# IBPS PO Mains Previous Year Paper 2023

**Directions (1-4): Read the given information carefully and answer the questions based on it:**
There is a matrix contains 4 rows (I, II, III and IV) top to bottom and 4 columns (I, II, III and IV) left to right. Meaningful Word will be formed only when we go left to right in row and top to bottom in column.
**Condition:**
• No letters are repeated more than twice.
• Alphabets are coded as A-1, B-2, C-3, D-4, E-5, F-1, G-2, H-3, I-4…………. Y-5, Z-1.
• Place value of column and row are added to get cell value of particular row or column.
• If a column/row has one letter then the entire column/row should not have that letter. For ex- if row 1 and column 1 has 'M' letter then that letter should not be repeated in entire row 1 and column 1.
**4 letter meaningful word has to be formed in each column:**
**In column I:** I, II, IV positions contain letter V, A, T respectively.
**In column II:** III, IV positions contain letter H, O respectively.
**In column III:** II position contain letter R.
**In column IV:** I, III, IV position contain letter N, T, S respectively.

**Q1. Which alphabet will come in (III, III) to make the meaningful word of row III and column III?**
(a) U
(b) I
(c) O
(d) R
(e) None of the above

**Q2. What is the difference between the total value of column III and total value of row 1?**
(a) 1
(b) 3
(c) 4
(d) 2
(e) None of the above

**Q3. Which meaningful word is formed in column III?**
(a) AREA
(b) None of these
(c) DRUM
(d) CRUX
(e) IRON

**Q4. What is the sum of the positional value of the letter in (I, IV) and (III, II), where the bracket represents (row, column)?**
(a) 6
(b) 8
(c) 5
(d) 7
(e) None of the above

**Directions (5-5): The question below, consist of a question and three statements numbered as I, II and III given below it. You have to decide whether the data given in the statements are sufficient to answer the question or not. Read all statements and choose the most appropriate option.**

**Q5. What is the code of town?**
I. "town is clean" is coded as "mp wy hz", "small area city" is coded as "rt mh ap" and "town is good" is coded as "hz aw wy"
II. "town is authentic" is coded as "wy ap hz", "every city worth" is coded as "mt rt ng" and "no best city" is coded as "ax nr rt"
III. "town is best" is coded as "wy nf hz", "best small city" is coded as "rt sk ax" and "level in city" is coded as "wr rt uc"
(a) If data in statement I alone is sufficient
(b) If data in statement III alone is sufficient
(c) If data either in statement I alone or in statement III alone is sufficient
(d) If data in all statements i.e., I, II and III even together is not sufficient
(e) If data in all statements i.e., I, II and III together is sufficient

**Directions (6-9): Study the following information carefully and answer the questions given below:**
Twelve persons live in a five-floor building such that the bottommost floor is numbered as 1, the floor just above it is numbered as 2 and so on till the topmost floor is numbered as 5. Each floor has four flats – J, K, L and M from west to east respectively. Flat K is to the east of flat J and to the west of flat L which is to the west of flat M. 8 flats are vacant.
**Note: 1)** At least two but not more than three persons live on each floor. The adjacent flats are not vacant. Adjacent flats are immediate left, immediate right, immediately above and immediately below.
**2)** If it is given that A lives immediately above/immediately below B's flat then either a vacant flat is between A and B or there is no vacant flat (no floor) between A and B.
U lives on an even number floor below the 3rd floor. W lives to the east of U but neither in flat K nor in flat M. Only one floor gap is between W and P who lives to the west of S but not just west. U and P live in different named flats. R lives above S and adjacent to one of the vacant flats. R and W live in different named flats. O lives to the west of R and east of V. Q lives immediately below O's flat. T lives to the east of Q. Only one floor gap between T and Y. T lives immediately above Y's flat. Z lives just northwest of X.

**Q6. In which among the following flats minimum persons live?**
(a) Flat J
(b) Flat K
(c) Flat L
(d) Flat M
(e) Either flat K or flat L

**Q7. Who among the following lives in flat M on floor 3?**
(a) R
(b) T
(c) Z
(d) Y
(e) X

**Q8. Which among the following statements is not true?**
(a) Z and P live in the same named flat
(b) Only one flat is vacant on floor 2
(c) P lives on an even-numbered floor
(d) On floor 2, even number of persons live
(e) None is true

**Q9. Four of the following five are alike in a certain way and thus form a group, then who among the following doesn't belong to that group?**
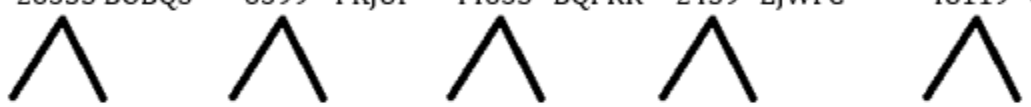(a) O
(b) Q
(c) U
(d) X
(e) P

**Q10. If we use the following alphabets from the words which are given in the options below: first vowel from the left end in the first word, the consonant which has the highest place value in the second word, the consonant which is second from the right end in the third word and immediately preceding consonant (in the fourth word) of the second vowel from the left end. Then which of the following options does not give a meaningful word?**
(a) Fire, Hand, Port, Atom
(b) Read, Song, City, Hope
(c) Open, Work, Wind, Time
(d) Hear, Star, Fish, Life
(e) None of these

**Directions (11-14):** A word and number arrangement machine when given an input line of numbers and words rearranges them following a particular rule in each step. The following is an illustration of input and rearrangement:

Input: 5247 CROSS 3827 PRANK 8425 APART 2843 FIXED 9832 OLIVE
Step I: 25356 APART 9936 OLIVE 64534 CROSS 4952 FIXED 81941 PRANK
Step II: 26355 BOBQS 6399 PKJUF 44635 BQPRR 2459 EJWFC 48119 OQBMJ



Step III: 8 13 QS 6 21 PKJF 14 8 BQP 6 14 JWFC 12 11 QBMJ
Step IV: 161 QS 435 FJKP 50 BPQ 190 CFJW 109 BJMQ
Step V: 164 438 54 194 112
Step V is the last step of the given arrangement. Based on this logic, rearrange the given input.

Input: 8548 UNITY 4369 FRAME 3657 EVENT 5378 SPOIL 6878 PLANK

**Q11. Which among the following statement(s) is/are correct?**
I. Three words start with the letter which comes after "M" in alphabetical series in step III
II. More than two odd numbers are found in step V
III. More than two even numbers are found in Step IV

(a) Both I and II
(b) Both II and III
(c) Both I and III
(d) Only I
(e) All I, II and III

**Q12. What is the difference between the third-highest number in Step II and the third-lowest number in Step IV?**
(a) 46540
(b) 46527
(c) 46590
(d) 46630
(e) 46780

**Q13. What is the sum of the numbers found in step V?**
(a) 898
(b) 768
(c) 548
(d) 914
(e) 998

**Q14. Which among the following element is third to the left of the element which is fourth from the right end in step III?**
(a) QBLF
(b) 14
(c) VMJSX
(d) 12
(e) MS

**Directions (15-18): Study the following information carefully and answer the questions given below:**

Thirteen boxes are kept in two stacks i.e., Stack 1 and Stack 2 where Stack 1 is in west of Stack 2. Each stack has seven shelves and one box is placed in each shelf. Stack 1 contains more boxes than Stack 2. Different numbers are printed on each of the boxes. If a box is kept between two boxes, then these boxes are kept in the same stack, unless stated otherwise. If a box is immediately above or below another box then they are in the same stack unless stated otherwise. One of the shelves is vacant in any of the stack. Adjacent shelf means just above, just below shelf of same stack and immediate left/right shelf of another stack.

Box M is kept two shelves above the box which has number 51 on it. More than one odd number of boxes are kept below the box which has number 51 on it. Box M and the box which has number 21 on it is not kept in the topmost shelf. Two boxes are kept between Box L and the box which has the number 11 on it. Box M and Box L are kept in the adjacent shelf of different stacks. Box O's shelf is below box M's shelf and above the shelf of the box which has number 11 on it. Two boxes are kept between Box O and the box which has number 21 on it (no vacant shelf between them). Box M and Box O are not kept in the same stack. Box O and Box X do not have number 51 and number 21 on it respectively. Two boxes are kept between Box X and the box which has number 27 on it (no vacant shelf between them). Box M and the box which has number 27 on it, are neither kept in the adjacent shelf nor in the same shelf. Neither the topmost shelf is

vacant nor the shelf just below box O is vacant. Box X and the box which has number 21 on it are not kept in the adjacent shelf of Box L. Neither Box X and Box M are kept in the adjacent shelf nor the box which has number 27 on it is kept in the topmost shelf. The box which has number 58 on it is kept just above Box U and these boxes are kept below box M. Box U neither has number 11 on it nor it is placed in the adjacent shelf of Box O. Box U is kept below Box L (in different stack) but not on the bottommost shelf. One box is kept between Box T and Box Y. Box X and Box T are not kept in the adjacent shelf but kept in the same stack. Box U neither have number 51 on it nor it is kept just above Box X. Box T is neither kept in the topmost shelf nor has number 21 on it. Two boxes are kept between the Box Q and the box which has number 33 on it. Box L and Box O don't have the number of multiple of 3 on it. Box Q is not placed just above Box X. Box Q is placed below the vacant shelf in same stack but not just below. Box R is kept below Box N but not just below. Box N and Box T are not placed in the same stack. One box is placed between Box R and the box which has number 29 on it. The box which has number 29 on it is neither kept in the east of Box Y nor below box Y. The number on Box L is two more than the number on Box R. The number on Box U is 5 less than the number on Box T. One box is placed between the box which has number 17 on it and Box C. One box is kept between the Box S and the box which has number 38 on it. Box C and Box R are not placed in the same stack. Box C is not placed in the topmost shelf. One Box is placed between the Box A and the box which has number 39 on it. The number on Box M is 8 more than the number on Box C.

