facing north. A, B, H, E and J are sitting on bench 1 while, D, I, C, G and F are sitting on bench 2. Each student has a different roll number starting from 1 to 10.

Roll number of E is 9. G is not sitting opposite to J. A is sitting at one of the extreme ends. One student is sitting between A and H. B is facing the one whose roll number is 3. Roll number of F is 5 and is sitting to the right of one who is sitting opposite to E. Sum of roll numbers of A and B is equals to 10. I is sitting to the left to the one who is sitting opposite to H. There is 1 person between I and the one whose roll number is 7. G and C are immediate neighbours. C is sitting left to the G but do not have roll number 7. The Sum of roll numbers of A and E is 13. The difference between roll numbers of the people sitting in extreme ends of bench 2 is 3. The one with a lesser roll number among these two is sitting at the left end of the bench. D is sitting opposite to the one whose roll number is 4. J has the last roll number. The Sum of roll numbers of the students sitting at bench one is 19 more than the sum of roll numbers of students sitting at bench 2.

Q75. What is the roll number of B?

(a) 6
(b) 8
(c) 3
(d) 9
(e) 4

Q76. Who is sitting at the left corner of bench 2?

(a) D
(b) I
(c) C
(d) G
(e) A

Q77. Who is sitting opposite to the one who is sitting left to I?

(a) B
(b) C
(c) H
(d) A
(e) E

Q78. How many students are sitting between B and J?

(a) 1
(b) 2
(c) 3
(d) 4
(e) None

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Q79. Which of the following statements is True?

(a) B is sitting next to the right of A.
(b) G is sitting at the centre of the bench facing north direction.
(c) H whose roll number is 8 is sitting next to the one having roll number 9.
(d) G has roll number 7 and sitting second from the left end.
(e) None of the above

Directions

Direction: Study the information given below carefully and answer the questions that follow.

There are eight members in a family – A, B, C, D, E, F, G and H. A is the grandmother of G. A is the wife of B. B has one son and one daughter. C, the daughter of A is married to E. F is the wife of D who is the son of A. H is the son of D. E has one daughter.

Q80. How is C related to D?

(a) Brother
(b) Sister
(c) Mother
(d) Daughter
(e) Granddaughter

Q81. How is C related to H?

(a) Aunt
(b) Sister
(c) Uncle
(d) Brother
(e) Father

Q82. How is H related to B?

(a) Grandson
(b) Son
(c) Brother
(d) Son-in-law
(e) None of these

Directions

Directions: Study the following information carefully and answer the questions given below:

A certain number of persons are sitting in a row facing south direction. Two persons sit between A and D. A is in the right of D. One person sits between B and A. B is the fourth person from the right end. H sits second to the left of D, who sits exactly between E and B. Neither A nor H sits at any extreme ends. G sits immediate left of E. Number of persons to the left of G is equal to the number of persons to the right of B. F sits at extreme end, which is closest to B.

Q83. How many persons sit in the row?

(a) 16
(b) 17
(c) 19
(d) 18
(e) None of these

Q84. Who sits third to the right of D?

(a) The one who sits second to the left of B?
(b) H
(c) E
(d) Person sitting third from the left end
(e) None of These

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Q85. How many persons sit to the left of G?

(a) Four
(b) Three
(c) Five
(d) One
(e) None of These

Q86. How many persons sit to the right of D?

(a) Seven
(b) Eight
(c) Nine
(d) Ten
(e) None of These

Q87. Who sits third to the left of H?

(a) G
(b) A
(c) E
(d) F
(e) None of these

Q88. How many such pairs of letters are there in the word ‘STRAWBERRY’, each of which has as many letters between them in the word (both forward and backward direction) as they have between them in the English Alphabet?

(a) 5
(b) 4
(c) 3
(d) 2
(e) 1

Directions

Direction: Study the following information carefully and answer the question given below.

Nine person Z, X, C, V, B, N, M, K, and L who lives on an nine-floor building (Ground floor is numbered 1, the floor just above it is numbered as 2 and so on till the topmost floor which is numbered as 9.) but not necessary in the same order.

There are five persons live between C and V. Both C and V live on even number floor. M live on even number floor but above 5^(th) floor. Two persons live between M and N. K live one of the floor above N. Z and X are immediate neighbour of each other. Two persons live between C and X. C live below N. L neither live on top floor nor on bottom floor.

Q89. Which of the following floor belongs to B?

(a) 5^(th)
(b) 6^(th)
(c) 1^(st)
(d) 7^(th)
(e) 9^(th)

Q90. How many persons live between L and V?

(a) One
(b) Two
(c) Three
(d) None
(e) More than three

Q91. If the positions of all the persons are arranged alphabetically from top to bottom then the position of how many persons remain unchanged?

(a) One
(b) Two

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(c) Three
(d) None
(e) More than three

Q92. Four of the following five are alike in a certain way based on their arrangement find the one which does not belong to that group?
(a) V
(b) M
(c) Z
(d) C
(e) B

Q93. Name the people who live between Z and M.
(a) C
(b) V
(c) X
(d) B
(e) No one live between Z and M

Q94. If the even digits of a number '256463127' are decreased by 2 and the odd digits are increased by 2, then which of the following number will we get by multiplying the fifth digit from the left with the second digit from the right?
(a) 0
(b) 4
(c) 12
(d) 28
(e) 36

Q95. If it is possible to make only one 4 letters meaningful word without repetition of the letter with the first, second, third and the eighth letters of the word 'MAGAZINE', which would be the third letter from the left of the word? If more than one such word can be formed, give X as the answer. If no such word can be formed, give K as your answer.
(a) M
(b) A
(c) G
(d) K
(e) X

Directions

Direction: Read the given information carefully and answer the questions asked below.

A company has decided to give one extra leave to their ten employees – J, K, L, M, N, O, P, Q, R and S. Two dates of each month have been fixed for extra leave i.e. 10^(th) and 15^(th) and only one person can take leave on any one day of a month. Five different months are – April, May, June, July and August. Only two leaves will be left after M's leave. More than four people will take leave between M and S.Q will take leave on any day after M. J, P and M will take leave on the same date. P will take leave after J but before M. J and S will not take leave in a same month. L will take leave before J but not in May.Maximum two people will take leave between L and R. Three people will take leave between K and P. N will take leave after O but neither of them will take leave in June.

Q96. Who will take leave in the last?
(a) K
(b) P
(c) R
(d) M
(e) Q

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Q97. How many people will take leave before N?

(a) Three
(b) Four
(c) Six
(d) Seven
(e) Eight

Q98. Four of the following five options are alike in a certain way, find out the odd one?

(a) L
(b) O
(c) Q
(d) R
(e) S

Q99. Which of the following combination is correct?

(a) M, 15^(th)April
(b) O, 10^(th) July
(c) J, 15^(th) July
(d) P, 15^(th) June
(e) S, 10^(th) May

Q100. How many people will take leave between L and P?

(a) One
(b) Two
(c) Three
(d) Four
(e) No one

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ANSWER KEY

1	b	2	e	3	a	4	a	5	d	6	e	7	c	8	a	9	d	10	b
11	a	12	e	13	a	14	b	15	c	16	b	17	b	18	c	19	c	20	c
21	b	22	d	23	a	24	d	25	a	26	e	27	c	28	b	29	b	30	e
31	b	32	e	33	e	34	a	35	b	36	b	37	b	38	c	39	b	40	b
41	b	42	a	43	b	44	d	45	d	46	d	47	b	48	c	49	a	50	d
51	d	52	e	53	b	54	e	55	d	56	c	57	a	58	b	59	a	60	a
61	a	62	d	63	a	64	b	65	d	66	a	67	e	68	c	69	d	70	c
71	b	72	c	73	c	74	c	75	a	76	a	77	d	78	b	79	c	80	b
81	a	82	a	83	d	84	a	85	b	86	b	87	c	88	b	89	c	90	d
91	d	92	e	93	c	94	a	95	e	96	a	97	c	98	a	99	d	100	c

SOLUTIONS

Q1. Answer: (b) Urban

‘Rural’ means related to village or country life. The appropriate antonym for ‘rural’ in the context of the passage is ‘urban’ which means ‘related to a city or city life’. The words ‘under-developed’, ‘agrarian’, ‘bucolic’, ‘rustic’ are all close in meaning to the word ‘rural’. Hence ‘urban’ is the most suitable antonym for ‘rural’.

Q2. Answer: (e) 33%

In a world of 7.3 billion people, 2.4 billion lack access to adequate sanitation which accounts for approximately 33% of people. Hence 33% of people lack access to sufficient sanitation.

Q3. Answer: (a) Sanitation

The last two lines of the second paragraph states 'In 1840, the "global sanitary revolution" transformed life in Europe and other parts of the developed world. In fact, it actually furthered the economic transformation, by making those societies cleaner and healthier. But many countries still await a sanitation revolution.'

Q4. Answer: (a) Sufficient

The synonym for the word 'adequate' in the context in which it is used in the passage is, 'sufficient' which means 'a quantity able to fulfil the need or demand'. The words 'insufficient', 'unequal', 'deficient', 'lacking' don't fit here as they are antonyms for the word 'adequate'. Therefore the appropriate synonym is 'sufficient'.

Q5. Answer: (d) Promote

'Foster' means to 'nurture or contribute to the progress of something'. The synonym for the word 'foster' which suits the context is, 'promote' which means 'contribute to the progress or growth of something'. The words 'deprive', 'discourage', 'dispirit', 'dishearten' are inappropriate in the context as they are antonyms for the word 'foster'. Therefore the appropriate synonym is 'promote'.

Q6. Answer: (e) Critical

The author uses lines like

(1) "With so many solutions at hand, the continuing deprivation of so many is a shameful reflection of our society's priorities."

(2) "More than 72% of rural people relieve themselves behind bushes, in fields or by roadsides. The share is barely shrinking. Of the 1 billion people in the world who have no toilet, India accounts for nearly 600million."

(3) "Public safety is one underappreciated problem, as young women have to leave their rural homes after dark."

Clearly the author is being 'critical' of the problem of santitation in India.

Q7. Answer: (c) Enteropathy

The third paragraph clearly states "Because India's population is huge, growing rapidly and densely settled, it is impossible even in rural areas to keep human faeces from crops, wells, food and children's hands. They cause enteropathy, a chronic illness that prevents the body from absorbing calories and nutrients."

Q8. Answer: (a) The UN member states

The last paragraph states "in developing the 17 Sustainable Development Goals for the 2016-2030 period, UN Member States have recognized that good sanitation and hygiene (goal 6.2) have positive, knock-on effects for eight other goals." Clearly the answer is 'UN Member States.'

Q9. Answer: (d) Marriage

The first paragraph states "Millions lack menstrual hygiene and vital hand washing facilities." It also states "Inadequate facilities also affect education and economic productivity and impact the dignity and personal safety of women and girls." The passage also states "Underweight mothers produce stunted babies prone to sickness who may fail to develop to their full cognitive potential" which tells us that pregnancy is also affected by sanitation. The only one of the options among the given ones NOT being affected by the lack of sanitation for women is 'marriage'.

Q10. Answer: (b) 60

The eighth line of the third paragraph states "Of the 1 billion people in the world who have no toilet, India accounts for nearly 600 million." This accounts for about 60%.

Q11. Answer: (a) CABED

The correct answer is option 1 i.e. CABED.

Explanation

• First is C as it establishes the subject i.e. energy-efficiency models. C is the only opening segment that can lead to the formation of a meaningful and grammatically correct sentence.

• Next is A as it states the importance of these models.

• B follows A as it mentions one feature of these models.

• Next is E as it contextually follows B. 'Not only...but also' is a correlative conjunction.

• Last is D as it tells what will be saved.

Correct sentence- Energy-efficiency models hold the potential to not only improve operations for higher productivity, but also help save millions for any business.

Q12. Answer: (e) CAEDB

The correct answer is option 5 i.e. CAEDB.

Explanation

• First is C as it establishes the subject i.e. India. C is the only opening segment that can lead to the formation of a meaningful and grammatically correct sentence.

• Next is A as it contextually follows C.

• E follows A as it tells what the country faced. 'Severe' mentioned in A is an appropriate adjective for the noun 'food shortages.

• Next is D as it tells when the country faced these shortages i.e. after independence.

• Last is B as it states what India has become finally even though it faced severe food shortages.

Correct sentence- India has come a long way from facing severe food shortages after Independence to becoming a net exporter of food.

Q13. Answer: (a) BEADC

The correct answer is BEADC.

Key Points

• B is the part that establishes the subject of the matter i.e. 'People in unity'. Hence, it'll be the first part after rearrangement.

• Part E talks about people looking forward to work. Hence, E follows B.

• Part A is a continuation of part E as it says that people work towards a common thing. Hence, A follows E.

• Part D talks about the common thing towards which people work i.e. a common goal. So, D follows A.

• Part C tells us that people work towards a common goal keeping aside their own selfishness. Hence, C follows D.

Correct rearrangement of segments is: People in unity look forward to work towards a common goal instead of satisfying their own selfish motives.

Hint

• While solving jumbles, one must first look for any independent sentences/segments or the option which establishes the subject matter.

• Then, one must look for connections between the sentences/segments.