**Q15. How many boxes are kept above box M in the same stack?**
(a) Two
(b) One
(c) Three
(d) Four
(e) None of these

**Q16. Which of the following numbers is printed on Box X?**
(a) 51
(b) 58
(c) 39
(d) 27
(e) None of these

**Q17. How many boxes are kept between Box T and Box C?**
(a) Two
(b) Four
(c) Three
(d) One
(e) None of these

**Q18. What is the sum of the numbers printed on Box Y and Box L?**
(a) 70
(b) 72
(c) 71
(d) 75
(e) None of these

**Directions (19-20): Amid mounting pressure over the Centre to postpone the CBSE Board exams scheduled for next month, Prime Minister will hold a meeting with Education Minister and other important officials at 12 pm to discuss the issue. The government is likely to consider postponing the exams as Covid-19 cases continue to rise across states. Several state governments and Opposition leaders such as Arvind Kejriwal and Rahul Gandhi have been appealing to the Centre to postpone board exams.**

**Q19. Which of the following substantiates the demand raised by Opposition leaders?**
(I) Several crowded markets in many states have been closed after Covid-19 guidelines.
(II) Many state governments have postponed the state board exams for X and XII classes as cases of Covid-19 continue to rise.
(III) Cases has been rising but elections in many states are conducted.
(a) Only II and III
(b) Only III
(c) Only I and II
(d) Only I and III
(e) All of three

**Q20. Which of the following can be inferred from the above statement?**
(I) Arvind Kejriwal is considered as opposition leader for central government.
(II) If Board exam will be conducted, it may act as catalyst in rising number of cases for Covid-19.
(III) Only Central government has the right to postpone state government exam.
(a) Only III
(b) Only II and III
(c) Only I and II
(d) Only II
(e) None of them

**Directions (21-24): Study the following information carefully and answer the questions given below-**
Ten persons A, B, C, D, E, F, G, H, I and J sit in two rectangular tables X and Y. Three of them like horror novel, three likes thriller and four of them likes romance novel.
Four persons sit in table X and remaining sits in table Y. The person sits in middle faces outside the centre and the person sit in corner face inside the centre. Persons sits in table X sit in middle and in Table Y four seats are placed in middle and four seats are placed in the corner. Two seats are vacant in Table Y.
D sits in table X. J does not sit in table Y. G sits immediate left of J and neither of them like thriller. The one who likes romance does not sit in the middle of table Y. D likes romance and sits opposite to G. E likes romance and sit on table Y. Both the immediate neighbours of E like thriller. More than three seats between the persons who likes thriller. A sits immediate left of the one who likes thriller. F sits third to the left of A. C sits in table X. Two persons sits between D and J. B does not like thriller and romance. Two persons sit between D and the one who likes thriller. The persons who likes thriller does not sit in the corner. I sits 2nd to the left of a vacant seat. Both the vacant seats are not adjacent two each other. The one who likes horror sits immediate right of the one who likes romance in table Y. A doesn't like Horror.

**Q21. If J and H change their novels then who sits 3ʳᵈ to the left of the one who sits immediate right of B?**
(a) The person who likes Thriller novel
(b) The person who likes Romance novel
(c) The person who likes Horror
(d) The person who likes either horror or thriller novel
(e) Can't be determined

**Q22. Which of the following statements is true?**
(a) G sits in the corner of Table X.
(b) E sits immediate left of the one who likes horror novels.
(c) B likes romance novels.
(d) I sits immediate right of F.
(e) F sits in the middle of Table Y.

**Q23. Four of the following five are alike in a certain way and hence form a group. Who among the following does not belong to that group?**
(a) H
(b) J
(c) I
(d) F
(e) C

**Q24. Which among the following pair of persons sits near to the vacant seats in Table Y?**
(a) H and G
(b) F and I
(c) I and C
(d) C and H
(e) F and H
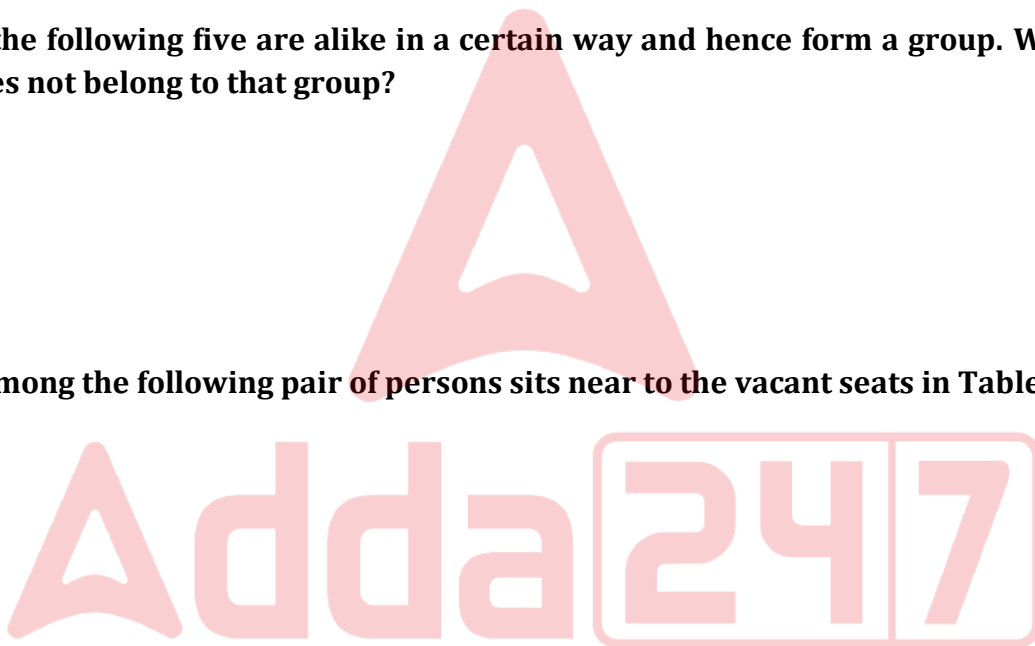
**Directions (25-27): In one of the historical reforms of the economy of India, Rs 500 and Rs 1,000 notes were banned. This was one of the boldest movements by the Government of India announced over a 40-minute speech. Most of the industry and commoners alike reacted to this decision to curb corruption with overwhelming support. Whereas some sections are of the opinion that it is a draconian scheme causing hardships to people. A recent study had pegged India's black-market economy at over Rs 30 lakh crore or about 20 percent of total GDP. This is even bigger than the GDP of countries like Thailand and Argentina.**

**Q25. Rather getting support from most of the industry, what would have been the reason that some of them declared it as a draconian scheme?**
(I) It was declared without giving time to people to withdraw ample cash for their use.
(II) It had caused certain hardships in daily activities.
(III) It stopped the earning of black money for majority of the people.

(a) Only II and III
(b) Only III
(c) Only I and II
(d) Only I and III
(e) All of three

**Q26. Which of the following can be assumed from the above statement?**
(I) After this historical decision, corruption rate would have been gone down in India.
(II) India is ranked among top 5 big economic country.
(III) Many of the countrymen wanted to corruption and black marketing should be reduced.
(a) Only I and III
(b) Only II
(c) All of three
(d) Only II and III
(e) None

**Q27. Which of the following negates the motive behind the decision taken by Government of India?**
(I) In recent survey, India falls with 25 rank in terms of corruption among world.
(II) Mr X, the former CEO of a reputed company has been arrested in corruption charge of Rs. 15 thousand crores.
(III) CBI has raided the house of top businessmen of different states and has seized a total of 2 lakh crores of black money.
(a) Only I
(b) Only I and III
(c) Only II
(d) Only II and III
(e) All of three

**Directions (28-30): Study the following information carefully and answer the questions given below:**
Eight persons work in two different departments i.e., Research and Agriculture and all of them get different marks in the Research and Agriculture sessions organized by organization. Each of them has different years of experience (in whole number) in their departments. They have qualification in either HR or diploma. No one has more experience than 11 years. Equal number of persons work in both departments.
A and D have same qualification. B gets twice marks as the experience of F and doesn't qualification in HR. F has twice experience than E who has more experience than A. F did Diploma same as C. A's marks is two more than B's marks but not multiple of 7. C and D have different qualification. The one who gets marks in multiple of 8 works in agriculture department. G's experience is equivalent to smallest two digits prime number. F have 4 marks less than E. G's experience and C's Mark are not equal. G gets the marks which is 3/2 of the marks get by A. C's experience is five times of A's experience. The marks get by D is twice of C's experience. A and D work in the same department but not as B. A gets marks which is twice of C marks. C and F work in same department but not as A's department. A has even number of experiences. B has more experience than H but less than D and all have prime number experience. E and H work in same department. E, G and H have same qualification but different than B. H marks is 9 more than E and just less than D.

**Q28. Four of the following five are alike in a certain way and thus form a group then who among the following doesn't belong to the group?**
(a) A- HR
(b) B-Diploma
(c) D-HR
(d) F-Diploma
(e) H-Diploma

**Q29. What is the sum of the experience of A, C, F and H?**
(a) 33 years
(b) 28 years
(c) 23 years
(d) 39 years
(e) 26 years

**Q30. Which among the following statement is not true?**
(a) G has maximum years of experience among all
(b) Only three persons are qualified in Diploma
(c) A gets the fourth highest marks
(d) More than three persons have more experience than D
(e) None is true

**Directions (31-34): Read the given information and answer the questions based on it:**
There are four platforms in a railway station. The platforms open at different time one after the other such that platform 1 opens at 5am, platform 2 opens at 6am, platform 3 opens at 7am and platform 8 opens at 8am. Some trains arrive at these platforms one by one at a gap of 1 hour i.e., if train X arrived at platform 1 at 5am, then train Y will arrive at platform 1 at 6am. Multiple trains can arrive at single platform but having 1 hour gap in their arrival.
Read the following statements to get the desired output:
1. Train M is not the single train to arrive on a platform.
2. Train D arrives just before train B on the same platform.
3. One hour arrival gap between train G and train H on the same platform.
4. No train arrives after train C which also arrives on one of the platforms at 6am.
5. Arrival time of train G and train B is same where train B arrives on platform 1.
6. The train which first arrives at 5am on platform 1, next arrives at 7am on platform 3.
7. Train K arrives at platform 1 before train S, on platform 2.
8. Train H arrives at platform 2 at 7am.

**Q31. How many trains arrive on all the platforms (consider a train only once)?**
(a) Six
(b) Seven
(c) Nine
(d) Eight
(e) None of the above

**Q32. Which of the following combination is correct for the train which arrives just before M on same platform?**
(a) Platform 1, 7am
(b) Platform 3, 7am
(c) Platform 1, 5am
(d) Platform 2, 6am
(e) Platform 2, 7am

**Q33. Which of the following train arrives at last on platform 1?**
(a) The train which arrives just after train D
(b) The train which arrives at same time with train S on different platform
(c) The train which arrives two hours after train K
(d) The train which also stops on platform 2 at 7am
(e) None of the above

**Q34. Which of the following statement is not true?**
I. Train S arrives at last on one of the platforms
II. Train K arrives after train B on same platform
III. Only two train arrives on more than one platform
(a) Only I is true
(b) None is true
(c) Only II and III is true
(d) Only I and II is true
(e) Only III is true

**Directions (35-35): Below in each question are given two Statement I and II. These statements may be either independent causes or may be effects of independent causes or a common cause. One of these statements may be the effect of the other statement. Read both the statements and decide which of the following answer choice correctly depicts the relationship between these two statements. Give answer**

**Q35.** I. The central government has started to build 500 beds with the help of DRDO in Mumbai after 5000 covid cases come in a single day.
II. Amid surge in covid cases two players of RCB have withdrawn their name form ongoing IPL cricket match.
(a) If Statement I is the cause and Statement II is its effect.
(b) If Statement II is the cause and Statement, I is its effect.
(c) If both the Statements I and II are independent causes.
(d) If both the Statements I and II are effects of independent causes.
(e) If both the Statement I and II are effects of some common causes.