• Some sentences/segments might have some concluding notions. So those options will be always at the end.

Q14. Answer: (b) CDBEA

The correct answer is CDBEA.

Key Points

• C is the part that establishes the subject of the matter i.e. 'Recycling'. Hence, it'll be the first part after rearrangement.

• Part D talks about a procedure that is similar to the word methods used in C. Hence, D follows C.

• Part B talks about the collection which comes under the procedure which was mentioned in D. Hence, B follows D.

• Part E talks about breaking down garbage. This can be done only after garbage is collected. So, E follows B.

• Part A talks about the creation of new things which can be done only after breaking down old materials. Hence, A follows E.

Correct rearrangement of segments is: Recycling is a method of procedure that includes the collection and breaking down of waste material to create something new out of it.

Hint

• While solving jumbles, one must first look for any independent sentences/segments or the option which establishes the subject matter.

• Then, one must look for connections between the sentences/segments.

• Some sentences/segments might have some concluding notion. So those options will be always at the end.

Q15. Answer: (c) BDECA

The correct answer is BDECA.

Key Points

• B is the part that establishes the subject of the matter i.e. 'countries'. Hence, it'll be the first part after rearrangement.

• In part D, which refers to countries mentioned in B. 'which' is also used to give more information about the thing it refers to. Hence, D follows C.

• Part E has a noun 'white population' whereas part E has the adjective 'considerable'. 'white population' will follow the adjective 'considerable'. Hence, C follows E and E follows D.

• Part A talks about the examples of white populations mentioned in C. Hence, A follows C.

Correct rearrangement of segments is: The only countries in which there is a considerable white population are Algeria, Tunisia and New Caledonia.

Hint

• While solving jumbles, one must first look for any independent sentences/segments or the option which establishes the subject

matter.

• Then, one must look for connections between the sentences/segments.

• Some sentences/segments might have some concluding notion. So those options will be always at the end.

Q16. Answer: (b) Convivial

The correct answer is Convivial

Key Points

• Let's look at the meaning of the answer:

• Convivial: friendly, lively, and enjoyable

• The sentence talks about a cocktail party that was attended by a lot of respected people belonging to Hollywood circles.

• The sentence is talking about a party, and unless mentioned otherwise one can assume that a party is lively and that the people attending it are having fun.

Thus, the correct answer is Convivial

Additional Information

Let's look at the meaning of the other words:

Word	Meaning
Vivid	producing powerful feelings or strong, clear images in the mind
Desultory	lacking a plan, purpose, or enthusiasm
Dramatic	Striking in appearance or effect
Secluded	Hidden; isolated; remote

Confusion Points

• Based off the definition, 'vivid' seems like something that can be used to describe a party but is usually used to describe a memory of something or a piece of art.

• Even 'dramatic' seems like a apt descriptor for a party but has a negative connotation as it involves an element of surpise or even shock.

Q17. Answer: (b) Catapulted

The correct answer is Catapulted

Key Points

• Let's look at the meaning of the answer:

• Catapulted: hurled or launched (something) in a specified direction

• The sentence talks about how something happened to Chris after having won an Olympic medal.

• When it comes to sport, winning an Olympic medal is one of the most honourable medals one can win on a global level (based on the sport one plays) and an achievement like this is likely to make a person very popular and famous as soon as they win the medal.

• This means they could be almost unknown one day and a national treasure the next.

• Hence, the verb in the blank needs to convey this sudden dive into fame that the person goes through.

Thus, the correct answer is Catapulted.

Additional Information

Let's look at the meaning of the other words:

Word	Meaning
Denigrated	criticized unfairly; disparaged
Dissociated	declared that one is not connected with or a supporter of (someone or something)
Abnegated	renounced or rejected (something desired or valuable)
Flabbergasted	greatly surprised or astonished

Q18. Answer: (c) Relegate

The correct answer is relegate.

Key Points

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Let us look at the meaning of the correct word:

• Relegate- assign an inferior rank or position to; put down; lower

• The word relegate fits perfectly as it clearly depicts the paradigm shift where the individual is expected to lower/put down the position as he/she is expected to follow on the lines of Louise Childs that is to run home and rear child.

• Therefore, the only word that can make the sentence contextually and grammatically correct is relegate.

The sentence is: He expected that I would eventually relegate myself to running our home and rearing our children, much the way Louise Chil

Additional Information

Let us look at the meanings of the other options:

• Delegate: a person sent or authorized to represent others, in particular an elected representative sent to a conference

• Impede: delay or prevent (someone or something) by obstructing them; hinder

• Behest: a person's orders or command

• Delinquent: (typically of a young person) tending to commit a crime, particularly minor crime

Q19. Answer: (c) displayed

The correct answer is displayed.

Key Points

• In the given sentence, we need a word close to the meaning of 'exhibited' to fill in the blank.

• Let us see the meanings of the given words:

• Suspended: to stop something from being active, either temporarily or permanently

• Spent: having been used and unable to be used again

• Displayed: to show something or a collection of things in an organized way for people to see

• Surrounded: to be everywhere around something

• Commanded: control over someone or something and responsibility for him, her, or it

• From the meanings of the words, we can say that 'displayed' is the most appropriate answer.

• Therefore, the correct answer is 'displayed.'

The complete sentence: It was a strange fact, however, that talent and skill, if displayed for too long, cease to dazzle.

Q20. Answer: (c) alleviating

The correct answer is 'alleviating'.

Key Points

• The meaning of the word 'alleviating' is 'make (suffering, deficiency, or a problem) less severe; relieving.'

• For example, The medicines did nothing to alleviate her pain/suffering.

• The sentence means that the interviewers described some discussions as essential for developing a trustworthy relationship with the participant, as well as relieving their concerns/issues.

• So, the word 'alleviating' fits correctly in the given blank.

• Therefore, option 3 is the correct answer.

Additional Information

• Let's learn the meanings of the other words given in the options:

• exacerbating: make (a problem, bad situation, or negative feeling) worse.

• hoodwink: deceive or trick.

• deferred: put off (an action or event) to a later time; postpone.

• squandering: waste (something, especially money or time) in a reckless and foolish manner.

Q21. Answer: (b) B and C

The correct answer is B and C

Key Points

Sentence A has no grammatical or contextual errors.

• Sentence B talks about how Pooja was very sad about the loss of her loving pet but at a certain point in time, she was able to move on from the death and adopt a new pet.

• The use of the verb 'was' in the past tense tells us that the incident has already happened.

• Pooja's pet has already passed away and it was only after that, that she adopted a new one.

• So all the verbs in the sentence should be in the past tense.

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Thus, the verb 'manage' (present tense) needs to be replaced with 'managed' (past tense).

The correct answer is: 'Pooja was distraught after the loss of her beloved pet, but she managed to move on and adopt another puppy soon.'

• Sentence C talks about how Ali was not going to go on a trek but his friends pressured him into lying to his parents.

• The sentence mentions 'parent' in the singular, this means that any pronoun referring to the parent will be in the singular format.

• We've already established Ali's pronoun as 'he' so the 'they' in this case refers to a plural pronoun.

Thus, the plural 'they' pronoun needs to be replaced with the singular pronoun 'he/she'.

The correct sentence is: 'Ali wasn't going to go on the trek but his friends pressured him into lying to his parent until he/she agreed.'

Q22. Answer: (d) Neither 1 nor 2 have an error

The correct answer is Option 4)i.e. Neither 1 nor 2 have an error.

Key Points

• A participle is a word that is partly a verb and partly an adjective.

• Example: Hearing a loud noise, the boy woke up.

• Here the word 'hearing' qualifies the noun boy as an adjective does. It is formed from the verb hear and has an object 'noise'. The word 'hearing', therefore, has the properties of a verb and an adjective and is called a participle.

• Present participles end in -ing and represent an action as going on or incomplete or imperfect. Present participles formed from transitive verbs, take objects.

• Example: Knocking at the door, he demanded admission

• Here, knocking is a present participle and it represents the action of repeated knocks that are still going on at the current time.

• The past participle usually ends in -ed, -d, -t, -en or -n. It represents a completed action or state.

• Example: Driven by rain, we took shelter under a tree.

• Here, 'drive + en' is talking about an action (of driving) that took place and was completed in the past.

• In sentence 1,'Having heard the news, he quickly sold his brother's record collection' The use of 'having heard' denotes the 'Having + past participle' for the past participle 'heard' it is correct.Yes

• Sentence 2, 'Having been promised a steak dinner, she looked less than impressed with her Happy Meal'.

• In sentence 2 'having been promised' denotes the 'Having + past participle'

• the past participle is 'promised', it can be seen the event took place in the past. It is correct.Yes

?Correct sentence: Having heard the news, he quickly sold his brother's record collection.Yes

?Correct sentence: Having been promised a steak dinner, she looked less than impressed with her Happy Meal. Yes

Q23. Answer: (a) 1 has an error

The correct answer is Option 1)i.e. 1 has an error.

Key Points

• The infinitive is the base form of a verb. In English, when we talk about the infinitive we are usually referring to the present infinitive, which is the most common.

• The to-infinitive is used in many sentence constructions, often expressing the purpose of something or someone's opinion about something. The to-infinitive is used following a large collection of different verbs as well.

• In some cases 'to' has the same meaning as 'in order to' or 'so as to'.

• Example: They came to collect their bonus cheques.

• This means that they were here ' in order to ' collect the bonus cheques.

• The sentence stated in 1, 'I managed reach the top of the hill before sunset on the beautiful mountain peak.' is incorrect.?

• The sentence stated in 2, 'I hope to see you next week before the presentation commences.' is correct.Yes

• The word 'reach' means to arrive at a place.

• When you use an infinitive verb, the "to" is a part of the verb. It is not acting as a preposition in this case.

• In sentence 1, we should add 'to' before managed.Yes

• The form should be: to-infinitive = to + base verb

• The present infinitive base is the verb form you will find in a dictionary, it can be written as:

To-infinitive	Zero infinitive
to play	play

to sleep	sleep

• So in the given sentence 1, we should write 'I managed to reach the top of the hill before sunset on the beautiful mountain peak.'

?Correct sentence: I managed to reach the top of the hill before sunset on the beautiful mountain peak.Yes

?Correct sentence: I hope to see you next week before the presentation commences.Yes

Q24. Answer: (d) Neither 1 nor 2 has an error

The correct answer is "Neither 1 nor 2 has an error"

Key Points

• The gerund looks exactly the same as a present participle, but it is useful to understand the difference between the two. The gerund always has the same function as a noun (although it looks like a verb).

• Example: Hunting is a dangerous sport.

• The word 'hunting' is used as a noun in the sentence although Hunt + ing seems to be a verb in itself.

• Phrasal verbs are phrases that indicate actions. They are generally used in spoken English and informal texts.

• Examples of such verbs include: turn down, come across and run into.

• Phrasal verbs are composed of a verb + preposition or adverb.

• The gerund must be used when a verb comes after a preposition. This is also true of certain expressions ending in a preposition,

• For example the expressions 'in spite of' & 'there's no point in'.

• Example: His mother is his model. She is the person he looks up to.

• Here 'look up to' is the phrasal verb in the sentence.

• In the given sentences (1 and 2) while sentence 1 is correct 'Jenny rang earlier and asked after you, so I told her you were fine.', the phase verb in the given sentence asked after (Enquire about someone's health, how life is going.)

• Sentence 2 is also correct, 'The crowd backed away when the man pulled out a knife.'

• Here, 'backed away' means that the crowd steeped backward upon seeing the knife.

Correct sentence: Jenny rang earlier and asked after you, so I told her you were fine.

**Correct sentence: The crowd backed away when the man pulled a knife.

Q25. Answer: (a) 1 has an error

The correct answer is Option 1)i.e. 1 has an error.

Key Points

• A participle is a word that is partly a verb and partly an adjective.

• Example: Hearing a loud noise, the boy woke up.

• Here the word 'hearing' qualifies the noun boy as an adjective does. It is formed from the verb hear and has an object 'noise'. The word 'hearing', therefore, has the properties of a verb and an adjective and is called a participle.

• Present participles end in -ing and represent an action as going on or incomplete or imperfect. Present participles formed from transitive verbs, take objects.

• Example: Knocking at the door, he demanded admission

• Here, knocking is a present participle and it represents the action of repeated knocks that are still going on at the current time.

• The past participle usually ends in -ed, -d, -t, -en or -n. It represents a completed action or state.

• Example: Driven by rain, we took shelter under a tree.

• Here, 'drive + en' is talking about an action (of driving) that took place and was completed in the past.

• In sentence 1,'You should not waste your time staring at close doors. Try out something meaningful' The use of 'close' is incorrect.?

• 'closed' should be the correct past participle that is used with 'doors' to indicate that options that do not exist should not be pursued. So it is correct.Yes

• Sentence 2, 'The risen sun blocked the moon completely for two years on the planet Minerav'.

• In sentence 2 'risen' denotes the past participle in which (the sun hid the moon) as it can be seen the event took place in the past. It is correct.Yes

?Correct sentence: You should not waste your time staring at closed doors. Try out something meaningful.Yes

?Correct sentence: The risen sun blocked the moon completely for two years on the planet Minerav. Yes

Q26. Answer: (e) P

There is no doubt that this passage is related to technology, and the particular organisation in question is 'Google.' This is introduced to us in sentence R.