**Directions (36-39): Study the following information carefully and answer the questions given below:**

A certain number of persons sit in a linear row such that some of them face north while some of them face south. Some of them like different cities.

B sits at the fourth position from one of the extreme ends. The one who likes Hamilton sits fourth to the left of B. The number of persons sit between B and the one who likes Hamilton is one more than the number of persons sit between E and the one who likes Hamilton. Only two persons sit between E and F. F neither likes Hamilton nor sits to the right of B. The one who likes Tokyo sits third to the left of F. B and F face opposite directions. K sits adjacent to both H and F. The immediate neighbours of K face the opposite direction as K faces. The number of persons sit between K and the one who likes Tokyo is multiple of 3. The number of persons sits between H and J is thrice of the persons sit to the right of H. J sits to the left of F. Only one person sits between H and I. Only three persons sit between D and J. Only one person sits to the right of D. The one who likes Boston sits fourth to the left of D. One person sits between J and the one who likes Houston who faces north. G sits second to the left of J and both face same direction. The one who likes Madrid sits third to the left of E. The one who likes Toronto sits second to the left of I.

**Q36. Which among the following statement(s) is/are true?**
I. More than 20 persons sit in the row
II. J likes Boston city
III. Even number of persons sit between the one who likes Tokyo and the one who likes Houston
(a) Both II and III
(b) Only I
(c) Only III
(d) Both I and II
(e) All I, II and III

**Q37. How many persons sit between I and the one who likes Hamilton?**
(a) Ten
(b) Nine
(c) Twelve
(d) Eleven
(e) Eight

**Q38. What is the position of the one who likes Toronto with respect to G?**
(a) Eighth to the right
(b) Sixth to the left
(c) Eighth to the left
(d) Tenth to the right
(e) Ninth to the left

**Q39. The number of persons sit to the right of I is two less than the number of persons sit to the ___.**
(a) Right of the person who likes Madrid
(b) Right of E
(c) Right of J
(d) Right of the person who likes Houston
(e) Right of D

**Directions (40-41): The questions below, consist of a question and three statements numbered as I, II and III given below it. You have to decide whether the data given in the statements are sufficient to answer the question or not. Read all statements and choose the most appropriate option.**

**Q40. Twelve persons sit in two parallel rows such that six persons sit in each row. In row 1- O, K, L, M, N and Q sit and face the south direction while in row 2 – A, B, C, D, E and F sit and face the north direction but not necessarily in the same order. The persons sit in row 1 face the persons sit in row 2 and vice versa. Which person faces Q?**

I. One person sits between D and the person who faces K. Two persons sit between N and L. One person sits between B and A. F sits to the left of E. M neither faces E nor sits to the left of O.

II. N neither faces D nor sits adjacent to the person who faces D. More than two persons sit to the right of F. K and B don't sit at the end. O doesn't sit adjacent to N and L.

III. L and K do not sit adjacent to each other. B neither faces N nor sits adjacent to the person who faces N. More than one person sits to the right of D who does not sit adjacent to E. E and F don't sit at the end.

(a) If data in statement I alone is sufficient
(b) If data in statement II alone is sufficient
(c) If data either in statement I alone or in statement III alone is sufficient
(d) If data in all statements i.e., I, II and III even together is not sufficient
(e) If data in all statements i.e., I, II and III together is sufficient

**Q41. Eight persons i.e., A, B, C, D, M, N, O and P attend a function in eight different months viz. January, March, April, May, July, August, November and December of the same year. Who will attend the function in May?**

I. One person attends the function between M and N. P attends the function two persons after O but not after A. One person attends the function between A and C. N and P do not attend the function in the adjacent months.

II. O and N do not attend the function in the adjacent months. Two persons attend the function between N and D who does not attend the function just before O. C does not attend the function in the month having a minimum number of days.

III. A is neither the first person nor the last person to attend the function. D and M do not attend the function adjacent to each other. A does not attend the function just before M. B neither attend the function just after N nor just before O.

(a) If data in statement I alone is sufficient
(b) If data in statement II alone is sufficient
(c) If data either in statement I alone or in statement III alone is sufficient
(d) If data in all statements i.e., I, II and III even together is not sufficient
(e) If data in all statements i.e., I, II and III together is sufficient

**Directions (42-44): Study the following information carefully and answer the questions given below-**

Eight persons D, M, P, B, R, S, T and N are related to each other and they were born (but not necessarily in the same order) in 1952, 1956, 1962, 1981, 1984, 1987, 2014 and 2017. Age is calculated as on base year 2023.

N is the nephew of M's spouse. Difference between the ages of N and N's mother is a multiple of 10. M's uncle's age was prime numbered but he was not the oldest. Difference between the ages of D and D's son is a prime number but less than 30. Difference between the ages of B and B's mother-in-law is a multiple of 5. Difference between the ages of B and B's spouse is twice than the difference between the ages of M and S. Difference between the ages of B and B's only sibling is 1/3 of the age of N. M has a son and no sibling. M's uncle is not D. S is not married to B. M has a father. D had no sibling. P is paternal grandmother of M's only son. P is grandmother of T. M's father has no sibling. Gender of M and N is same but not same as S.

**Q42.What is the age of M's uncle?**
(a) 36 years
(b) 42 years
(c) 39 years
(d) 67 years
(e) 71 years

**Q43.Who is B's mother-in-law?**
(a) The one who is youngest among all
(b) The one who is 39 years old
(c) The one who is 71 years old
(d) The one who is 9 years old
(e) The one who is 67 years old

**Q44.What is the average age of B, D, T and N?**
(a) 32 years
(b) 28 years
(c) 30 years
(d) 24 years
(e) 18 years

**Q45. Nine persons- A, B, C, D, E, F, G, H and I sit around a circular table (but not necessarily in the same order) in such a way that some are facing the center whereas others are facing away from the center. Not more than two persons sit together are facing in the same direction. No two persons in alphabetical order are sitting together. A sits third to the left of E both face in opposite directions. The person sits immediate left of A sits fourth to the right of D who faces the center. F sits third to the left of C and both face in the same direction. Neither G nor A sits adjacent to C. F sits immediate left of H who faces away from the center. Neither H nor B sits adjacent to E. B sits immediate left of G and faces away from the center. Find how many persons sit between E and B when counted from the right of B?**
(a) Three
(b) Six
(c) Four
(d) One
(e) Five

**Directions (46-50): In each of the questions given below three words are given in bold. These words may or may not be in their correct position. Following each sentence few sequences are provided. Select the sequence of the words which will make the given sentence contextually meaningful.**

**Q46.** The scientist's **obfuscated (A)** on quantum physics was filled with technical terms that **presentation (B)** the topic for most of the audience, leaving them **bewildered (C)** and struggling to grasp the concepts.
(a) BAC
(b) ACB
(c) BCA
(d) Both (A) and (C)
(e) All (A), (B) and (C)

**Q47.** The company's management team was divided into two **factions (A)**, with one group **overtly (B)** advocating for a new product launch, while the other group **covertly (C)** worked to undermine the project behind the scenes.
(a) BAC
(b) ABC
(c) ACB
(d) Both (B) and (C)
(e) All (A), (B) and (C)

**Q48.** The scientist, known for his **methodical (A)** and **deliberate (B)** research approach, embarked on a **ponderous (C)** study, carefully collecting and analyzing data over the course of several years to arrive at his groundbreaking discoveries.
(a) ABC
(b) BAC
(c) CAB
(d) Both (B) and (C)
(e) All (A), (B) and (C)

**Q49.** As the young musician carefully **plucked (A)** the strings of his guitar, he **struck (B)** a chord that resonated through the room, **poking (C)** the audience's attention with the deliberate and melodious rhythm.
(a) ABC
(b) Both (A) and (C)
(c) BAC
(d) ACB
(e) All (A), (B) and (C)

**Q50.** In the world of modern **technology (A)**, the inner workings of cutting-edge quantum computers may seem **esoteric (B)** to most, but the smartphones we use daily have become utterly **ubiquitous (C)**, altering the way we live and connect with the world.
(a) BCA
(b) Both (C) and (D)
(c) ABC
(d) ACB
(e) All (A), (B) and (C)

**Directions (51-55): Two paragraphs with a blank space are provided in each of the following questions. Fill in the blank space with the most appropriate one out of the four options given below, taking into consideration the consistency and compatibility of the two paragraphs. If none of the given options seems appropriate to fill in the blank space, choose option (e) as your answer choice.**

**Q51.** (I) Good afternoon, thank you for coming in today. Can you please let me know when you'd be available to start if you were to join our company and is there anything else you'd like to discuss or any questions you have about the company or the role?

(II) _____

(III) Certainly, our team is composed of highly skilled professionals who value collaboration. As for projects, we're currently working on several exciting initiatives, including a major product launch.

(a) I'm ready to start as soon as possible, and there are no specific questions or concerns I have about the role or the company.

(b) Yes, I do have a question. I'd like to know more about the team I'll be working with and the main projects I'd be involved in.

(c) I'm curious about the work culture here. Can you describe the values and principles that define the company?

(d) I'm interested in the overall work environment. Could you tell me more about the organization's welfare policies for its employees?

(e) None of the above

**Q52.** (I) In recent years, our country's economy has flourished, driven by strong domestic demand, strategic investments in key sectors, and a focus on innovation, resulting in a steady increase in our GDP and regional economic leadership.

(II) _____

(III) Despite significant economic progress, we acknowledge challenges like income inequality and sustainability. Our commitment is to build an inclusive, sustainable economy, sharing growth benefits and mitigating environmental impact, for a better quality of life for all.

(a) Economic downturns can result from various factors, including financial crises, recessions, global economic issues, and overreliance on a single sector.

(b) Our recent economic growth has been primarily driven by foreign investments, overshadowing the significance of domestic demand and innovation.

(c) In contrast, our economic achievements have been primarily due to political stability, with minimal focus on technological advancements or diversification.

(d) Economic success thrives on diversification, expanding beyond traditional sectors to invest in technology and services, enhancing resilience, and job market dynamism.

(e) None of the above

**Q53.** (I) Education forms the bedrock of individual and societal progress, providing the knowledge and competencies needed for personal development, economic well-being, and active citizenship, whether through formal or lifelong learning.

(II) Furthermore, education fosters critical thinking, problem-solving, and creativity. It empowers individuals to make informed decisions, contributes to economic competitiveness, and promotes social cohesion.

(III) _____

(a) In today's globalized world, access to quality education is essential for reducing inequality and achieving sustainable development.

(b) Education can perpetuate social inequalities by favoring privileged groups, and the pressure to conform to standardized testing can stifle creativity and critical thinking.

(c) Despite its significance, education is solely focused on academic achievements, neglecting the development of essential life skills and practical knowledge.

(d) Educational systems universally prioritize memorization over critical thinking, undermining the ability to adapt to real-world challenges and stifling creativity.

(e) None of the above

**Q54.** (I) _____

(II) As the demand for freshwater resources rises due to population growth and industrialization, agriculture finds itself in a precarious position.

(III) In the face of this challenge, the agricultural sector's resilience and productivity rely on the implementation of inventive solutions and sustainable practices.

(a) Crops like rice, which require substantial amounts of water, are particularly vulnerable.

(b) Water scarcity may prompt farmers to change their crop choices, favoring more drought-resistant varieties.

(c) Water, the lifeblood of agriculture, has always played a pivotal role in the success of farming practices. However, the world is facing a growing challenge: water scarcity

(d) Implementing water-efficient techniques like drip irrigation, mulching, and precision agriculture can significantly reduce water usage while maintaining crop productivity.

(e) None of the above

**Q55.** (I) Baking, an age-old culinary art, has transcended its primary purpose of providing sustenance to become a source of joy, creativity, and a powerful stress-reliever for many.

(II) _____

(III) Baking brings happiness into our lives for a scientific reason. When we bake, our brains release endorphins, the "feel-good" chemicals that alleviate stress and boost joy.

(a) In recent years, the popularity of communities marketing positive emotional and therapeutic aspects has surged.

(b) Baking is often perceived as a melancholy process that only involves following precise instructions to achieve the desired results.

(c) So, the next time you're feeling overwhelmed, why not head to the kitchen, don your apron, and immerse yourself in cooking?

(d) The process of mixing flour, sugar, and eggs to create delicious treats not only satiates our taste buds but also brings happiness and nourishes our soul.

(e) None of the above

**Directions (56-61):** Read each sentence to find out whether there is any grammatical or idiomatic error in it. In the following sentences, a part is highlighted in each sentence which is error-free, the error, if any, will be in any other part of the sentence. The letter of that part is the answer. If there is 'No error', the answer is (e). (Ignore errors of punctuation, if any).

**Q56.** Scientists has discovered that environmental (A)/ **factors play a greater role /** than genetic variants in determining (B)/ the height of children (C)/ in low- and middle-income countries (LMICs). (D)

(a) A

(b) B

(c) C

(d) D

(e) No error

**Q57.** Cybersecurity firms are turning (A)/ to integrated platforms to offer (B)/ **comprehensive online security for both/** B2B and end-users, as standalone tools (C)/ struggle to meet enterprise security needs. (D)

(a) A

(b) B

(c) C

(d) D

(e) No error

**Q58.** One of the student in the (A)/ advanced mathematics class consistently (B)/ **outperforms their peers,/** showcasing exceptional (C)/ problem-solving skills.(D)

(a) A

(b) B

(c) C

(d) D

(e) No error

**Q59.** Two studies published in (A)/ **international journals have /**found a worrying link among (B)/ air pollution levels and (C)/ the incidence of type 2 diabetes in Chennai and Delhi. (D)

(a) A

(b) B

(c) C

(d) D

(e) No error

**Q60.** The global carbon (A)/ **budget for a given temperature /** limit is a global resource, common (B)/ to the entire world, but (C)/ is exhaustible and limited. (D)

(a) A

(b) B

(c) C

(d) D

(e) No error

**Q61. The upgrade to the latest smartphone** / offers a bigger and better (A)/ display, enhancing the user's (B)/ experience for watching (C)/ videos and browse websites. (D)

(a) A

(b) B

(c) C

(d) D

(e) No error

**Directions (62-67): In each of the following questions there are three blank spaces. Below each question there are some options and each option consist of three words which can be filled up in the blanks of the statement(s) to make the statement grammatically correct. Choose the correct alternative among the options given below.**

Q62. The investigator, with _____ attention to detail, proceeded to _____ every piece of evidence, hoping to uncover the elusive truth behind the _____ case.
(a) meticulous, scrutinize, complex
(b) scandalous, ratify, complicated
(c) trivial, foresee, veiled
(d) virtuous, qualify, obvious
(e) vivid, ridicule, intricate

Q63. In the face of the challenging situation, she took a _____ approach, focusing on _____ solutions rather than getting lost in _____ theories.
(a) opportunistic, pragmatic, viable
(b) delusional, durable, historic
(c) pragmatic, practical, idealistic
(d) feasible, realistic, implemented
(e) obstruse, inevitable, probable

Q64. His _____ speech at the conference _____ the audience and _____ his deep knowledge on the subject.
(a) vocal, intimidated, perplexed
(b) exquisite, incapacitated, delivered
(c) radical, repelled, illustrated
(d) eloquent, captivated, conveyed
(e) verbal, strengthen, intrigued

Q65. His _____ pursuit of the truth led to the _____ that _____ solved the long-standing mystery.
(a) preserving, dimension, apologetically
(b) tenacious, breakthrough, ultimately
(c) conundrum, hesitation, eventually
(d) indifferent, breach, gradually
(e) apathetic, zenith, mistakenly

Q66. The _____ of how to allocate the _____ resources among competing projects required careful _____.
(a) candor, restricted, analysis
(b) procedure, inexhaustible, judgement
(c) conundrum, limited, consideration
(d) zealous, futuristic, admiration
(e) mechanism, vicarious, precautions

**Q67.** The charity's mission to _____ poverty was a _____ endeavour, but their dedication never _____.
(a) elevate, reckless, wandered
(b) prosecute, serendipity, capitulate
(c) prolific, sycophant, blurred
(d) reduce, malfeasance, distorted
(e) alleviate, quixotic, wavered

**Directions (68-74): Read the following passage and answer the given questions.**
A data breach may be analogously construed as an intramural foray transpiring under the shroud of nocturnal stillness, where an infiltrator, akin to a digital brigand, subtly _____ with invaluable assets, leaving the homeowner oblivious until the irrevocable damage manifests. In congruence, corporate entities find themselves ensnared in the surreptitious siphoning or compromise of consequential data within the digital milieu. This pervasive quandary casts its **ominous** pall across a myriad of global enterprises, with an astounding 83% of scrutinized organizations contending with recurrent incursions, as delineated in the comprehensive 2022 Cost of Data Breach analysis proffered by IBM.

Operationally, data breaches epitomize security conundrums culminating in the unauthorized manipulation, disclosure, access, or obliteration of personal data, opportunely exploiting systemic susceptibilities or misconfigurations. Cyber malefactors, be they individual agents or collective entities, deploy an eclectic array of stratagems—ranging from malware incursions to the subterfuge of phishing emails—enabling their ingress into corporate networks. In an epoch characterized by the ceaseless generation and utilization of data across sundry devices, systems, and applications, the peril of clandestine data access is exponentially exacerbated.

The repercussions of data breaches transcend mere pecuniary ramifications, precipitating deleterious effects on an organization's reputational standing and instigating punitive measures from regulatory bodies. International jurisdictions, attuned to the burgeoning threat matrix, have responded by promulgating stringent data protection and privacy statutes, thereby endowing individuals with autonomy over their data and obligating corporate entities to assume augmented responsibilities. Consequently, organizational prioritization of preventative and responsive stratagems becomes imperative, cognizant of the exigency of compliance with dynamically evolving regulatory paradigms amidst the contemporaneous milieu of data proliferation and cyber-security vicissitudes.

**Q68. What aspect contribute to the potential for unauthorized access?**
(a) Utilizing data security systems exclusively for the primary device.
(b) The continuous generation and utilization of data across diverse devices and applications.
(c) The continuous creation and technological advancement of devices.
(d) Collaborating with cyber malefactors, exposing all devices to vulnerabilities.
(e) Corporations compromising consequential data within the digital milieu.

**Q69. Considering the prevalence of data across diverse domains, what are the potential consequences of failing to mitigate the risk of unauthorized access for businesses?**
(I) Businesses may suffer reputational damage due to breaches of trust and the perception that they cannot adequately protect sensitive data
(II) Financial losses through theft, fraud, or the compromise of sensitive financial information.
(III) A diminution in customer satisfaction resulting from the dissemination of data pertaining to a company's product.

(a) Only (I)

(b) Only (II)

(c) Both (I) and (II)

(d) Both (I) and (III)

(e) All (I), (II) and (III)

**Q70. Which of the following cannot be considered as a data breach in the realm of cyber threats?**

(a) Phishing attacks that trick individuals into revealing sensitive information.

(b) Malware infections exploiting vulnerabilities to compromise computer systems.

(c) Utilizing standard network monitoring tools to detect and address typical network issues.

(d) Insider threats involving malicious actions or negligence from within an organization.

(e) None of these

**Q71. How do businesses navigate compliance with stringent data protection regulations?**

(a) Assessing and ensuring the data protection regulations formulated by their cartel.

(b) Designating a Data Protection Officer (DPO) can facilitate compliance efforts

(c) Conducting a thorough data mapping and inventory helps identify what personal data is collected and processed

(d) Both (a) and (c)

(e) The passage does not provide enough information

**Q72. Choose the most suitable word to fill in the blank.**

(a) elucidates

(b) absconds

(c) vilifies

(d) exacerbates

(e) ruptured

**Q73. What is the tone of the passage?**

(a) Pessimistic

(b) Informative

(c) Sarcastic

(d) Didactic

(e) Analytical

**Q74.** According to the passage, choose the most suitable word that has a similar meaning as "**Ominous**".

(a) propitious

(b) threatening

(c) cacophony

(d) ubiquitous

(e) disparate

**Directions (75-80): Read the following passage and answer the questions.**

Voice or speaker recognition refers to a machine or program's ability to interpret dictation or understand and execute spoken commands. This technology has become increasingly prominent with the _____ of artificial intelligence (AI) and intelligent assistants like Amazon's Alexa and Apple's Siri. Offering hands-free interactions, voice recognition systems enable users to make requests, set reminders, and perform various tasks simply by speaking.

The process involves automatic speech recognition (ASR) programs that can identify and differentiate voices. Some ASR programs **necessitate** users to train the system for **improved** accuracy in converting speech to text. Evaluation of a voice's frequency, accent, and speech flow is **integral** to voice recognition systems.

While voice recognition and speech recognition are often used interchangeably, they have distinct meanings. Voice recognition identifies the speaker, whereas speech recognition assesses the content of what is said.