The next sentence must be P where it says that ‘the 20-year old mission’ is referring to the mission of making the search engine more intuitive. This tells us how they are going to achieve it.

The third sentence is T as this sentence starts with ‘to.’

The fourth sentence is Q. Since the paragraph has already introduced us to ‘Google’ now it is referring to it as ‘the search engine.’ This sentence tells us what they want to achieve and what their focus areas will be.

Finally, the fifth sentence will be S.

Thus, the correct chronological order for the passage is RPTQS.

Q27. Answer: (c) S

There is no doubt that this passage is related to technology, and the particular organisation in question is 'Google.' This is introduced to us in sentence R.

The next sentence must be P where it says that ‘the 20-year old mission’ is referring to the mission of making the search engine more intuitive. This tells us how they are going to achieve it.

The third sentence is T as this sentence starts with ‘to.’

The fourth sentence is Q. Since the paragraph has already introduced us to ‘Google’ now it is referring to it as ‘the search engine.’ This sentence tells us what they want to achieve and what their focus areas will be.

Finally, the fifth sentence will be S.

Thus, the correct chronological order for the passage is RPTQS.

Q28. Answer: (b) R

There is no doubt that this passage is related to technology, and the particular organisation in question is 'Google.' This is introduced to us in sentence R.

The next sentence must be P where it says that ‘the 20-year old mission’ is referring to the mission of making the search engine more intuitive. This tells us how they are going to achieve it.

The third sentence is T as this sentence starts with ‘to.’

The fourth sentence is Q. Since the paragraph has already introduced us to ‘Google’ now it is referring to it as ‘the search engine.’ This sentence tells us what they want to achieve and what their focus areas will be.

Finally, the fifth sentence will be S.

Thus, the correct chronological order for the passage is RPTQS.

Q29. Answer: (b) Q

There is no doubt that this passage is related to technology, and the particular organisation in question is 'Google.' This is introduced to us in sentence R.

The next sentence must be P where it says that ‘the 20-year old mission’ is referring to the mission of making the search engine more intuitive. This tells us how they are going to achieve it.

The third sentence is T as this sentence starts with ‘to.’

The fourth sentence is Q. Since the paragraph has already introduced us to ‘Google’ now it is referring to it as ‘the search engine.’ This sentence tells us what they want to achieve and what their focus areas will be.

Finally, the fifth sentence will be S.

Thus, the correct chronological order for the passage is RPTQS.

Q30. Answer: (e) T

There is no doubt that this passage is related to technology, and the particular organisation in question is 'Google.' This is introduced to us in sentence R.

The next sentence must be P where it says that ‘the 20-year old mission’ is referring to the mission of making the search engine more intuitive. This tells us how they are going to achieve it.

The third sentence is T as this sentence starts with ‘to.’

The fourth sentence is Q. Since the paragraph has already introduced us to ‘Google’ now it is referring to it as ‘the search engine.’ This sentence tells us what they want to achieve and what their focus areas will be.

Finally, the fifth sentence will be S.

Thus, the correct chronological order for the passage is RPTQS.

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Q31. Answer: (b) x < y

Calculation:

I. $2x^2 + 23x + 56 = 0$

=> $2x^2 + 16x + 7x + 56 = 0$

=> $2x(x + 8) + 7(x + 8) = 0$

=> $(2x + 7)(x + 8) = 0$

=> $x = -7/2, -8$

II. $12y^2 + 41y + 35 = 0$

=> $12y^2 + 21y + 20y + 35 = 0$

=> $3y(4y + 7) + 5(4y + 7) = 0$

=> $(3y + 5)(4y + 7) = 0$

=> $y = -5/3, -7/4$

Comparison between x and y (via Tabulation):

Value of x	Value of y	Relation
-7/2	-5/3	x < y
-7/2	-7/4	x < y
-8	-5/3	x < y
-8	-7/4	x < y

Therefore The result will be x < y.

Q32. Answer: (e) x = y or relationship between x and y cannot be established

I. 2x2 – 7x + 3 = 0

=> $2x^2 - 6x - x + 3 = 0$

=> $2x(x - 3) - 1(x - 3) = 0$

=> $(2x - 1)(x - 3) = 0$

So, x = 1/2, x = 3

II. 2y2 – 9y + 4 = 0

=> $2y^2 - 8y - y + 4 = 0$

=> $2y(y - 4) - 1(y - 4) = 0$

=> $(y - 4)(2y - 1) = 0$

So, y = 4, y = 1/2

x	y	relation
1/2	4	x < y
1/2	1/2	x = y
3	4	x < y
3	1/2	x > y

Hence, the relation between x and y cannot be established

Q33. Answer: (e) x = y or no relation can be established between x and y.

I. $2x^2 + 7x + 3 = 0$

=> $2x^2 + x + 6x + 3 = 0$

=> $x(2x + 1) + 3(2x + 1) = 0$

=> $(x + 3)(2x + 1) = 0$

Then, x = (-3) or x = (-1/2)

II. $4y^2 + 16y + 15 = 0$

=> $4y^2 + 6y + 10y + 15 = 0$

=> $2y(2y + 3) + 5(2y + 3) = 0$

=> $(2y + 5)(2y + 3) = 0$

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Then, y = (-5/2) or y = (-3/2)

So, when x = (-1/2), x > y for y = (-5/2) and x > y for y = (-3/2)

And when x = (-3), x < y for y = (-5/2) and x < y for y = (-3/2)

Therefore So, the relationship can not be determined.

Q34. Answer: (a) x > y

First we have to find the value of y

II. $y^2 + 46y + 529 = 0$

=> $y^2 + 2 \times 23y + 23^2 = 0$

=> $(y + 23)^2 = 0$

=> y = -23

Now, we can find the value of x

I. $x^3 = y + 239$

=> $x^3 = -23 + 239$

=> $x^3 = 216$

=> x = 6

Therefore x > y

Q35. Answer: (b) if x > y

I. $16x^2 + 20x + 6 = 0$

=> $16x^2 + 12x + 8x + 6 = 0$

=> $4x(4x + 3) + 2(4x + 3) = 0$

=> $(4x + 2)(4x + 3) = 0$

=> x = (-2/4) or x = (-3/4)

II. $10y^2 + 38y + 24 = 0$

=> $10y^2 + 30y + 8y + 24 = 0$

=> $10y(y + 3) + 8(y + 3) = 0$

=> $(10y + 8)(y + 3) = 0$

=> y = (-8/10) or y = (-3)

So, when x = (-2/4), x > y for y = (-3) and x > y for y = (-8/10)

And when x = (-3/4), x > y for y = (-3) and x > y for y = (-8/10)

Therefore x > y

Q36. Answer: (b) 435

Calculation:

The logic behind the given series is as follows:

300 + 45 = 345

345 + 90 = 435

435 + 135 = 570

570 + 180 = 750

750 + 225 = 975

975 + 270 = 1245

Therefore The value of '?' is 435.

Q37. Answer: (b) 206

The series follows the following pattern:

$15 + 2^3 = 23$

$23 + 3^2 = 32$

$32 + 5^3 = 157$

$157 + 7^2 = 206$

$206 + 11^3 = 1537$

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Q38. Answer: (c) 370

The series follows the following pattern:

$540 - 11^2 = 419$

$419 - 7^2 = 370$

$370 - 5^2 = 345$

$345 - 3^2 = 336$

$336 - 2^2 = 332$

Q39. Answer: (b) 30.25

The series follows the following pattern:

$0.5 \times 0.5 = 0.25$

$1.5 \times 1.5 = 2.25$

$2.5 \times 2.5 = 6.25$

$3.5 \times 3.5 = 12.25$

$4.5 \times 4.5 = 20.25$

$5.5 \times 5.5 = 30.25$

Q40. Answer: (b) 651

The pattern followed by the series is

$2 \times 4 + 1 = 9$

$9 \times 4 + 3 = 39$

$39 \times 4 + 5 = 161$

$161 \times 4 + 7 = 651$

$651 \times 4 + 9 = 2613$

Q41. Answer: (b) 130

Given

In 2015, Number of students studying Science, Music and Commerce = 720

In 2015, Number of students studying Commerce = 120

Formula:

Difference of students in a year =(Music students – Commerce students)

Calculation

Number of students studying Science and Music together in 2015 = 720 – 120 = 600

According to question,

Difference of Science and Music student in 2015 = 100

Music students in 2015 = 500 / 2 = 250

And Science students in 2015 = 250 + 100 = 350

So, the required difference = 250 – 120 = 130

Therefore Difference between Commerce and Music students in 2015 is 130.

Q42. Answer: (a) 35%

Given

In 2018, number of students in Science, Music and Commerce = 600

In 2018, number of students in Commerce = 240

Ratio of number of student in Science and Music = 5 : 7

Formula

Required % =(student in Music / total number of students) × 100

Calculation

In 2018, number of students in Science and Music = 600 – 240 = 360

Ratio of Science and Music students = 5 : 7

So, the number of Music students = 360 × 7 / 12 = 210

Required percent = 210 × 100 / 600 = 35%

Therefore Number of students In Music is 35% of total students in year 2018.

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Q43. Answer: (b) 1 : 4

Given

Number of students of Science, Music and Commerce in 2020 = 450

Number of students of Commerce in 2020 = 160

Science students in 2021 = 150

Formula

Required ratio = number of students in Science : number of students in Commerce

Calculation

Number of students of Science and Music in 2020 together = 450 – 160 = 290

According to the question,

In 2021, Science students = 150, which is 60% of Music students in 2020

Music students in 2020 = 150 × 100 / 60 = 250

Science students in 2020 = 290 – 250 = 40

The ratio between science to commerce students in 2020 = 40 : 160 => 1 : 4

Therefore Ratio of Science and Commerce students is 1 : 4.

Q44. Answer: (d) 405

Given that:

Total students of Science, Music and Commerce in 2017 = 420

Commerce student in 2015 = 120

Total students of Science, music and Commerce in 2018 = 600

Commerce student in 2018 = 240

Formula:

Average = total students / number of years

Calculation:

Total students in 2014 = 130% of total students studying in 2017

=> 130 × 420/100 = 546

Now, Commerce students in 2014 = 120 × 4/5 = 96

So, the number of students of Science and Music in 2014 = 546 – 96 = 450

The number of students of Science and Music in 2018 = 600 – 240 = 360

Required average = (450 + 360)/2 = 810/2 = 405

Therefore the average of total number of Science and Music student in 2014 and 2018 is 405.

Q45. Answer: (d) 700

Given

Total students of Science, Music and Commerce in 2016 = 540

Students of Commerce in 2016 = 200

Total students of Science, Music and Commerce in 2018 = 600

Students of Commerce in 2018 = 240

Formula

Total student of Science and Music in 2016 and 2018 = number of student of Science and Music in 2016 + number of student of Science and Music in 2018

Calculation

Number of students of Science and Music in 2016 = 540 – 200 = 340

Number of students of Science and Music in 2018 = 600 – 240 = 360

So, the total students of Music and Science students in 2016 and 2018 together = 340 + 360 = 700.

Therefore The required sum is 700.

Q46. Answer: (d) Rs. 30

Shortcut Trick

Change in Total Expenditure = (25 × 50) − (15 × 70) = 1250 − 1050 = Rs. 200.

Variable Cost per guest = 200 ÷ (25 − 15) = 200 ÷ 10 = Rs. 20.

Fixed Cost = Total − Variable = 1050 − (15 × 20) = Rs. 750.

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For 75 guests: Total = 750 + (75 × 20) = 750 + 1500 = Rs. 2250.

Average = 2250 ÷ 75 = Rs. 30.

Therefore The correct answer is Rs. 30.

Alternate Method

Given: Average for 15 guests = Rs. 70 | Average for 25 guests = Rs. 50.

Formula Used: Total Expenditure = Fixed Cost + (Variable Cost × Number of Guests).

=> Total Exp1 = 15 × 70 = Rs. 1050

=> Total Exp2 = 25 × 50 = Rs. 1250

=> Variable Cost per guest (V) = (1250 − 1050) ÷ (25 − 15) = 200 ÷ 10 = Rs. 20

=> Fixed Cost (F) = 1050 − (15 × 20) = 1050 − 300 = Rs. 750

=> Total Exp for 75 guests = 750 + (75 × 20) = 750 + 1500 = Rs. 2250

=> Average Exp per guest = 2250 ÷ 75 = Rs. 30

Therefore The correct answer is Rs. 30.

Additional Information

Fixed and Variable Expenses

Total Cost = Fixed Cost + (Variable Cost per unit × Number of units). Fixed cost remains constant regardless of production volume.

Average Expenditure Formula

Average Expenditure = Total Expenditure ÷ Total Number of Guests. As guests increase, the fixed component per guest decreases.

Q47. Answer: (b) -15.625%

Shortcut Trick

Revenue = Rate × Sale

Use effective percentage change formula: a + b + (ab/100)

Rate change (a) = +12.5% | Sale change (b) = −25%

Change = 12.5 − 25 + [(12.5 × −25) ÷ 100] = −12.5 − 3.125 = −15.625%

Therefore The correct answer is −15.625%.