In practice, voice recognition software on computers converts analog audio into digital signals through analog-to-digital (A/D) conversion. This digital database of words or syllables is then compared to signals during pattern recognition. The size of the program's effective vocabulary depends on the computer's RAM capacity, with faster processing speeds enhancing search capabilities.

Voice recognition involves analyzing speech through models like the hidden Markov model or recurrent neural networks. The former breaks down spoken words into phonemes, while the latter uses previous outputs to influence current inputs, improving capabilities and accuracy with increased data.

The integration of voice recognition into smartphones and home devices like Google Home and Amazon Echo has made this technology ubiquitous. As more users engage with voice recognition, the wealth of data generated enhances the capabilities and accuracy of these systems, indicating a promising trajectory for the technology's future.

**Q75. What is the specific focus of voice recognition in comparison to speech recognition?**

(a) Voice recognition predominantly centers on discerning the speaker's identity rather than appraising the uttered content.

(b) Voice recognition deciphers the speaker's words and then correlates them with nearby speakers.

(c) Speech recognition primarily concentrates on the speaker's tone, whereas voice recognition identifies the speaker's voice modulations.

(d) The terms voice recognition and speech recognition are frequently used interchangeably, as they serve a similar purpose.

(e) Voice recognition entails discerning the distinct acoustic modulations of the speaker, whereas speech recognition proffers lexical conjectures to the speaker.

**Q76. What is the function of pattern recognition as described in the passage in the context of voice recognition software?**

(a) Translating analog audio into digital signals

(b) Recognizing the digital signals and subsequently converting them into analog signals for the system to comprehend the language.

(c) Analyzing and comparing a digital repository of words derived from converting analog audio into digital signals

(d) Evaluating the computer's RAM capacity to expedite the search for an effective vocabulary.

(e) Both (a) and (c)

**Q77. How does Markov model contribute to the overall improvement of voice recognition capabilities?**
(a) Incorporating and neglecting the preceding output to impact the input of the subsequent stage in voice recognition.
(b) Utilizing phonemes for coarse identification of the origin of words and their association with the correct meaning.
(c) Aggregating words into components to generate the output for the voice recognition process.
(d) Dissection of words into phonetic components allows for a more granular analysis of voice recognition.
(e) None of these

**Q78. Why does the passage suggest that the wealth of data is a crucial factor in determining the positive course of development for voice recognition technology?**
(a) The substantial amount of data will allow users to obtain authentic results of their search requests.
(b) It will provide a diverse and extensive range of speech patterns, accents, and variations, enriching the system's database.
(c) More users will be engaged to contribute to the wealth of data
(d) It enhances the capabilities of voice recognition systems to accurately interpret and respond to a wide array of voices and linguistic nuances
(e) Both (b) and (d)

**Q79. Choose the most suitable word that should fill the given blank.**
(a) advent
(b) oblivious
(c) conservation
(d) adversity
(e) mundane

**Q80. Choose the most appropriate choice that can substitute the three highlighted words in the passage in the same order.**
(a) require, alleviated, vital
(b) rationalize, progressed, exclusive
(c) crucial, discern, inherent
(d) mandate, elevated, indispensable
(e) impose, augmented, resilient

**Directions (81-84): The table given below shows information about total number products sold by five shops (A, B, C, D and E) on three (Monday + Tuesday + Wednesday) days. Read the data carefully and answer the questions.**

| Shops | Ratio of total products sold on Monday and Tuesday (Monday : Tuesday) | Total number of products sold on Tuesday | % of products sold on Wednesday out of total products sold on all three days. |
|---|---|---|---|
| A | ____ | $\frac{25}{2}x$ | y% |
| B | 7 : x | ____ | ____ |
| C | 4 : 5 | 10x | 20% |
| D | ____ | ____ | (y – 5) % |
| E | 3 : 4 | 15x | 30% |

**Note: (i)** The difference between total number of products sold by C and E in all three days is 120.
**(ii)** Total products sold by D in all three day is 120.
**(iii)** Some data are missing, calculate the data if required.

**Q81. In shop A, the ratio of total product sold on Monday to Tuesday is 8 : 5 and total number of products sold by shop A on Wednesday is 12.5% less than that of on Monday. If D sold total 40% products on Monday, then find total products sold by D on Tuesday.**
(a) 40
(b) 48
(c) 42
(d) 36
(e) 24

**Q82. The difference between total products sold by B on Monday and Tuesday is 15 and Shop B sold 20% of total products on Tuesday out of total products sold on all three days. Find total number of products sold by E on Wednesday are what percent of total number of products sold by shop B on Wednesday.**
(a) 48%
(b) 30%
(c) 36%
(d) 24%
(e) 12%

**Q83. Total number of products sold by shop A on Monday is two times of the total products sold by E on that day and total products sold by A on all three days is 350. Find the ratio of total product sold by C to D on Wednesday.**
(a) 5 : 6
(b) 2 : 1
(c) 3 : 4
(d) 1 : 2
(e) 2 : 3

**Q84. Total number of products sold by shop A in all the three days 246 more than total number of products sold by shop C and E on Monday together. If total number of products sold by A on Monday and Wednesday is equal, then find the ratio of 'x' to 'y'.**
(a) 16: 73
(b) 17: 25
(c) 16: 75
(d) 18: 77
(e) None of these

**Directions (85-87): Read the pie chart carefully and answer the following question.**
Pie chart given below shows the percentage distribution of questions attempted by four different (A, B, C and D) students in an exam. Exam contains three subjects English, History and Mathematics which consist of 120, 60 and 100 questions respectively.
Maximum number of questions attempted by each student is 240 and total number of questions attempted by all the students is 800.

## percentage distribution of questions attempted by all the students
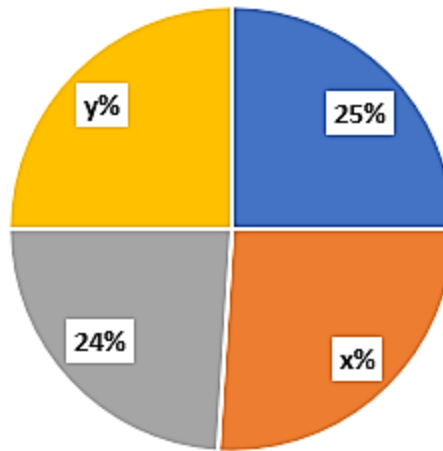


■ A  ■ B  ■ C  ■ D

**Q85. Form which of the given statement/s we can find the exact value of (x – y).**
I: If B attempted highest number of questions and D attempted lowest number of questions.
II: If B attempted more than 200 questions, then D attempted less than 190 questions.
(a) Only (I)
(b) Only (II)
(c) Neither (I) and (II)
(d) Either (I) and (II)
(e) Both (I) and (II) together

**Q86. If C attempted 54 questions in History and questions attempted in English are more than that of history but less than that in Mathematics, then find possible number of questions attempted in Mathematics by C.**
(a) 81
(b) 75
(c) 70
(d) none of these
(e) all of these

**Q87. For each incorrect question one mark is deducted and for each right answer two marks is given. If A attempted 30% of the total question attempted by him in history and gain 66 marks from history, then find the number of incorrect questions attempted by A in history.**
(a) 18
(b) 15
(c) 20
(d) None of these
(e) 42

**Directions (88-91): Read the table carefully and answer the following question.**

The table shows the data about distance (km) covered from one point to another point by the vehicle used between each point and speed of each vehicle (km/hr).

i.e., If one person wants to travel from P to S, then he/she can only use vehicle available at the point P

**Note**: ** means there is no direct connection between given points

|   | P | Q | R | S | Transport vehicle | Speed (in km/hr) |
|---|---|---|---|---|---|---|
| P | 0 | 240 | ** | 520 | Taxi | 80 |
| Q | 360 | 0 | ** | 400 | Bus | 50 |
| R | 280 | 480 | 0 | ** | Car | 60 |
| S | 500 | ** | 600 | 0 | Bike | 25 |

**Q88. If Ram travels from P to S and Rahul travels from Q to P, then find the difference between the maximum distance travelled by both of them.**
(a) 145
(b) 160
(c) 150
(d) 140
(e) None of these

**Q89. If Raj wants to travel from P to R, then find the minimum time required to cover this distance by Raj.**
(a) 40 hours
(b) 40.5 hours
(c) 30.5 hours
(d) 35 hours
(e) 42 hours

**Q90. If Rahul travels from P to S via Q and the fair of the vehicle per km from point Q to S is 20% more than that of from P to Q, then the total fair collected from P to S via Q is Rs. Rs. 72000. Find the fare of the taxi per km.**
(a) Rs. 100
(b) Rs. 150
(c) Rs. 120
(d) Rs. 140
(e) Rs. 130

**Q91. Find the minimum possible sum of the time (in hours) taken to cover distance from P to S and from R to S.**
(a) 17⅔
(b) 18⅔
(c) 16
(d) 25
(e) 12

**Directions (92-94): Read the information carefully and answer the questions.**

A, B, C and D together can do a work 'X' in seven days and D did ¼th of the work 'X'. The ratio of efficiency of A to that of B is 3 : 4, while B is 100% more efficient than C. A and B together can complete work 'X' in 'x' days, while A and D can do the same work together in 'y' days.