Alternate Method

Given:

Increase in Rate = 12.5% = 1/8 (Fraction)

Decrease in Sale = 25% = 1/4 (Fraction)

Calculation:

=> Let initial Rate = 8 units and initial Sale = 4 units

=> Initial Revenue = 8 × 4 = 32 units

=> New Rate = 8 + 1 = 9 units

=> New Sale = 4 − 1 = 3 units

=> New Revenue = 9 × 3 = 27 units

=> Change in Revenue = 27 − 32 = −5 units

=> Percentage Change = (−5 ÷ 32) × 100

=> Percentage Change = −15.625%

Therefore The correct answer is −15.625%.

Additional Information

Successive Percentage Formula

For two successive changes a% and b%, the net change is [a + b + (ab/100)]%.

Fraction Conversion

Converting percentages to fractions (like 12.5% = 1/8) simplifies calculations involving products of variables.

Revenue Relation

If Total = A × B, then any percentage change in A or B directly impacts the Total multiplicatively.

Q48. Answer: (c) 8 years

Shortcut Trick

Present sum of Father, Mother, and Son = (30 × 3) + (3 × 6) = 90 + 18 = 108 years.

Total present sum (including Daughter) = 29 × 4 = 116 years => Daughter age = 116 − 108 = 8 years.
Present sum of Father and Mother = 46 × 2 = 92 years.
Son present age = 108 − 92 = 16 years.
Difference = 16 − 8 = 8 years.
Therefore The correct answer is 8 years.
Alternate Method
Given: Average age of Father, Mother, and Son 6 years ago = 30 years.
Formula: Total Age = Average Age × Number of Members
=> Sum of ages of Father (F), Mother (M) and Son (S) 6 years ago = 30 × 3 = 90 years.
=> Present sum of ages (F + M + S) = 90 + (3 × 6) = 108 years.
=> Present sum of all 4 members (F + M + S + Daughter) = 29 × 4 = 116 years.
=> Present age of Daughter (D) = 116 − 108 = 8 years.
=> Present sum of Father and Mother = 46 × 2 = 92 years.
=> Present age of Son (S) = (F + M + S) − (F + M) = 108 − 92 = 16 years.
=> Difference = Age of Son − Age of Daughter = 16 − 8 = 8 years.
Therefore The correct answer is 8 years.
Additional Information
Average Age Shift
If the average age of n members is x years today, then n years ago it was (x − n) and n years later it will be (x + n).
Weighted Average
Combined Average = (n1x1 + n2x2) ÷ (n1 + n2) where n is the number of items and x is the average.

Q49. Answer: (a) Rs. 2000

Shortcut Trick
Difference in Rate of Interest = 7% − 5% = 2% per annum.
Difference in Interest for 2 years = 2% × 2 = 4% of the sum.
Given, 4% of Sum = Rs. 80.
=> 1% of Sum = Rs. 20.
=> 100% (Sum) = Rs. 20 × 100 = Rs. 2000.
Therefore The correct answer is Rs. 2000.
Alternate Method
Given: Rate for A (R1) = 5%, Rate for B (R2) = 7%, Time (T) = 2 years, Difference in Interest = Rs. 80.
Formula Used: Simple Interest (SI) = (P × R × T) ÷ 100
=> Let the Sum be P.
=> Interest for B − Interest for A = 80
=> [(P × 7 × 2) ÷ 100] − [(P × 5 × 2) ÷ 100] = 80
=> (14P − 10P) ÷ 100 = 80
=> 4P ÷ 100 = 80
=> P = (80 × 100) ÷ 4
=> P = 20 × 100 = 2000
Therefore The correct answer is Rs. 2000.
Additional Information
Simple Interest Principle
Simple interest is calculated only on the Principal amount. The formula is SI = (P×R×T)/100.
Amount in SI
The total amount (A) after T years is the sum of Principal and Interest: A = P + SI = P[1 + (RT/100)].
Direct Variation
Simple interest varies directly with Rate and Time if the Principal remains constant.

Q50. Answer: (d) 3 hours

Shortcut Trick
Total target = 2000 pieces in 5 days → 400 pieces/day.

Current daily work: J = 100, I = 100 × (4/5) = 80, H = 80 × 1.5 = 120.
Total daily pieces = 100 + 80 + 120 = 300 pieces in 9 hours.
To reach 400 pieces, time required = (400 ÷ 300) × 9 = 12 hours.
Extra hours = 12 − 9 = 3 hours.
Therefore The correct answer is 3 hr.
Alternate Method
Given: Target = 2000 pieces in 5 days; Total time = 9 hours/day; J = 100 pieces/day.
Formula: Work = Efficiency × Time; Extra hours = Required time − Available time.
=> Efficiency of J = 100 pieces / 9 hours.
=> Ratio of I : J = 4 : 5 Therefore Efficiency of I = (4/5) × 100 = 80 pieces / 9 hours.
=> H is 50% more efficient than I Therefore Efficiency of H = 1.5 × 80 = 120 pieces / 9 hours.
=> Combined pieces per day = 100 + 80 + 120 = 300 pieces in 9 hours.
=> Target pieces per day = 2000 ÷ 5 = 400 pieces.
=> Total hours needed for 400 pieces = (400 ÷ 300) × 9 = 12 hours.
=> Extra hours = 12 − 9 = 3 hours.
Therefore The correct answer is 3 hr.
Additional Information
Efficiency and Time Relationship
Efficiency is inversely proportional to time taken for a fixed amount of work. If efficiency increases by 50% (ratio 3:2), the time taken decreases (ratio 2:3).
Work-Time Multiplier
The formula M1D1H1 / W1 = M2D2H2 / W2 is used when the number of men, days, or hours changes relative to the work volume.

Q51. Answer: (d) 3750

Calculation:
Percentage of Bajaj bikes sold = 30%
Percentage of TVS bikes sold = 15%
Difference between % of Bajaj and TVS bikes sold = (30 - 15)%
=> Difference between % of Bajaj and TVS bikes sold = 15%
Difference in number of Bajaj and TVS bikes sold = 15% of 25000
=> (15 / 100) × 25000
=> 3750
Therefore Difference in number of Bajaj and TVS bikes sold is 3750

Q52. Answer: (e) 250%

Calculation:
Total number of bikes sold in 2019 = 25000
Percentage of Honda bikes sold = 25%
Number of Honda bikes sold = 25% × 25000
=> Number of Honda bikes sold = 6250
Percentage of Suzuki bikes sold = 10%
Number of Suzuki bikes sold = 10% × 25000
=> Number of Suzuki bikes sold = 2500
Now, Honda bikes sold is what % of the Suzuki bikes sold = (6250 / 2500) × 100
=> 250%
Therefore Honda bikes sold is 250% of the Suzuki bike sold
Alternate solution:
(Percentage of Honda bikes / Percentage of Suzuki bikes) × 100
=> (25 / 10) × 100
=> 250%

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Q53. Answer: (b) 4000

Calculation:
Total number of bikes sold = 25000
Percentage of Hero bikes sold = 20%
Number of Hero bikes sold in 2019 = 20% × 25000
=> Number of Hero bikes sold = 5000
Now, Number of Hero bikes sold in 2018 = 80% of 5000
=> 4000
Therefore Number of Hero bikes sold in 2018 is 4000
Alternate solution:
Total number of bikes sold in 2019 = 25000
Number of Hero bikes sold in 2018 = 20% of 80% × 25000
=> 4000
Therefore Number of Hero bikes sold in 2018 is 4000

Q54. Answer: (e) 7500

Calculation:
Total number of bikes sold in 2019 = 25000
Percentage of Bajaj bikes sold = 30%
Number of Bajaj bikes sold = 30% of 25000
=> Number of Bajaj bikes sold = 7500
Therefore Number of Bajaj bikes sold in 2019 is 7500

Q55. Answer: (d) 50%

Calculation:
Total number of bikes sold in 2019 = 25000
Percentage of Suzuki bikes sold = 10%
Number of Suzuki bikes sold = 10% × 25000
=> 2500
Percentage of Hero bikes sold = 20%
Number of Hero bikes sold = 20% × 25000
=> 5000
Number of Hero bikes - Number of Suzuki bikes = (5000 - 2500)
=> 2500
Less % = (2500 / 5000) × 100
=> 50%
The number of Suzuki bikes is 50% less than number of Hero bikes
Alternate solution:
Percentage of Suzuki bikes = 10%
Percentage of Hero bikes = 20%
Less % = (20 - 10) / 20 × 100
=> Less % = 50%
Number of Suzuki bikes is 50% less than number of Hero bikes in 2019

Q56. Answer: (c) 3 L

Shortcut Trick
Milk concentration in Container 1 = 3/7 and in Container 2 = 5/11.
Resultant Milk concentration = 4/9.
Using Alligation (Milk): |5/11 − 4/9| : |3/7 − 4/9| => 1/99 : 1/63 => 7 : 11.
Total ratio parts = 7 + 11 = 18 units = 18 L Therefore 1 unit = 1 L.
Quantity of 1st mixture = 7 L. Milk in it = 7 × (3/7) = 3 L.
Therefore The correct answer is 3 L.
Alternate Method

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Given: Ratio 1 = 3:4, Ratio 2 = 5:6, Final Ratio = 4:5, Total Volume = 18 L.

Formula: Quantity1 × (C1 − C_m) = Quantity2 × (C_m − C2)

=> Let Q1 and Q2 be the volumes of the two containers.

=> Milk fraction: Q1(3/7) + Q2(5/11) = (Q1 + Q2)(4/9)

=> Q1(4/9 − 3/7) = Q2(5/11 − 4/9)

=> Q1(1/63) = Q2(1/99) => Q1/Q2 = 63/99 = 7/11

=> Total units = 7 + 11 = 18 → 18 L Therefore Q1 = 7 L

=> Milk in 1st container = 7 × (3 / (3 + 4)) = 7 × 3/7 = 3 L

Therefore The correct answer is 3 L.

Additional Information

Alligation Rule

Used to find the ratio in which two ingredients at given prices/concentrations are mixed to produce a mixture of a mean price. Ratio = (Dearer − Mean) : (Mean − Cheaper).

Replacement Method

When a quantity is replaced repeatedly: Final Concentration = Initial Concentration × $(1 - x/V)^n$, where x is replaced volume and V is total volume.

Multiple Mixtures

When mixing multiple containers, the total quantity of a component (milk) is the sum of quantities from each container: Σ(Ratio × Volume).

Q57. Answer: (a) 67%

Shortcut Trick

Since time is constant, speed is directly proportional to distance (S prop. to D).

Ratio of lengths of platforms = 5 : 3.

Since the train length is negligible, ratio of speeds = ratio of distances = 5 : 3.

Percentage increase in speed = (Difference / Initial Speed) × 100.

Percentage increase = [(5 − 3) / 3] × 100 = (2 / 3) × 100 ≈ 66.66%.

Therefore The correct answer is 67%.

Alternate Method

Given: Ratio of platform lengths L1 : L2 = 5 : 3. Time T is constant. Train length is negligible.

Formula Used: Speed (S) = Distance (D) / Time (T)

=> Let the length of the shorter platform be 3x and the longer platform be 5x.

=> Let the time taken in both cases be T.

=> Speed for longer platform S1 = 5x / T.

=> Speed for shorter platform S2 = 3x / T.

=> Percentage increase in speed = [(S1 − S2) / S2] × 100.

=> [(5x/T − 3x/T) / (3x/T)] × 100 = (2 / 3) × 100 = 66.66%.

Therefore The correct answer is 67%.

Additional Information

Relative Speed

When two objects move in the same direction, relative speed = S1 − S2. In opposite directions, relative speed = S1 + S2.

Train crossing objects

When a train crosses a platform, total distance = Train Length + Platform Length. When it crosses a pole/point object, distance = Train Length.

Proportionality in Speed, Distance, Time

If Time is constant, D1/D2 = S1/S2. If Distance is constant, S1/S2 = T2/T1.

Q58. Answer: (b) 16

Shortcut Trick

Time taken Upstream (T_u) = 15 hours.

Time taken Downstream (T_d) = 15 − 6 = 9 hours.

Ratio of time (Upstream : Downstream) = 15 : 9 = 5 : 3.

Since distance is constant, Ratio of Speed (Upstream : Downstream) = 3 : 5.

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Speed of rower (u) = (5 + 3)/2 = 4 units; Speed of stream (v) = (5 − 3)/2 = 1 unit.
Given v = 1 unit = 4 km/hr → u = 4 units = 16 km/hr.
Therefore The correct answer is 16 km/hr.
Alternate Method
Given: Upstream time (T_u) = 15 hours; Downstream time (T_d) = 15 − 6 = 9 hours; Stream speed (v) = 4 km/hr.
Formula Used: Distance = Speed × Time; Upstream speed = u − v; Downstream speed = u + v.
=> (u − 4) × 15 = (u + 4) × 9
=> 15u − 60 = 9u + 36
=> 15u − 9u = 36 + 60
=> 6u = 96
=> u = 96 ÷ 6 = 16 km/hr.
Therefore The correct answer is 16 km/hr.
Additional Information
Still Water Speed Formula
Speed of rower in still water (u) = (Downstream Speed + Upstream Speed) ÷ 2.
Stream Speed Formula
Speed of current/stream (v) = (Downstream Speed − Upstream Speed) ÷ 2.
Relative Speed in Boats
Downstream speed (D) is always greater than Upstream speed (U) because the current aids the rower.

Q59. Answer: (a) Rs. 6000

Shortcut Trick
Ratio of Profit = Ratio of (Investment × Time).
Total Profit = 3600, C share = 1000 => (A+B) share = 2600.
A (7×400 + 5×700) + B (7×900 + 5×600) = 2800 + 3500 + 6300 + 3000 = 15600 units.
Since 2600 profit corresponds to 15600 units, 1000 profit corresponds to (15600 ÷ 2600) × 1000 = 6000 units.
Total Investment of C over 12 months = 6000 units.
Therefore The correct answer is Rs. 6000.
Alternate Method
Given → Initial: A=400, B=900, C=400. Total Profit=3600, C profit=1000.
Formulas: Profit Ratio = (I1×T1) : (I2×T2) : (I3×T3).
Steps:
=> Calculate equivalent investment for A: (400 × 7) + (700 × 5) = 2800 + 3500 = 6300 units.
=> Calculate equivalent investment for B: (900 × 7) + (600 × 5) = 6300 + 3000 = 9300 units.
=> Total units for A and B = 6300 + 9300 = 15600 units.
=> Profit share of (A+B) = Total Profit − C profit = 3600 − 1000 = 2600.
=> Ratio (A+B):C = 2600:1000 = 26:10 = 13:5.
=> 13 parts = 15600 => 1 part = 1200.
=> Total investment of C (for 12 months) = 5 parts × 1200 = 6000 units.
Therefore The correct answer is Rs. 6000.
Additional Information
Partnership Ratios
In a partnership, the profit is divided based on the product of the Capital and the Time for which it was invested.
Active vs Passive Partner
An Active partner manages the business and may receive a salary or commission before the profit is split among all partners.

Q60. Answer: (a) 10

Shortcut Trick
Total items given = 10 + 1 = 11 shirts. Marked Price (MP) of 11 shirts = 11 × 310/9 = 3410/9.
Discount of 10% on 10 shirts bought: Total SP = (MP of 10 shirts) × 90/100 = (10 × 310/9) × 0.9 = 310.
Profit = SP − CP of 11 shirts => 200 = 310 − (11 × CP_(unit)).
11 × CP_(unit) = 310 − 200 = 110.

CP_(unit) = 110 ÷ 11 = 10.

Therefore The correct answer is Rs. 10.

Alternate Method

Given → Marked Price (MP) of 1 shirt = Rs. 310/9, Free items = 1 per 10, Cash Discount = 10%, Total Profit = Rs. 200.

Formulas: Total SP = (MP × Quantity Paid) × (100 − D%)/100 | Total CP = CP_(unit) × Total Quantity | Profit = Total SP − Total CP.

=> Total Selling Price (SP) for 10 shirts = 10 × (310/9) × (90/100) = 310.

=> Total Cost Price (CP) for 11 shirts = Total SP − Profit = 310 − 200 = 110.

=> CP of 1 shirt = Total CP ÷ Total Quantity = 110 ÷ 11 = 10.

Therefore The correct answer is Rs. 10.

Additional Information

Free Item Calculation

When a shopkeeper gives 'x' items free on purchase of 'y' items, the effective discount is [x / (x + y)] × 100.

Profit and Loss on Total Transaction

Profit is always calculated on the total number of items that leave the shop (CP of all items) versus the total money received (SP of paid items).

Q61. Answer: (a) 60

Shortcut Trick

Let breadth of rectangle (and base of triangle) be B.

Area difference: (18 × B) − (1/2 × B × 20) = 96

=> 18B − 10B = 96 => 8B = 96 => B = 12 m.

Perimeter = 2(L + B) = 2(18 + 12) = 60 m.

Therefore The correct answer is 60 m.

Alternate Method

Given:

Length (L) = 18 m, Height (H) = 20 m, Base (b) = Breadth (B).

Formula Used:

Area of Rectangle = L × B | Area of Triangle = 1/2 × b × H

Calculations:

=> Area of Rectangle − Area of Triangle = 96

=> (18 × B) − (1/2 × B × 20) = 96

=> 18B − 10B = 96

=> 8B = 96

=> B = 12 m

=> Perimeter = 2 × (18 + 12)

=> Perimeter = 2 × 30 = 60 m

Therefore The correct answer is 60 m.

Additional Information

Perimeter and Area of Rectangle

Perimeter = 2(l + b) and Area = l × b. Diagonal d = √(l² + b²).

Triangle Area Properties

General Area = 1/2 × base × height. For an equilateral triangle, Area = (√3/4) × side².

Mensuration Conversion

Always ensure all dimensions (length, breadth, height) are in the same unit before calculation.

Q62. Answer: (d) 13/102

Shortcut Trick

Total ways to select 2 cards from 52 = ^(52)C2 = (52 × 51) ÷ 2 = 26 × 51

Favorable ways (1 Spade and 1 Heart) = 13 × 13

Probability = (13 × 13) ÷ (26 × 51) = 13 ÷ (2 × 51) = 13/102

Therefore The correct answer is 13/102.

Alternate Method

Given: Total cards = 52, Spades = 13, Hearts = 13.
Formula: P(E) = n(E) ÷ n(S)
=> Total outcomes n(S) = ^(52)C2 = (52 × 51) ÷ (2 × 1) = 1326
=> Favorable outcomes n(E) = $^{13}C1 \times {}^{13}C1 = 13 \times 13 = 169$
=> Probability = 169 ÷ 1326
=> Dividing both by 13: 13 ÷ 102
Therefore The correct answer is 13/102.
Additional Information
Combinations Formula
The number of ways to select r items from n is given by $^nC_r = n! \div [r!(n-r)!]$.
Standard Deck Composition
A deck has 4 suits: Spades, Hearts, Diamonds, and Clubs, each containing 13 cards.
Probability of Success
P(E) = (Number of favorable outcomes) ÷ (Total number of possible outcomes).

Q63. Answer: (a) 80 grams

Shortcut Trick
Total weight = 150 grams, Weight of third piece = 20 grams.
Remaining weight for first two pieces = 150 − 20 = 130 grams.
Ratio of 1^(st) : 2^(nd) = 8 : 5 → Total units = 13 units.
13 units = 130 grams => 1 unit = 10 grams.
Weight of first piece = 8 units = 8 × 10 = 80 grams.
Therefore The correct answer is 80 g.
Alternate Method
Given:
Total weight = 150 grams
Weight of 3^(rd) piece = 20 grams
Ratio of 1^(st) : 2^(nd) piece = 8 : 5
Calculations:
=> Weight of (1^(st) + 2^(nd)) pieces = Total Weight − 3^(rd) Piece
=> Weight of (1^(st) + 2^(nd)) = 150 − 20 = 130 grams
=> Let the weights be 8x and 5x
=> 8x + 5x = 130
=> 13x = 130
=> x = 10
=> Weight of first piece = 8x = 8 × 10 = 80 grams
Therefore The correct answer is 80 g.
Additional Information
Ratio and Proportion
To divide a quantity Q in ratio a:b, the parts are [a/(a+b)] × Q and [b/(a+b)] × Q.
Weight and Value Relationship
In advanced diamond problems, Value prop. to $(\text{Weight})^2$. If a diamond breaks, the total weight remains conserved but total value decreases.
Unit Conversion
Always ensure units are consistent (e.g., all values in grams) before performing arithmetic operations.

Q64. Answer: (b) 100

Shortcut Trick
Total buckets filled by Ram and Shyam in 1 hour = 10 + 15 = 25 buckets.
Total buckets to fill the cistern = 25 buckets/hour × 8 hours = 200 buckets.
Total capacity of the cistern = 200 buckets × 50 liters/bucket = 10,000 liters.
Total buckets drawn by Anil in 50 hours = 2 buckets/hour × 50 hours = 100 buckets.

Since 100 buckets empty the whole 10,000 liters cistern, Capacity of 1 bucket = 10,000 ÷ 100 = 100 liters.

Therefore The correct answer is 100 liters.

Alternate Method

Given: Capacity of Ram/Shyam's bucket = 50 liters. Ram's rate = 10 buckets/hr. Shyam's rate = 15 buckets/hr. Total time = 8 hrs. Anil's emptying time = 50 hrs. Anil's rate = 2 buckets/hr.

Formula Used: Total Capacity = Rate × Bucket Volume × Time

=> Total buckets filled by both per hour = 10 + 15 = 25 buckets

=> Volume of water filled in 1 hour = 25 × 50 = 1250 liters

=> Total capacity of cistern = 1250 × 8 = 10,000 liters

=> Total buckets used by Anil to empty it = 2 buckets/hr × 50 hr = 100 buckets

=> Capacity of Anil's bucket = 10,000 / 100 = 100 liters

Therefore The correct answer is 100 liters.

Additional Information

Pipes and Cisterns Logic

Total Capacity = Efficiency × Time. For emptying pipes, the work done is considered negative in net flow calculations.

Unitary Method for Capacity

If N buckets of volume V fill a tank, then Capacity = N × V. If the tank is constant, N1V1 = N2V2.

Q65. Answer: (d) 300

Shortcut Trick

Total Pass % = (Pass in Math + Pass in Stats) − Pass in Both

Total Pass % = (68% + 62%) − 40% = 130% − 40% = 90%

Fail % in both = 100% − 90% = 10%

10% of Total Candidates = 30 => Total = 300

Therefore The correct answer is 300 candidates.

Alternate Method

Given:

Passed in Mathematics n(M) = 68%

Passed in Statistics n(S) = 62%

Passed in both subjects n(M ∩ S) = 40%

Number of candidates failed in both = 30

Formula Used:

n(M U S) = n(M) + n(S) − n(M ∩ S)

Calculations:

=> Total Pass % = 68% + 62% − 40%

=> Total Pass % = 90%

=> Total Fail % = 100% − 90% = 10%

=> Let total candidates be X

=> 10% of X = 30

=> (10/100) × X = 30

=> X = 30 × 10 = 300

Therefore The correct answer is 300 candidates.

Additional Information

Venn Diagram Concept

The union of two sets A and B is given by n(A U B) = n(A) + n(B) − n(A ∩ B). This represents individuals belonging to at least one category.

Percentage Base

Total candidates in such problems are always considered as 100%. Failed candidates in both = 100% − (Passed in at least one subject).

Q66. Answer: (a) we

The information given can be represented as follows,

Thus, ‘we’ is coded as ‘ac’.

Q67. Answer: (e) Either 1) or 4)

The information given can be represented as follows,

Hence, ‘strict’ is coded by either 'ea' or 'ae’.

Q68. Answer: (c) the

The information given can be represented as follows,

The code ‘cc’ is for ‘the’.

Q69. Answer: (d) bb ee

The information given can be represented as follows,

From the given options, 'bb ee' is the codes of ‘for efforts’.

Q70. Answer: (c) ca ac cc

The information given can be represented as follows,

'ca ac cc' is the code for ‘we are the’.

Q71. Answer: (b) Only conclusion II follows

Given statements,

S = U ≤ K < W, X < Q < S

On combining, we get:

X < Q < S = U ≤ K < W

Conclusions:

I. U < X → False (X < Q < S = U → X < U i.e. U > X).

II. W > Q → True (Q < S = U ≤ K < W → Q < W i.e. W > Q).

Hence, the correct answer is only conclusion II follows.

Q72. Answer: (c) Only I follows

Given:

Statements: H < Y < U ≥ Q = N > R; S = T ≥ G = V < H

S = T ≥ G = V < H < Y < U ≥ Q = N > R

Conclusions:

I. U > V - True (U > Y > H > V)

II. S ≥ Y - False (S = T ≥ G = V < H < Y, no relation between S and Y)

Hence, the answer is Only I follows.

Q73. Answer: (c) >, >, >

Let us check each option:

1) E > F > M < X; S > M > K; K > Y < B → E > K; relation between S and B can’t be determined.

2) E > F = M < X; S > M > K; K > Y < B → E > K; relation between S and B can’t be determined.

3) E > F > M < X; S > M > K; K > Y > B → E > K; S > B as required.

4) E > F < M < X; S > M < K; K > Y ≥ B → relation between E and K can’t be determined; relation between S and B can’t be determined.

5) E > F < M < X; S > M > K; K > Y = B → relation between E and K can’t be determined; S > B.

Hence, >, >, > are to be placed so that both E > K and S > B hold definitely true.

Q74. Answer: (c) =, <

Putting all the signs step by step in place of & and @ we get:

R ≥ P > T ≥ S > K = L; W ≥ B < S - (R ≥ P > T ≥ S > B ≤ W) - R > W is False

R ≥ P > T < S > K = L; W > B < S - (R ≥ P > T < S > B < W) - R > W is False

R ≥ P > T = S > K = L; W < B < S - (R ≥ P > T = S > B > W) - R > W is True

R ≥ P > T ≤ S > K = L; W > B < S - (R ≥ P > T ≤ S > B < W) - R > W is False

R ≥ P > T ≤ S > K = L; W ≤ B < S - (R ≥ P > T ≤ S > B ≥ W) - R > W is False

Hence, the correct answer is '=, <'.