**Q92. Two person P and Q together can complete another work 'Y' in (x+12) days, while Q and R together can complete the same work in (y - 2) days. If P, Q and R together can compete the work 'Y' in $\frac{6x}{y-7}$ days, then find efficiency of 'Q' is what percent more or less than efficiency of 'P'.**

(a) 80%

(b) 120%

(c) 100%

(d) 150%

(e) 60%

**Q93. 'm' men can complete a work in (x+9) day, while 'y' men can complete the same work in 'n' days. If 'y – 7' men can complete the same work in (n+12) days, then find in how many days (n–m) men can complete the same work?**

(a) 21 days

(b) 42 days

(c) 35 days

(d) 14 days

(e) 84 days

**Q94. 'm' men can do a work in 'n' days and 'n' women can do the same work in '2m' days. 'x' men and '1.5y' women together can complete the same work in 20 days. 5 men and (y+1) women started working together and they did work only for D days and remaining work is completed by a woman in $\frac{25}{3}D$ days. Find the value of 'D'.**

(a) 33

(b) 18

(c) 21

(d) 24

(e) 27

**Directions (95-98): The line graph shows the percentage of people using debit card to pay the bill, percentage of people getting 10% cashback using debit card out of the total people using debit card for payment, percentage of people getting 2% cashback using cash payments out of the total people using cash for payment while paying their bills either through debit card or cash only in four different restaurants (P, Q, R and S) on any day. Read the line graph carefully and answer the following questions.**

**Note:** (i) Cash back is given to customers in the given manner.

1. Debit card users get 10% cashback

2. Cash payments users get 2 % cashback

(ii) Total people who paid bill using debit card = number of people getting 10% discount + number of people did not get any discount using debit card

(iii) Total people who paid bill using cash = number of people getting 2% discount + number of people did not get any discount using cash
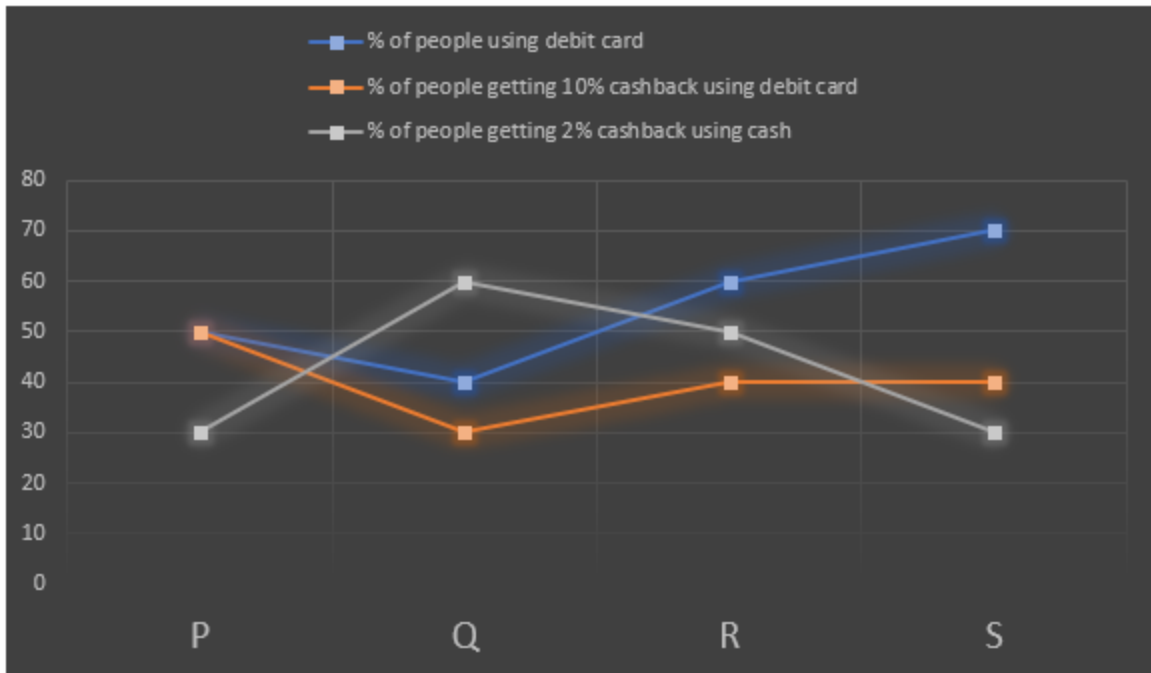
**Q95.** In restaurant P, 400 customers are using debit card but not getting cashback, then find the number of people getting cashback in restaurant P?
(a) 640
(b) 650
(c) 660
(d) 670
(e) None of these

**Q96.** Total 800 people went to restaurant Q. As per new festival scheme, if the average cashback for only cash users who do not get 2% cashback offer is Rs. 200 per person, then find the total amount of cashback given to the person who initially didn't get 2% cashback from those who are paying bill through cash. (in Rs)
(a) 37600
(b) 38400
(c) 29000
(d) 98000
(e) None of these

**Q97.** Total 3000 people went to restaurant R. Find the difference the number of customers who are getting 10% cashback and the number of customers who are using cash payments.
(a) 480
(b) 460
(c) 590
(d) 500
(e) None of these

**Q98.** If 630 people are using debit card in restaurant S, then find the total number of people getting 2 % cashback on cash.

(a) 81

(b) 89

(c) 90

(d) 91

(e) None of these

**Q99.** ABC is a three-digit number, when ABC is multiplied by a single digit number X, then the product is 2634. In that three-digit number ABC, the digit at tens place is equal to half of X. Which of the following statement/s is/are correct about ABC?

(i) Unit digit in ABC is 9

(ii) ABC is a prime number

(iii) Sum of digits of ABC is 16

(a) Only (i) and (iii)

(b) Only (i) and (ii)

(c) Only (iii)

(d) All (i), (ii) and (iii)

(e) None of these

**Q100. Read the passage carefully and answer the question.**

There are two bags A and B having balls of colors red, blue, green and yellow. They have 3 and 4 colored balls (not necessarily in the same order). Only one of the bags has yellow color balls. In bag A difference between red and blue color balls is 6. In both bags, the number of green balls is half of the red color balls. The difference between red and blue balls of bag B is 5. The yellow balls are 3 more than number of green balls in the bag containing yellow balls. Average number of balls in bag A and B are 48 & 37 respectively.

**Quantity I :** Find the difference between blue balls of A and red balls of bag B.

**Quantity II:** Difference between yellow balls of bag containing it and number of green balls in bag B.

(a) Quantity I > Quantity II

(b) Quantity I < Quantity II

(c) Quantity I ≥ Quantity II

(d) Quantity I ≤ Quantity II

(e) Quantity I = Quantity II or can't be determined

**Directions (101-102): Solve the number series to answer the following questions.**

$\sqrt[n]{A}$    29    B    C    437    B + 687    $\frac{1294}{\sqrt[n]{A}}$

Note:

(i) 'n' is a positive integer.

(ii) Difference between 29 and B is X, which has 3 factors excluding X itself, those are 13, 5 and A but when we include X then number of factors become 4.

**Q101. What is the value of A + C?**

(a) 221

(b) 222

(c) 223

(d) 224

(e) 225

**Q102. What is the LCM of B + 20 and A?**

(a) 101

(b) 102

(c) 114

(d) 104

(e) 115

**Directions (103-105): Solve the series to answer the following questions.**

Series I: 60   120   24   48      9.6   19.2

Series II: 100   W   X   Y   Z   32

Note: Both series follows the same patterns

**Q103. Find the difference between (Y+X) and (Y+Z)**

(a) 12

(b) 24

(c) 14

(d) 4

(e) 25

**Q104. If a new series starts with the value of (W-X) following the same logic mentioned in the above series, then what is the 3rd term of the newly formed series?**

(a) 120

(b) 121

(c) 144

(d) 64

(e) 25

**Q105. If roots of quadratic equation are $\frac{Y}{W}$ and $(\frac{W-X}{16})$, then find the quadratic equation whose variable is r?**

(a) $r^2 - \frac{90r}{5} + \frac{7}{11} = 0$

(b) $r^2 - \frac{32r}{5} + \frac{8}{25} = 0$

(c) $r^2 - \frac{87r}{4} + 3 = 0$

(d) $r^2 - \frac{52r}{5} + 4 = 0$

(e) None of the above

**Directions (106-108): Solve the quadratic and answer the following questions.**

A: $(x-2)^2 = (-3x^2) + 2^2 + 25x - P$

B: $(10y^2 - 3^2y + \frac{2}{3}) \times 3 + 10y = 0$

One root of equation A is 5

**Q106.** $\frac{7P}{21} \times 0.2P - 89$ **is equal to?**

(a) P+2
(b) 2P+2
(c) P+1
(d) 2P-1
(e) None of these

**Q107. Smallest root of equation A when multiplied by largest one-digit prime number.**

(a) $13\frac{1}{4}$

(b) $17\frac{1}{4}$

(c) $15\frac{3}{4}$

(d) $13\frac{3}{4}$

(e) $13\frac{3}{7}$

**Q108. Which of the following are the roots of equation B.**

(a) $\frac{1}{5}, \frac{1}{6}$

(b) $\frac{2}{5}, \frac{1}{3}$

(c) $\frac{2}{5}, \frac{1}{6}$

(d) $\frac{2}{3}, \frac{3}{5}$

(e) None of the above

**Q109.**

$\sqrt{(x + 45 - mn)^4} = 5x + Q$

One root is -10 where m and n are roots of equation given below:

$Y^2 - 11Y + 30 = 0$

Quantity I. $\frac{Q}{3}$

Quantity II. $\frac{Q}{2^2}$

(a) Quantity I < Quantity II
(b) Quantity I > Quantity II
(c) Quantity I = Quantity II
(d) Quantity I ≤ Quantity II
(e) Quantity I ≥ Quantity II

**Q110.**

$$Quantity\ I. \frac{(2a^3 + 2b^3)(a - b)}{(6a^2 - 7ab + 2b^2 + 5ab - 4a^2)(a^2 - b^2)}$$

**Quantity II.** Value of P – 2Q if Q<(-1)<P, Where P and Q are integers.

(a) Quantity I < Quantity II
(b) Quantity I > Quantity II
(c) Quantity I = Quantity II
(d) Quantity I ≤ Quantity II
(e) Quantity I ≥ Quantity II

**Directions (111-112): Read the information carefully and answer the following questions.**

A cube of side P cm is placed inside the sphere of radius R cm in such a way that sphere touches all the vertex of the cube. A cone of radius √3R cm and height H cm has volume 4950 cm³.

**Q111. Find the ratio of the total surface area of the sphere to the lateral surface area of the cube.**
(a) 33: 17
(b) 33: 19
(c) 31: 17
(d) 33: 14
(e) 29: 17

**Q112. Determined the relation between the P and H.**

(a) $P^2 = \dfrac{6600}{H}$

(b) $P^2 = \dfrac{3300\sqrt{3}}{H}$

(c) $H^2 = \dfrac{3100\sqrt{3}}{P}$

(d) $P^2 = \dfrac{3200\sqrt{3}}{H}$

(e) $P^2 = \dfrac{2100}{H}$

**Q113. A four-digit odd number 'A' whose unit digit is not 5 and when divided by a prime number gives resultant as a three-digit number 'B' whose tens place is 0. Sum of digit of A is eight while that of B is 5. Which of the following statement/s is/are correct about A and B.**
I. Product of the digits of A is equal to its sum of the digit
II. Difference between the hundred place digit of A and B is 3
III. Sum of A and B is 1624
(a) Only (II)
(b) All of the above
(c) Only (III)
(d) Only (I)
(e) Only (I) and (III)

**Directions (114-115): Read the information and answer the following questions.**

Four stations in a rectangular form ABCDA. The distance between A to B is $(P^2+100)$ km and that of between B and C is $(20P+100)$ km. Train Y starts from station A and continues travel to D via station B to C. Total distance travelled by the train is 2700 km in 25 hours. The table given below shows the time to cross the pole and time to cross platform.

| Train | Time to cross pole (in sec) | Time to cross platform (sec) |
|---|---|---|
| X | $0.5P - 5$ | P |
| Y | ............... | Q |
| Z | M | P+6 |