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Q75. Answer: (a) 6

Given: Ten students are sitting on two parallel benches, student sitting on bench 1 are facing south and students sitting on bench 2 are facing north.

Bench 1: A, B, H, E and J

Bench 2: D, I, C, G and F

1) A is sitting at one of the extreme ends.

2) One student is sitting between A and H.

3) I is sitting to the left to the one who is sitting opposite to H.

4) There is 1 person between I and the one one whose roll number is 7.

5) G and C are immediate neighbours.

6) C is sitting left to the G but do not have roll number 7.

7) Roll number of E is 9.

8) Roll number of F is 5 and is sitting to the right of one who is sitting opposite to E.

9) Sum of roll numbers of A and E is 13.

Roll number of E is 9

→ Roll number of A is 4

10) Sum of roll numbers of A and B is equals to 10.

→ Roll number of B is 6

11) D is sitting opposite to the one whose roll number is 4.

Here, possibility 2 will be cancelled as place opposite to A is already occupied.

12) B is facing the one whose roll number is 3.

13) J has the last roll number.

14) Difference between roll numbers of the people sitting in extreme ends of bench 2 is 3.

Now, we have two possibilities to satisfy this condition:

i) Roll number of D is 2, or

ii) Roll number of D is 8

15) The one with lesser roll number among these two is sitting at the left end of the bench.

Now, we can conclude that, roll number of D must be 2.

16) Sum of roll numbers of the students sitting at bench one is 19 more than the sum of roll numbers of students sitting at bench 2.

So, the above shown arrangement is our final arrangement.

Hence, the roll number of B is 6.

Q76. Answer: (a) D

Given: Ten students are sitting on two parallel benches, student sitting on bench 1 are facing south and students sitting on bench 2 are facing north.

Bench 1: A, B, H, E and J

Bench 2: D, I, C, G and F

1) A is sitting at one of the extreme ends.

2) One student is sitting between A and H.

3) I is sitting to the left to the one who is sitting opposite to H.

4) There is 1 person between I and the one whose roll number is 7.

5) G and C are immediate neighbours.

6) C is sitting left to the G but do not have roll number 7.

7) Roll number of E is 9.

8) Roll number of F is 5 and is sitting to the right of one who is sitting opposite to E.

9) Sum of roll numbers of A and E is 13.

Roll number of E is 9

→ Roll number of A is 4

10) Sum of roll numbers of A and B is equals to 10.

→ Roll number of B is 6

11) D is sitting opposite to the one whose roll number is 4.

Here, possibility 2 will be cancelled as place opposite to A is already occupied.

12) B is facing the one whose roll number is 3.

13) J has the last roll number.

14) Difference between roll numbers of the people sitting in extreme ends of bench 2 is 3.

Now, we have two possibilities to satisfy this condition:

i) Roll number of D is 2, or

ii) Roll number of D is 8

15) The one with lesser roll number among these two is sitting at the left end of the bench.

Now, we can conclude that, roll number of D must be 2.

16) Sum of roll numbers of the students sitting at bench one is 19 more than the sum of roll numbers of students sitting at bench 2.

So, the above shown arrangement is our final arrangement.

Hence, D is sitting at the left corner of the bench 2.

Q77. Answer: (d) A

Given: Ten students are sitting on two parallel benches, student sitting on bench 1 are facing south and students sitting on bench 2 are facing north.

Bench 1: A, B, H, E and J

Bench 2: D, I, C, G and F

1) A is sitting at one of the extreme ends.

2) One student is sitting between A and H.

3) I is sitting to the left to the one who is sitting opposite to H.

4) There is 1 person between I and the one whose roll number is 7.

5) G and C are immediate neighbours.

6) C is sitting left to the G but do not have roll number 7.

7) Roll number of E is 9.

8) Roll number of F is 5 and is sitting to the right of one who is sitting opposite to E.

9) Sum of roll numbers of A and E is 13.

Roll number of E is 9

→ Roll number of A is 4

10) Sum of roll numbers of A and B is equals to 10.

→ Roll number of B is 6

11) D is sitting opposite to the one whose roll number is 4.

Here, possibility 2 will be cancelled as place opposite to A is already occupied.

12) B is facing the one whose roll number is 3.

13) J has the last roll number.

14) Difference between roll numbers of the people sitting in extreme ends of bench 2 is 3.

Now, we have two possibilities to satisfy this condition:

i) Roll number of D is 2, or

ii) Roll number of D is 8

15) The one with lesser roll number among these two is sitting at the left end of the bench.

Now, we can conclude that, roll number of D must be 2.

16) Sum of roll numbers of the students sitting at bench one is 19 more than the sum of roll numbers of students sitting at bench 2.

So, the above shown arrangement is our final arrangement.

Hence, A is sitting opposite to the one who is sitting left to I.

Q78. Answer: (b) 2

Given: Ten students are sitting on two parallel benches, student sitting on bench 1 are facing south and students sitting on bench 2 are facing north.

Bench 1: A, B, H, E and J

Bench 2: D, I, C, G and F

1) A is sitting at one of the extreme ends.

2) One student is sitting between A and H.

3) I is sitting to the left to the one who is sitting opposite to H.

4) There is 1 person between I and the one whose roll number is 7.

5) G and C are immediate neighbours.
6) C is sitting left to the G but do not have roll number 7.
7) Roll number of E is 9.
8) Roll number of F is 5 and is sitting to the right of one who is sitting opposite to E.
9) Sum of roll numbers of A and E is 13.
Roll number of E is 9
→ Roll number of A is 4
10) Sum of roll numbers of A and B is equals to 10.
→ Roll number of B is 6
11) D is sitting opposite to the one whose roll number is 4.
Here, possibility 2 will be cancelled as place opposite to A is already occupied.
12) B is facing the one whose roll number is 3.
13) J has the last roll number.
14) Difference between roll numbers of the people sitting in extreme ends of bench 2 is 3.
Now, we have two possibilities to satisfy this condition:
i) Roll number of D is 2, or
ii) Roll number of D is 8
15) The one with lesser roll number among these two is sitting at the left end of the bench.
Now, we can conclude that, roll number of D must be 2.
16) Sum of roll numbers of the students sitting at bench one is 19 more than the sum of roll numbers of students sitting at bench 2.
So, the above shown arrangement is our final arrangement.
Hence, 2 people are sitting between B and J.

Q79. Answer: (c) H whose roll number is 8 is sitting next to the one having roll number 9.

Given: Ten students are sitting on two parallel benches, student sitting on bench 1 are facing south and students sitting on bench 2 are facing north.
Bench 1: A, B, H, E and J
Bench 2: D, I, C, G and F
1) A is sitting at one of the extreme ends.
2) One student is sitting between A and H.
3) I is sitting to the left to the one who is sitting opposite to H.
4) There is 1 person between I and the one whose roll number is 7.
5) G and C are immediate neighbours.
6) C is sitting left to the G but do not have roll number 7.
7) Roll number of E is 9.
8) Roll number of F is 5 and is sitting to the right of one who is sitting opposite to E.
9) Sum of roll numbers of A and E is 13.
Roll number of E is 9
→ Roll number of A is 4
10) Sum of roll numbers of A and B is equals to 10.
→ Roll number of B is 6
11) D is sitting opposite to the one whose roll number is 4.
Here, possibility 2 will be cancelled as place opposite to A is already occupied.
12) B is facing the one whose roll number is 3.
13) J has the last roll number.
14) Difference between roll numbers of the people sitting in extreme ends of bench 2 is 3.
Now, we have two possibilities to satisfy this condition:
i) Roll number of D is 2, or
ii) Roll number of D is 8
15) The one with lesser roll number among these two is sitting at the left end of the bench.
Now, we can conclude that, roll number of D must be 2.
16) Sum of roll numbers of the students sitting at bench one is 19 more than the sum of roll numbers of students sitting at bench 2.

So, the above shown arrangement is our final arrangement.

Let's check each option one by one.

1) B is sitting next to the right of A.: False(B is sitting left to A.)

2) G is sitting at the centre of the bench facing north direction. : False(G is sitting in the right half of the table, not at the centre)

3) H whose roll number is 8 is sitting next to the one having roll number 9. : True

Hence, Option 3 is the correct one.

Q80. Answer: (b) Sister

Preparing the family tree using the following symbols:

Hence, C is the sister of D.

Q81. Answer: (a) Aunt

Preparing the family tree using the following symbols:

Hence, C is the aunt of H.

Q82. Answer: (a) Grandson

Preparing the family tree using the following symbols:

Hence, H is the grandson of B.

Q83. Answer: (d) 18

A certain number of persons are sitting in a row facing south direction.

1)Two persons sit between A and D. A is in the right of D.

2) One person sits between B and A.

3) B is the fourth person from the right end.

4) H sits second to the left of D, who sits exactly between E and B.

5) Neither A nor H sits at any extreme ends.

6) G sits immediate left of E. Hence Case 1 gets canceled.

7) Number of persons to the left of G is equal to the number of persons to the right of B.

8) F sits at extreme end, which is closest to B.

Therefore, the final arrangement is,

Hence, 18 persons sit in the row.

Q84. Answer: (a) The one who sits second to the left of B?

A certain number of persons are sitting in a row facing south direction.

1)Two persons sit between A and D. A is in the right of D.

2) One person sits between B and A.

3) B is the fourth person from the right end.

4) H sits second to the left of D, who sits exactly between E and B.

5) Neither A nor H sits at any extreme ends.

6) G sits immediate left of E. Hence Case 1 gets canceled.

7) Number of persons to the left of G is equal to the number of persons to the right of B.

8) F sits at extreme end, which is closest to B.

Therefore, the final arrangement is,

Hence, The one who sits second to the left of B sits third to the right of D.

Q85. Answer: (b) Three

A certain number of persons are sitting in a row facing south direction.

1)Two persons sit between A and D. A is in the right of D.

2) One person sits between B and A.

3) B is the fourth person from the right end.

4) H sits second to the left of D, who sits exactly between E and B.

5) Neither A nor H sits at any extreme ends.

6) G sits immediate left of E. Hence Case 1 gets canceled.

7) Number of persons to the left of G is equal to the number of persons to the right of B.

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8) F sits at extreme end, which is closest to B.
Therefore, the final arrangement is,
Hence, Three persons sit to the left of G.

Q86. Answer: (b) Eight

A certain number of persons are sitting in a row facing south direction.
1)Two persons sit between A and D. A is in the right of D.
2) One person sits between B and A.
3) B is the fourth person from the right end.
4) H sits second to the left of D, who sits exactly between E and B.
5) Neither A nor H sits at any extreme ends.
6) G sits immediate left of E. Hence Case 1 gets canceled.
7) Number of persons to the left of G is equal to the number of persons to the right of B.
8) F sits at extreme end, which is closest to B.
Therefore, the final arrangement is,
Hence, Eight persons sit to the right of D.

Q87. Answer: (c) E

A certain number of persons are sitting in a row facing south direction.
1)Two persons sit between A and D. A is in the right of D.
2) One person sits between B and A.
3) B is the fourth person from the right end.
4) H sits second to the left of D, who sits exactly between E and B.
5) Neither A nor H sits at any extreme ends.
6) G sits immediate left of E. Hence Case 1 gets canceled.
7) Number of persons to the left of G is equal to the number of persons to the right of B.
8) F sits at extreme end, which is closest to B.
Therefore, the final arrangement is,
Hence, E sits third to the left of H.

Q88. Answer: (b) 4

Pairs of letters between them in the word (both forward and backward direction) = ST, SW, TW, RY
Hence, there are 4 pairs of letters.

Q89. Answer: (c) 1^(st)

Nine persons Z, X, C, V, B, N, M, K, and L
There are five persons live between C and V. Both C and V live on even number floor.

Floor	Person
9	
8	C/V
7	
6	
5	
4	
3	
2	C/V
1	

M live on even number floor but above 5^(th) floor. Here only one possibility will left that M live on 6th floor.
Two persons live between M and N.
K live one of the floor above N. K may live on 4^(th), 5^(th), 7^(th), or 9^(th) floor.

Floor	Person
9	
8	C/V
7	
6	M
5	
4	
3	N
2	C/V
1	

Z and X are immediate neighbour of each other. C live below N. Two persons live between C and X.

Floor	Person
9	
8	V
7	
6	M
5	X
4	Z
3	N
2	C
1	

L neither lives on top floor nor on bottom floor.

Floor	Person
9	K
8	V
7	L
6	M
5	X
4	Z
3	N
2	C
1	B

Hence B will live on 1^(st) floor

Q90. Answer: (d) None

Nine persons Z, X, C, V, B, N, M, K, and L

There are five persons live between C and V. Both C and V live on even number floor.

Floor	Person
9	
8	C/V

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7	
6	
5	
4	
3	
2	C/V
1	

M live on even number floor but above 5^(th) floor. Here only one possibility will left that M live on 6th floor.

Two persons live between M and N.

K live one of the floor above N. K may live on 4^(th), 5^(th), 7^(th), or 9^(th) floor.

Floor	Person
9	
8	C/V
7	
6	M
5	
4	
3	N
2	C/V
1	

Z and X are immediate neighbour of each other. C live below N. Two persons live between C and X.