**Note -** Average time taken by all the train to cover platform is $(Q+6)$ second and length of platform = 400 meters.

**Q114. If the length of train Z is average length of train X and Y, then find M.**
(a) 14
(b) 32.14
(c) 28
(d) 20
(e) 21

**Q115. Find the ratio of P : Q.**
(a) 5:4
(b) 2:1
(c) 1:8
(d) 2:3
(e) 5:3

# Solutions

**S1. Ans.(c)**
**Sol.**

|   | I | II | III | IV |
|---|---|---|---|---|
| I | V-2 | E-5 | I-4 | N-4 |
| II | A-1 | C-3 | R-3 | E-5 |
| III | S-4 | H-3 | O-5 | T-5 |
| IV | T-5 | O-5 | N-4 | S-4 |

**S2. Ans.(a)**
**Sol.**

|     | I   | II  | III | IV  |
|-----|-----|-----|-----|-----|
| I   | V-2 | E-5 | I-4 | N-4 |
| II  | A-1 | C-3 | R-3 | E-5 |
| III | S-4 | H-3 | O-5 | T-5 |
| IV  | T-5 | O-5 | N-4 | S-4 |

**S3. Ans.(e)**
**Sol.**

|     | I   | II  | III | IV  |
|-----|-----|-----|-----|-----|
| I   | V-2 | E-5 | I-4 | N-4 |
| II  | A-1 | C-3 | R-3 | E-5 |
| III | S-4 | H-3 | O-5 | T-5 |
| IV  | T-5 | O-5 | N-4 | S-4 |

**S4. Ans.(d)**
**Sol.**

|     | I   | II  | III | IV  |
|-----|-----|-----|-----|-----|
| I   | V-2 | E-5 | I-4 | N-4 |
| II  | A-1 | C-3 | R-3 | E-5 |
| III | S-4 | H-3 | O-5 | T-5 |
| IV  | T-5 | O-5 | N-4 | S-4 |

**S5. Ans.(d)**

**S6. Ans.(c)**
**Sol.**

| Floors | Flat J | Flat K | Flat L | Flat M |
|--------|--------|--------|--------|--------|
| 5      | V      | O      | Vacant | R      |
| 4      | P      | Vacant | S      | Vacant |
| 3      | Vacant | Q      | Vacant | T      |
| 2      | Z      | U      | W      | Vacant |
| 1      | Vacant | X      | Vacant | Y      |

**S7. Ans.(b)**
**Sol.**

| Floors | Flat J | Flat K | Flat L | Flat M |
|--------|--------|--------|--------|--------|
| 5 | V | O | Vacant | R |
| 4 | P | Vacant | S | Vacant |
| 3 | Vacant | Q | Vacant | T |
| 2 | Z | U | W | Vacant |
| 1 | Vacant | X | Vacant | Y |

**S8. Ans.(d)**
**Sol.**

| Floors | Flat J | Flat K | Flat L | Flat M |
|--------|--------|--------|--------|--------|
| 5 | V | O | Vacant | R |
| 4 | P | Vacant | S | Vacant |
| 3 | Vacant | Q | Vacant | T |
| 2 | Z | U | W | Vacant |
| 1 | Vacant | X | Vacant | Y |

**S9. Ans.(e)**
**Sol.**

| Floors | Flat J | Flat K | Flat L | Flat M |
|--------|--------|--------|--------|--------|
| 5 | V | O | Vacant | R |
| 4 | P | Vacant | S | Vacant |
| 3 | Vacant | Q | Vacant | T |
| 2 | Z | U | W | Vacant |
| 1 | Vacant | X | Vacant | Y |

**S10. Ans.(a)**

**S11. Ans.(c)**
**Sol.**
**Logic in each step:**
Step I: For Number (count the digits from the left ends): square of the first digit, 1 is added to the second and third digit, 1 is subtracted from the last digit.
For words: Words are arranged according to the dictionary. First, the words that start with a vowel are arranged followed by the words that start with a consonant.
Step II: For Number: First even digits after that odd digits are arranged in ascending order from the left end within the number.
For words: Consonant is changed to just previous letter and vowels are changed to just next letter in each word.
Step III: For number: The sum of even digits is followed by the sum of odd digits in each number.
For word: Vowel and repeated consonants are dropped from each word.
Step IV: For number: Difference between the first number and the square of the second number from the left end (marked arrow).

For word: Each letter is arranged in alphabetical order within the word
Step V: 3 is added to the odd number and 4 is added to the even number. Words are removed in step V.

**Input:** 8548  UNITY  4369  FRAME  3657  EVENT  5378  SPOIL  6878  PLANK
Step I: 64657  EVENT  16478  UNITY  9766  FRAME  25487  PLANK  36987  SPOIL
Step II:  46657  FUFMS  46817  VMJSX  6679  EQBLF  24857  OKBMJ  68379  ROPJK



Step III: 16  12  MS  18  8  VMJSX  12  16  QBLF  14  12  KBMJ  14  19  RPJK
Step IV: 128  MS  46  JMSVX  244  BFLQ  130  BJKM  347  JKPR
Step V:  132  50  248  134  350

**S12. Ans.(b)**
**Sol.**
**Logic in each step:**
Step I: For Number (count the digits from the left ends): square of the first digit, 1 is added to the second and third digit, 1 is subtracted from the last digit.
For words: Words are arranged according to the dictionary. First, the words that start with a vowel are arranged followed by the words that start with a consonant.
Step II: For Number: First even digits after that odd digits are arranged in ascending order from the left end within the number.
For words: Consonant is changed to just previous letter and vowels are changed to just next letter in each word.
Step III: For number: The sum of even digits is followed by the sum of odd digits in each number.
For word: Vowel and repeated consonants are dropped from each word.
Step IV: For number: Difference between the first number and the square of the second number from the left end (marked arrow).
For word:  Each letter is arranged in alphabetical order within the word
Step V: 3 is added to the odd number and 4 is added to the even number. Words are removed in step V.

**Input:** 8548  UNITY  4369  FRAME  3657  EVENT  5378  SPOIL  6878  PLANK
Step I: 64657  EVENT  16478  UNITY  9766  FRAME  25487  PLANK  36987  SPOIL
Step II:  46657  FUFMS  46817  VMJSX  6679  EQBLF  24857  OKBMJ  68379  ROPJK



Step III: 16  12  MS  18  8  VMJSX  12  16  QBLF  14  12  KBMJ  14  19  RPJK
Step IV: 128  MS  46  JMSVX  244  BFLQ  130  BJKM  347  JKPR
Step V:  132  50  248  134  350

**S13. Ans.(d)**
**Sol.**
**Logic in each step:**
Step I: For Number (count the digits from the left ends): square of the first digit, 1 is added to the second and third digit, 1 is subtracted from the last digit.
For words: Words are arranged according to the dictionary. First, the words that start with a vowel are arranged followed by the words that start with a consonant.
Step II: For Number: First even digits after that odd digits are arranged in ascending order from the left end within the number.
For words: Consonant is changed to just previous letter and vowels are changed to just next letter in each word.

**Step III:** For number: The sum of even digits is followed by the sum of odd digits in each number.
For word: Vowel and repeated consonants are dropped from each word.
**Step IV:** For number: Difference between the first number and the square of the second number from the left end (marked arrow).
For word: Each letter is arranged in alphabetical order within the word
**Step V:** 3 is added to the odd number and 4 is added to the even number. Words are removed in step V.

**Input:** 8548   UNITY   4369   FRAME   3657   EVENT   5378   SPOIL   6878   PLANK
**Step I:** 64657   EVENT   16478   UNITY   9766   FRAME   25487   PLANK   36987   SPOIL
**Step II:**   46657   FUFMS   46817   VMJSX   6679   EQBLF   24857   OKBMJ   68379   ROPJK



**Step III:** 16      12  MS 18      8  VMJSX 12      16  QBLF 14      12  KBMJ 14      19  RPJK
**Step IV:** 128      MS      46   JMSVX   244   BFLQ   130   BJKM   347   JKPR
**Step V:** 132  50   248  134  350

## S14. Ans.(a)
**Sol.**

**Logic in each step:**

**Step I:** For Number (count the digits from the left ends): square of the first digit, 1 is added to the second and third digit, 1 is subtracted from the last digit.
For words: Words are arranged according to the dictionary. First, the words that start with a vowel are arranged followed by the words that start with a consonant.
**Step II:** For Number: First even digits after that odd digits are arranged in ascending order from the left end within the number.
For words: Consonant is changed to just previous letter and vowels are changed to just next letter in each word.
**Step III:** For number: The sum of even digits is followed by the sum of odd digits in each number.
For word: Vowel and repeated consonants are dropped from each word.
**Step IV:** For number: Difference between the first number and the square of the second number from the left end (marked arrow).
For word: Each letter is arranged in alphabetical order within the word
**Step V:** 3 is added to the odd number and 4 is added to the even number. Words are removed in step V.

**Input:** 8548   UNITY   4369   FRAME   3657   EVENT   5378   SPOIL   6878   PLANK
**Step I:** 64657   EVENT   16478   UNITY   9766   FRAME   25487   PLANK   36987   SPOIL
**Step II:**   46657   FUFMS   46817   VMJSX   6679   EQBLF   24857   OKBMJ   68379   ROPJK



**Step III:** 16      12  MS 18      8  VMJSX 12      16  QBLF 14      12  KBMJ 14      19  RPJK
**Step IV:** 128      MS      46   JMSVX   244   BFLQ   130   BJKM   347   JKPR
**Step V:** 132  50   248  134  350

## S15. Ans.(b)
**Sol.**

| Stack 1 | | Stack 2 | |
|---|---|---|---|
| Numbers | Boxes | Boxes | Numbers |
| 17 | A | N | 33 |
| 47 | M | L | 13 |
| 39 | C | Vacant | Vacant |
| 51 | X | O | 29 |
| 58 | Y | Q | 38 |
| 22 | U | R | 11 |
| 27 | T | S | 21 |

**S16. Ans.(a)**

**Sol.**

| Stack 1 | | Stack 2 | |
|---|---|---|---|
| Numbers | Boxes | Boxes | Numbers |
| 17 | A | N | 33 |
| 47 | M | L | 13 |
| 39 | C | Vacant | Vacant |
| 51 | X | O | 29 |
| 58 | Y | Q | 38 |
| 22 | U | R | 11 |
| 27 | T | S | 21 |

**S17. Ans.(c)**

**Sol.**

| Stack 1 | | Stack 2 | |
|---|---|---|---|
| Numbers | Boxes | Boxes | Numbers |
| 17 | A | N | 33 |
| 47 | M | L | 13 |
| 39 | C | Vacant | Vacant |
| 51 | X | O | 29 |
| 58 | Y | Q | 38 |
| 22 | U | R | 11 |
| 27 | T | S | 21 |

**S18. Ans.(c)**

**Sol.**

| Stack 1 | | Stack 2 | |
|---|---|---|---|
| Numbers | Boxes | Boxes | Numbers |
| 17 | A | N | 33 |
| 47 | M | L | 13 |
| 39 | C | Vacant | Vacant |
| 51 | X | O | 29 |
| 58 | Y | Q | 38 |
| 22 | U | R | 11 |
| 27 | T | S | 21 |

**S19. Ans.(c)**

**Sol.** Statement (I)-True-Reason: If exam will be conducted, crowd will be there. So, opposition are demanding to postpone the exam to avoid crowd as it may result to more rise in case. And statement I is supporting the demand as crowded markets has been closed.