Floor	Person
9	
8	V
7	
6	M
5	X
4	Z
3	N
2	C
1	

L neither lives on top floor nor on bottom floor.

Floor	Person
9	K
8	V
7	L
6	M
5	X
4	Z

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3	N
2	C
1	B

Hence no one live between L and V

Q91. Answer: (d) None

Nine persons Z, X, C, V, B, N, M, K, and L

There are five persons live between C and V. Both C and V live on even number floor.

Floor	Person
9	
8	C/V
7	
6	
5	
4	
3	
2	C/V
1	

M live on even number floor but above 5^(th) floor. Here only one possibility will left that M live on 6th floor.

Two persons live between M and N.

K live one of the floor above N. K may live on 4^(th), 5^(th), 7^(th), or 9^(th) floor.

Floor	Person
9	
8	C/V
7	
6	M
5	
4	
3	N
2	C/V
1	

Z and X are immediate neighbour of each other. C live below N. Two persons live between C and X.

Floor	Person
9	
8	V
7	
6	M
5	X
4	Z
3	N

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2	C
1	

L neither lives on top floor nor on bottom floor.

Floor	Person
9	K
8	V
7	L
6	M
5	X
4	Z
3	N
2	C
1	B

Hence none of the position will remain unchanged.

Q92. Answer: (e) B

Nine persons Z, X, C, V, B, N, M, K, and L

There are five persons live between C and V. Both C and V live on even number floor.

Floor	Person
9	
8	C/V
7	
6	
5	
4	
3	
2	C/V
1	

M live on even number floor but above 5^(th) floor. Here only one possibility will left that M live on 6th floor.

Two persons live between M and N.

K live one of the floor above N. K may live on 4^(th), 5^(th), 7^(th), or 9^(th) floor.

Floor	Person
9	
8	C/V
7	
6	M
5	
4	
3	N
2	C/V

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1	

Z and X are immediate neighbour of each other. C live below N. Two persons live between C and X.

Floor	Person
9	
8	V
7	
6	M
5	X
4	Z
3	N
2	C
1	

L neither lives on top floor nor on bottom floor.

Floor	Person
9	K
8	V
7	L
6	M
5	X
4	Z
3	N
2	C
1	B

All live in even number floor except B.

Q93. Answer: (c) X

Nine persons Z, X, C, V, B, N, M, K, and L

There are five persons live between C and V. Both C and V live on even number floor.

Floor	Person
9	
8	C/V
7	
6	
5	
4	
3	
2	C/V
1	

M live on even number floor but above 5^(th) floor. Here only one possibility will left that M live on 6th floor.

Two persons live between M and N.

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K live one of the floor above N. K may live on 4^(th), 5^(th), 7^(th), or 9^(th) floor.

Floor	Person
9	
8	C/V
7	
6	M
5	
4	
3	N
2	C/V
1	

Z and X are immediate neighbour of each other. C live below N. Two persons live between C and X.

Floor	Person
9	
8	V
7	
6	M
5	X
4	Z
3	N
2	C
1	

L neither lives on top floor nor on bottom floor.

Floor	Person
9	K
8	V
7	L
6	M
5	X
4	Z
3	N
2	C
1	B

Hence X live between Z and M.

Q94. Answer: (a) 0

Given number: 256463127.

Digits of a number	2	5	6	4	6	3	1	2	7

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Applying the given rule	-2	+2	-2	-2	-2	+2	+2	-2	+2
New Digits	0	7	4	2	4	5	3	0	9

Fifth digit from the left = 4

Second digit from the right = 0

Therefore, required answer = 4 × 0 = 0

Hence, 0 is the correct answer.

Q95. Answer: (e) X

Give word: 'MAGAZINE'

First, second, third and the eighth letters of the word: M, A, G, E

Meaningful word with these letters: GAME, MEGA, MAGE

Hence, the correct answer is X.

Q96. Answer: (a) K

Ten Employees: J, K, L, M, N, O, P, Q, R and S.

5 Months: April, May, June, July and August.

Two dates: 10^(th) and 15^(th).

1) Only two leaves will be left after M's leave.

So, M will take leave on 15^(th) July.

2) More than four people will take leave between M and S.

So, possible number of people will be 5 or 6.

Case 1

Months	Employee
10^(th) April	
15^(th) April	S
10^(th) May	
15^(th) May	
10^(th) June	
15^(th) June	
10^(th) July	
15^(th) July	M
10^(th) August	
15^(th) August	

Case 2

Months	Employee
10^(th) April	S
15^(th) April	
10^(th) May	
15^(th) May	
10^(th) June	
15^(th) June	
10^(th) July	
15^(th) July	M

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10^(th) August	
15^(th) August	

3) Q will take leave on any day after M.
4) J, P and M will take leave on the same date.
5) P will take leave after J but before M.
6) J and S will not take leave in a same month.
Case 1(a)

Months	Employee
10^(th) April	
15^(th) April	S
10^(th) May	
15^(th) May	J
10^(th) June	
15^(th) June	P
10^(th) July	
15^(th) July	M
10^(th) August	Q
15^(th) August	

Case 1(b)

Months	Employee
10^(th) April	
15^(th) April	S
10^(th) May	
15^(th) May	J
10^(th) June	
15^(th) June	P
10^(th) July	
15^(th) July	M
10^(th) August	
15^(th) August	Q

Case 2(a)

Months	Employee
10^(th) April	S
15^(th) April	
10^(th) May	
15^(th) May	J
10^(th) June	
15^(th) June	P
10^(th) July	

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15^(th) July	M
10^(th) August	Q
15^(th) August	

Case 2(b)

Months	Employee
10^(th) April	S
15^(th) April	
10^(th) May	
15^(th) May	J
10^(th) June	
15^(th) June	P
10^(th) July	
15^(th) July	M
10^(th) August	
15^(th) August	Q

7) L will take leave before J but not in May.

Case 1(a)

Months	Employee
10^(th) April	L
15^(th) April	S
10^(th) May	
15^(th) May	J
10^(th) June	
15^(th) June	P
10^(th) July	
15^(th) July	M
10^(th) August	Q
15^(th) August	

Case 1(b)

Months	Employee
10^(th) April	L
15^(th) April	S
10^(th) May	
15^(th) May	J
10^(th) June	
15^(th) June	P
10^(th) July	
15^(th) July	M
10^(th) August	

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15^(th) August	Q

Case 2(a)

Months	Employee
10^(th) April	S
15^(th) April	L
10^(th) May	
15^(th) May	J
10^(th) June	
15^(th) June	P
10^(th) July	
15^(th) July	M
10^(th) August	Q
15^(th) August	

Case 2(b)

Months	Employee
10^(th) April	S
15^(th) April	L
10^(th) May	
15^(th) May	J
10^(th) June	
15^(th) June	P
10^(th) July	
15^(th) July	M
10^(th) August	
15^(th) August	Q

8) Maximum two people will take leave between L and R.

So, possible number of people between L and R are 0, 1 and 2.

We will use this condition in the end.

9) Three people will take leave between K and P.

This condition doesn't satisfy in case 1(b) and case 2(b). So, these cases get eliminated.

Case 1(a)

Months	Employee
10^(th) April	L
15^(th) April	S
10^(th) May	
15^(th) May	J
10^(th) June	
15^(th) June	P
10^(th) July	
15^(th) July	M

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10^(th) August	Q
15^(th) August	K

Case 2(a)

Months	Employee
10^(th) April	S
15^(th) April	L
10^(th) May	
15^(th) May	J
10^(th) June	
15^(th) June	P
10^(th) July	
15^(th) July	M
10^(th) August	Q
15^(th) August	K

10) N will take leave after O but neither of them will take leave in June.

Case 1(a)

Months	Employee
10^(th) April	L
15^(th) April	S
10^(th) May	O
15^(th) May	J
10^(th) June	
15^(th) June	P
10^(th) July	N
15^(th) July	M
10^(th) August	Q
15^(th) August	K

Case 2(a)

Months	Employee
10^(th) April	S
15^(th) April	L
10^(th) May	O
15^(th) May	J
10^(th) June	
15^(th) June	P
10^(th) July	N
15^(th) July	M
10^(th) August	Q
15^(th) August	K

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Now, as per condition number 8, case 1(a) gets eliminated. Thus, we have the final arrangement as follows:

Months	Employee
10^(th) April	S
15^(th) April	L
10^(th) May	O
15^(th) May	J
10^(th) June	R
15^(th) June	P
10^(th) July	N
15^(th) July	M
10^(th) August	Q
15^(th) August	K

Hence, K will take leave in the last.

Q97. Answer: (c) Six

Ten Employees: J, K, L, M, N, O, P, Q, R and S.

5 Months: April, May, June, July and August.

Two dates: 10^(th) and 15^(th).

1) Only two leaves will be left after M's leave.

So, M will take leave on 15^(th) July.

2) More than four people will take leave between M and S.

So, possible number of people will be 5 or 6.

Case 1

Months	Employee
10^(th) April	
15^(th) April	S
10^(th) May	
15^(th) May	
10^(th) June	
15^(th) June	
10^(th) July	
15^(th) July	M
10^(th) August	
15^(th) August	

Case 2

Months	Employee
10^(th) April	S
15^(th) April	
10^(th) May	
15^(th) May	
10^(th) June	
15^(th) June	

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10^(th) July	
15^(th) July	M
10^(th) August	
15^(th) August	

3) Q will take leave on any day after M.
4) J, P and M will take leave on the same date.
5) P will take leave after J but before M.
6) J and S will not take leave in a same month.

Case 1(a)

Months	Employee
10^(th) April	
15^(th) April	S
10^(th) May	
15^(th) May	J
10^(th) June	
15^(th) June	P
10^(th) July	
15^(th) July	M
10^(th) August	Q
15^(th) August	

Case 1(b)

Months	Employee
10^(th) April	
15^(th) April	S
10^(th) May	
15^(th) May	J
10^(th) June	
15^(th) June	P
10^(th) July	
15^(th) July	M
10^(th) August	
15^(th) August	Q

Case 2(a)

Months	Employee
10^(th) April	S
15^(th) April	
10^(th) May	
15^(th) May	J
10^(th) June	

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15^(th) June	P
10^(th) July	
15^(th) July	M
10^(th) August	Q
15^(th) August	

Case 2(b)

Months	Employee
10^(th) April	S
15^(th) April	
10^(th) May	
15^(th) May	J
10^(th) June	
15^(th) June	P
10^(th) July	
15^(th) July	M
10^(th) August	
15^(th) August	Q

7) L will take leave before J but not in May.

Case 1(a)

Months	Employee
10^(th) April	L
15^(th) April	S
10^(th) May	
15^(th) May	J
10^(th) June	
15^(th) June	P
10^(th) July	
15^(th) July	M
10^(th) August	Q
15^(th) August	

Case 1(b)

Months	Employee
10^(th) April	L
15^(th) April	S
10^(th) May	
15^(th) May	J
10^(th) June	
15^(th) June	P
10^(th) July	

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15^(th) July	M
10^(th) August	
15^(th) August	Q

Case 2(a)

Months	Employee
10^(th) April	S
15^(th) April	L
10^(th) May	
15^(th) May	J
10^(th) June	
15^(th) June	P
10^(th) July	
15^(th) July	M
10^(th) August	Q
15^(th) August	

Case 2(b)

Months	Employee
10^(th) April	S
15^(th) April	L
10^(th) May	
15^(th) May	J
10^(th) June	
15^(th) June	P
10^(th) July	
15^(th) July	M
10^(th) August	
15^(th) August	Q

8) Maximum two people will take leave between L and R.

So, possible number of people between L and R are 0, 1 and 2.

We will use this condition in the end.

9) Three people will take leave between K and P.

This condition doesn't satisfy in case 1(b) and case 2(b). So, these cases get eliminated.

Case 1(a)

Months	Employee
10^(th) April	L
15^(th) April	S
10^(th) May	
15^(th) May	J
10^(th) June	
15^(th) June	P

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10^(th) July	
15^(th) July	M
10^(th) August	Q
15^(th) August	K

Case 2(a)

Months	Employee
10^(th) April	S
15^(th) April	L
10^(th) May	
15^(th) May	J
10^(th) June	
15^(th) June	P
10^(th) July	
15^(th) July	M
10^(th) August	Q
15^(th) August	K

10) N will take leave after O but neither of them will take leave in June.

Case 1(a)

Months	Employee
10^(th) April	L
15^(th) April	S
10^(th) May	O
15^(th) May	J
10^(th) June	
15^(th) June	P
10^(th) July	N
15^(th) July	M
10^(th) August	Q
15^(th) August	K

Case 2(a)

Months	Employee
10^(th) April	S
15^(th) April	L
10^(th) May	O
15^(th) May	J
10^(th) June	
15^(th) June	P
10^(th) July	N
15^(th) July	M

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10^(th) August	Q
15^(th) August	K

Now, as per condition number 8, case 1(a) gets eliminated. Thus, we have the final arrangement as follows:

Months	Employee
10^(th) April	S
15^(th) April	L
10^(th) May	O
15^(th) May	J
10^(th) June	R
15^(th) June	P
10^(th) July	N
15^(th) July	M
10^(th) August	Q
15^(th) August	K

Hence, six people will take leave before N.

Q98. Answer: (a) L

Ten Employees: J, K, L, M, N, O, P, Q, R and S.

5 Months: April, May, June, July and August.

Two dates: 10^(th) and 15^(th).

1) Only two leaves will be left after M's leave.

So, M will take leave on 15^(th) July.

2) More than four people will take leave between M and S.

So, possible number of people will be 5 or 6.

Case 1

Months	Employee
10^(th) April	
15^(th) April	S
10^(th) May	
15^(th) May	
10^(th) June	
15^(th) June	
10^(th) July	
15^(th) July	M
10^(th) August	
15^(th) August	

Case 2

Months	Employee
10^(th) April	S
15^(th) April	
10^(th) May	

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15^(th) May	
10^(th) June	
15^(th) June	
10^(th) July	
15^(th) July	M
10^(th) August	
15^(th) August	

3) Q will take leave on any day after M.
4) J, P and M will take leave on the same date.
5) P will take leave after J but before M.
6) J and S will not take leave in a same month.

Case 1(a)

Months	Employee
10^(th) April	
15^(th) April	S
10^(th) May	
15^(th) May	J
10^(th) June	
15^(th) June	P
10^(th) July	
15^(th) July	M
10^(th) August	Q
15^(th) August	

Case 1(b)

Months	Employee
10^(th) April	
15^(th) April	S
10^(th) May	
15^(th) May	J
10^(th) June	
15^(th) June	P
10^(th) July	
15^(th) July	M
10^(th) August	
15^(th) August	Q

Case 2(a)

Months	Employee
10^(th) April	S
15^(th) April	

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10^(th) May	
15^(th) May	J
10^(th) June	
15^(th) June	P
10^(th) July	
15^(th) July	M
10^(th) August	Q
15^(th) August	

Case 2(b)

Months	Employee
10^(th) April	S
15^(th) April	
10^(th) May	
15^(th) May	J
10^(th) June	
15^(th) June	P
10^(th) July	
15^(th) July	M
10^(th) August	
15^(th) August	Q

7) L will take leave before J but not in May.

Case 1(a)

Months	Employee
10^(th) April	L
15^(th) April	S
10^(th) May	
15^(th) May	J
10^(th) June	
15^(th) June	P
10^(th) July	
15^(th) July	M
10^(th) August	Q
15^(th) August	

Case 1(b)

Months	Employee
10^(th) April	L
15^(th) April	S
10^(th) May	
15^(th) May	J

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10^(th) June	
15^(th) June	P
10^(th) July	
15^(th) July	M
10^(th) August	
15^(th) August	Q

Case 2(a)

Months	Employee
10^(th) April	S
15^(th) April	L
10^(th) May	
15^(th) May	J
10^(th) June	
15^(th) June	P
10^(th) July	
15^(th) July	M
10^(th) August	Q
15^(th) August	

Case 2(b)

Months	Employee
10^(th) April	S
15^(th) April	L
10^(th) May	
15^(th) May	J
10^(th) June	
15^(th) June	P
10^(th) July	
15^(th) July	M
10^(th) August	
15^(th) August	Q

8) Maximum two people will take leave between L and R.

So, possible number of people between L and R are 0, 1 and 2.

We will use this condition in the end.

9) Three people will take leave between K and P.

This condition doesn't satisfy in case 1(b) and case 2(b). So, these cases get eliminated.

Case 1(a)

Months	Employee
10^(th) April	L
15^(th) April	S
10^(th) May	

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15^(th) May	J
10^(th) June	
15^(th) June	P
10^(th) July	
15^(th) July	M
10^(th) August	Q
15^(th) August	K

Case 2(a)

Months	Employee
10^(th) April	S
15^(th) April	L
10^(th) May	
15^(th) May	J
10^(th) June	
15^(th) June	P
10^(th) July	
15^(th) July	M
10^(th) August	Q
15^(th) August	K

10) N will take leave after O but neither of them will take leave in June.

Case 1(a)

Months	Employee
10^(th) April	L
15^(th) April	S
10^(th) May	O
15^(th) May	J
10^(th) June	
15^(th) June	P
10^(th) July	N
15^(th) July	M
10^(th) August	Q
15^(th) August	K

Case 2(a)

Months	Employee
10^(th) April	S
15^(th) April	L
10^(th) May	O
15^(th) May	J
10^(th) June	

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15^(th) June	P
10^(th) July	N
15^(th) July	M
10^(th) August	Q
15^(th) August	K

Now, as per condition number 8, case 1(a) gets eliminated. Thus, we have the final arrangement as follows:

Months	Employee
10^(th) April	S
15^(th) April	L
10^(th) May	O
15^(th) May	J
10^(th) June	R
15^(th) June	P
10^(th) July	N
15^(th) July	M
10^(th) August	Q
15^(th) August	K

O, Q, R and S will take leave on 10^(th) of a month while L will take leave on 15^(th).

Hence, L is the odd one.

Q99. Answer: (d) P, 15^(th) June

Ten Employees: J, K, L, M, N, O, P, Q, R and S.

5 Months: April, May, June, July and August.

Two dates: 10^(th) and 15^(th).

1) Only two leaves will be left after M's leave.

So, M will take leave on 15^(th) July.

2) More than four people will take leave between M and S.

So, possible number of people will be 5 or 6.

Case 1

Months	Employee
10^(th) April	
15^(th) April	S
10^(th) May	
15^(th) May	
10^(th) June	
15^(th) June	
10^(th) July	
15^(th) July	M
10^(th) August	
15^(th) August	

Case 2

Months	Employee

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10^(th) April	S
15^(th) April	
10^(th) May	
15^(th) May	
10^(th) June	
15^(th) June	
10^(th) July	
15^(th) July	M
10^(th) August	
15^(th) August	

3) Q will take leave on any day after M.
4) J, P and M will take leave on the same date.
5) P will take leave after J but before M.
6) J and S will not take leave in a same month.
Case 1(a)

Months	Employee
10^(th) April	
15^(th) April	S
10^(th) May	
15^(th) May	J
10^(th) June	
15^(th) June	P
10^(th) July	
15^(th) July	M
10^(th) August	Q
15^(th) August	

Case 1(b)

Months	Employee
10^(th) April	
15^(th) April	S
10^(th) May	
15^(th) May	J
10^(th) June	
15^(th) June	P
10^(th) July	
15^(th) July	M
10^(th) August	
15^(th) August	Q

Case 2(a)

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Months	Employee
10^(th) April	S
15^(th) April	
10^(th) May	
15^(th) May	J
10^(th) June	
15^(th) June	P
10^(th) July	
15^(th) July	M
10^(th) August	Q
15^(th) August	

Case 2(b)

Months	Employee
10^(th) April	S
15^(th) April	
10^(th) May	
15^(th) May	J
10^(th) June	
15^(th) June	P
10^(th) July	
15^(th) July	M
10^(th) August	
15^(th) August	Q

7) L will take leave before J but not in May.

Case 1(a)

Months	Employee
10^(th) April	L
15^(th) April	S
10^(th) May	
15^(th) May	J
10^(th) June	
15^(th) June	P
10^(th) July	
15^(th) July	M
10^(th) August	Q
15^(th) August	

Case 1(b)

Months	Employee
10^(th) April	L

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15^(th) April	S
10^(th) May	
15^(th) May	J
10^(th) June	
15^(th) June	P
10^(th) July	
15^(th) July	M
10^(th) August	
15^(th) August	Q

Case 2(a)

Months	Employee
10^(th) April	S
15^(th) April	L
10^(th) May	
15^(th) May	J
10^(th) June	
15^(th) June	P
10^(th) July	
15^(th) July	M
10^(th) August	Q
15^(th) August	

Case 2(b)

Months	Employee
10^(th) April	S
15^(th) April	L
10^(th) May	
15^(th) May	J
10^(th) June	
15^(th) June	P
10^(th) July	
15^(th) July	M
10^(th) August	
15^(th) August	Q

8) Maximum two people will take leave between L and R.

So, possible number of people between L and R are 0, 1 and 2.

We will use this condition in the end.

9) Three people will take leave between K and P.

This condition doesn't satisfy in case 1(b) and case 2(b). So, these cases get eliminated.

Case 1(a)

Months	Employee

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10^(th) April	L
15^(th) April	S
10^(th) May	
15^(th) May	J
10^(th) June	
15^(th) June	P
10^(th) July	
15^(th) July	M
10^(th) August	Q
15^(th) August	K

Case 2(a)

Months	Employee
10^(th) April	S
15^(th) April	L
10^(th) May	
15^(th) May	J
10^(th) June	
15^(th) June	P
10^(th) July	
15^(th) July	M
10^(th) August	Q
15^(th) August	K

10) N will take leave after O but neither of them will take leave in June.

Case 1(a)

Months	Employee
10^(th) April	L
15^(th) April	S
10^(th) May	O
15^(th) May	J
10^(th) June	
15^(th) June	P
10^(th) July	N
15^(th) July	M
10^(th) August	Q
15^(th) August	K

Case 2(a)

Months	Employee
10^(th) April	S
15^(th) April	L

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10^(th) May	O
15^(th) May	J
10^(th) June	
15^(th) June	P
10^(th) July	N
15^(th) July	M
10^(th) August	Q
15^(th) August	K

Now, as per condition number 8, case 1(a) gets eliminated. Thus, we have the final arrangement as follows:

Months	Employee
10^(th) April	S
15^(th) April	L
10^(th) May	O
15^(th) May	J
10^(th) June	R
15^(th) June	P
10^(th) July	N
15^(th) July	M
10^(th) August	Q
15^(th) August	K

Hence, the correct combination is ‘P, 15^(th) June’.

Q100. Answer: (c) Three

Ten Employees: J, K, L, M, N, O, P, Q, R and S.

5 Months: April, May, June, July and August.

Two dates: 10th and 15th.

1) Only two leaves will be left after M’s leave.

So, M will take leave on 15th July.

2) More than four people will take leave between M and S.

So, possible number of people will be 5 or 6.

Case 1

Months	Employee
10th April	
15th April	S
10th May	
15th May	
10th June	
15th June	
10th July	
15th July	M
10th August	

15th August	

Case 2

Months	Employee
10th April	S
15th April	
10th May	
15th May	
10th June	
15th June	
10th July	
15th July	M
10th August	
15th August	

3) Q will take leave on any day after M.
4) J, P and M will take leave on the same date.
5) P will take leave after J but before M.
6) J and S will not take leave in a same month.

Case 1(a)

Months	Employee
10th April	
15th April	S
10th May	
15th May	J
10th June	
15th June	P
10th July	
15th July	M
10th August	Q
15th August	

Case 1(b)

Months	Employee
10th April	
15th April	S
10th May	
15th May	J
10th June	
15th June	P
10th July	
15th July	M

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10th August	
15th August	Q

Case 2(a)

Months	Employee
10th April	S
15th April	
10th May	
15th May	J
10th June	
15th June	P
10th July	
15th July	M
10th August	Q
15th August	

Case 2(b)

Months	Employee
10th April	S
15th April	
10th May	
15th May	J
10th June	
15th June	P
10th July	
15th July	M
10th August	
15th August	Q

7) L will take leave before J but not in May.

Case 1(a)

Months	Employee
10th April	L
15th April	S
10th May	
15th May	J
10th June	
15th June	P
10th July	
15th July	M
10th August	Q
15th August	

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Case 1(b)

Months	Employee
10th April	L
15th April	S
10th May	
15th May	J
10th June	
15th June	P
10th July	
15th July	M
10th August	
15th August	Q

Case 2(a)

Months	Employee
10th April	S
15th April	L
10th May	
15th May	J
10th June	
15th June	P
10th July	
15th July	M
10th August	Q
15th August	

Case 2(b)

Months	Employee
10th April	S
15th April	L
10th May	
15th May	J
10th June	
15th June	P
10th July	
15th July	M
10th August	
15th August	Q

8) Maximum two people will take leave between L and R.

So, possible number of people between L and R are 0, 1 and 2.

We will use this condition in the end.

9) Three people will take leave between K and P.

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This condition doesn't satisfy in case 1(b) and case 2(b). So, these cases get eliminated.

Case 1(a)

Months	Employee
10th April	L
15th April	S
10th May	
15th May	J
10th June	
15th June	P
10th July	
15th July	M
10th August	Q
15th August	K

Case 2(a)

Months	Employee
10th April	S
15th April	L
10th May	
15th May	J
10th June	
15th June	P
10th July	
15th July	M
10th August	Q
15th August	K

10) N will take leave after O but neither of them will take leave in June.

Case 1(a)

Months	Employee
10th April	L
15th April	S
10th May	O
15th May	J
10th June	
15th June	P
10th July	N
15th July	M
10th August	Q
15th August	K

Case 2(a)

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Months	Employee
10th April	S
15th April	L
10th May	O
15th May	J
10th June	
15th June	P
10th July	N
15th July	M
10th August	Q
15th August	K

Now, as per condition number 8, case 1(a) gets eliminated. Thus, we have the final arrangement as follows:

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10th April	S
15th April	L
10th May	O
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10th June	R
15th June	P
10th July	N
15th July	M
10th August	Q
15th August	K

Hence, three people will take leave between L and P

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