Statement (II)-True-Reason: As state governments has postponed the exams, so it's a supporting statement for demand by opposition.

Statement (III)-False-Reason: It's not a supporting statement because as case is rising, but election is being conducted due to which crowd cannot be avoided.
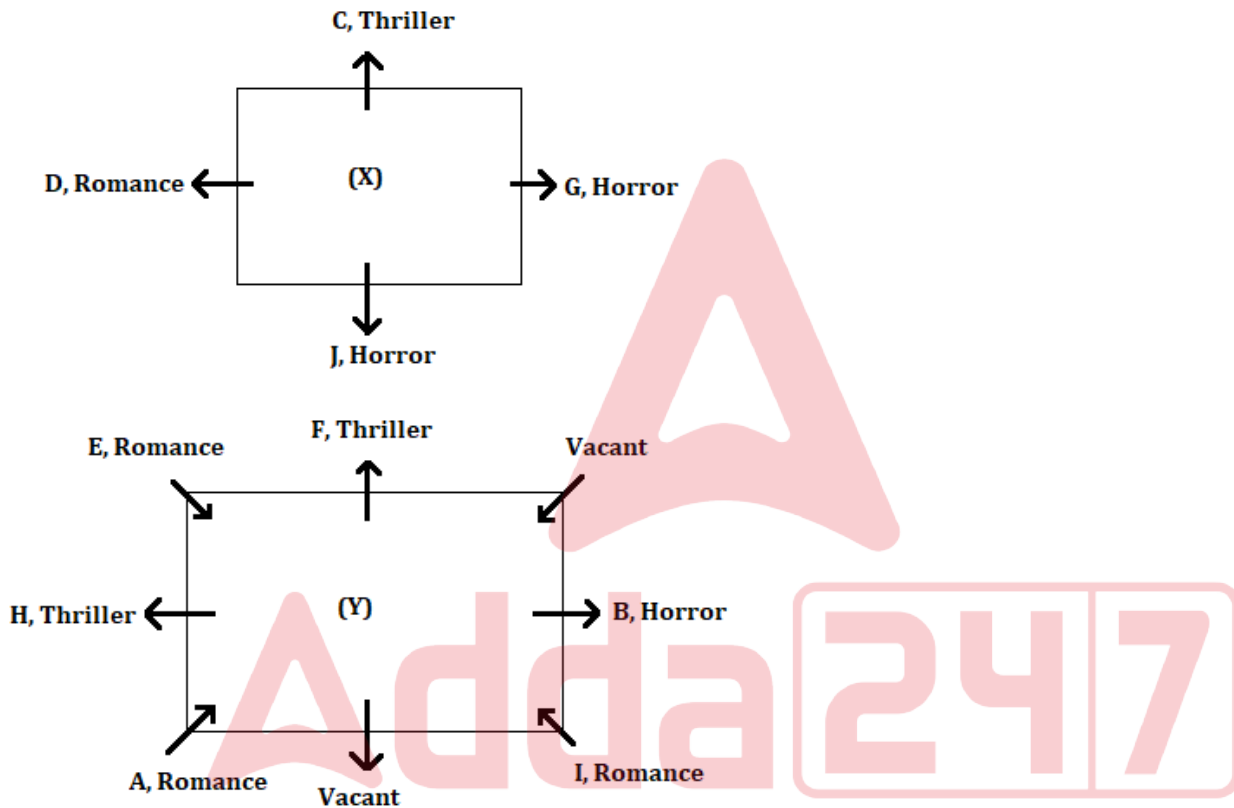
**S20. Ans.(c)**
**Sol.** Statement (I)-True-Reason: Yes, it can be inferred as it has already been mentioned in the given statement Arvind Kejriwal as opposition leader.

Statement (II)-True-Reason: Opposition and state government too are demanding to postpone because if exam will be happened, there will be gathering of crowd. And crowd means there will be full chance of increase in case of Covid-19.

Statement (III)-False-Reason: Nowhere given or indicated in statement that Central government is responsible for postponement of state exams.
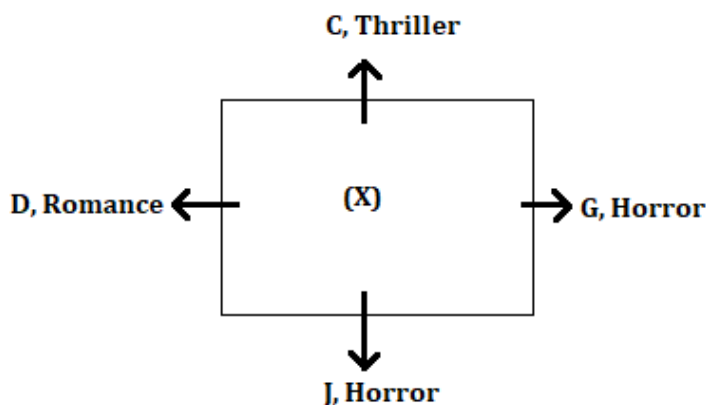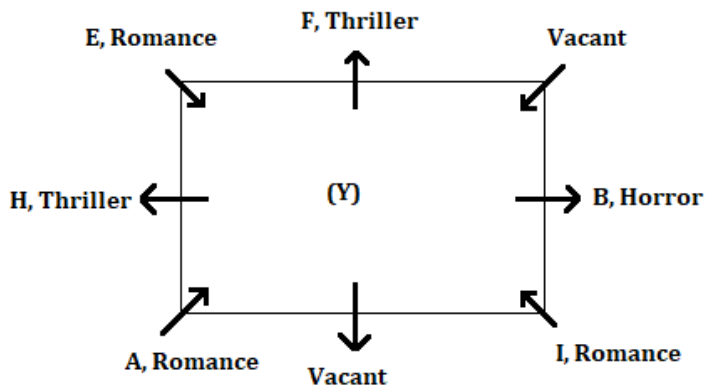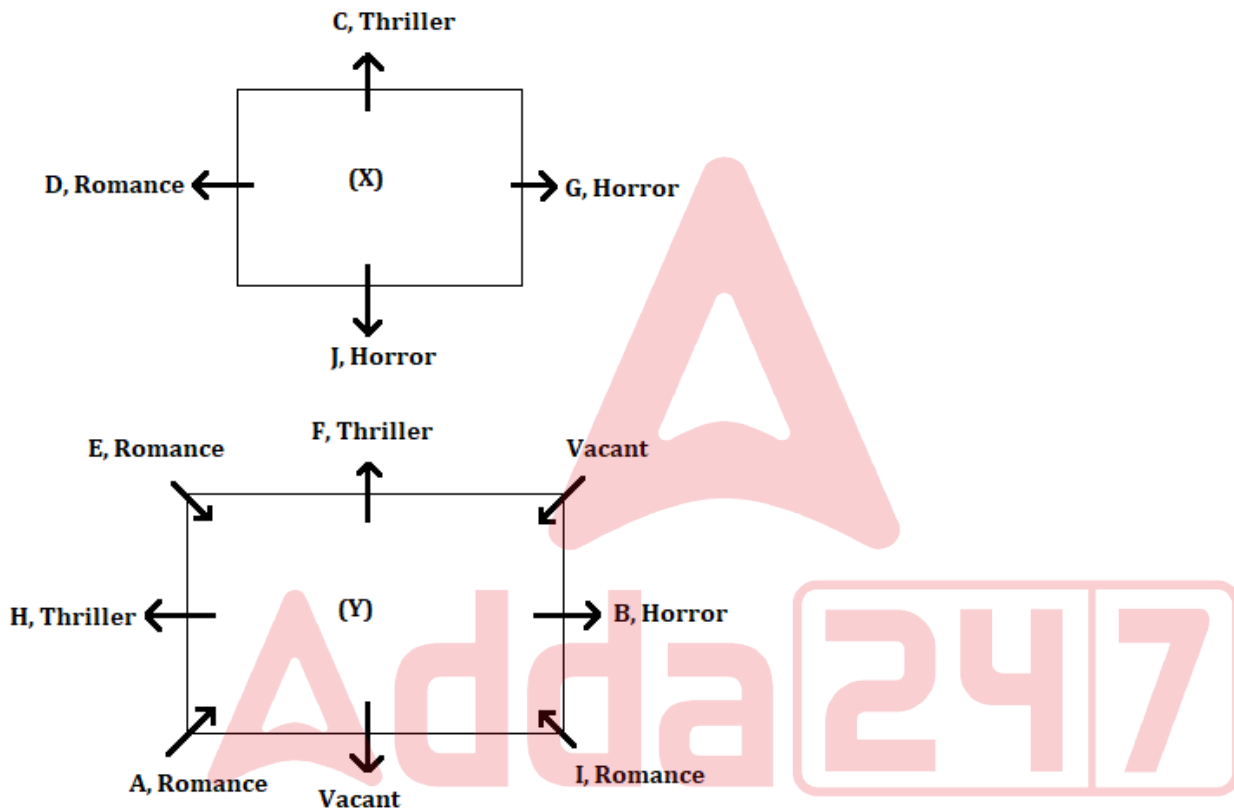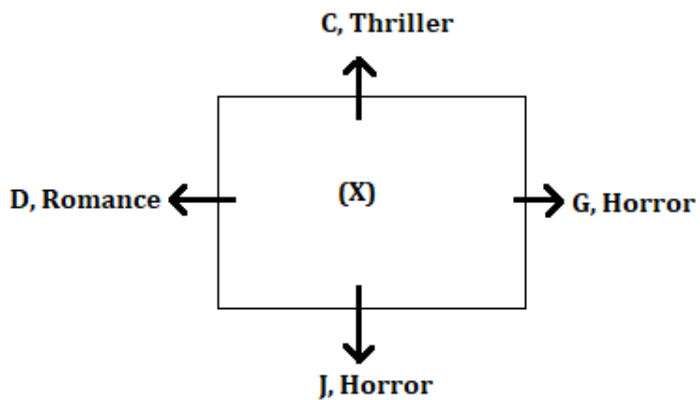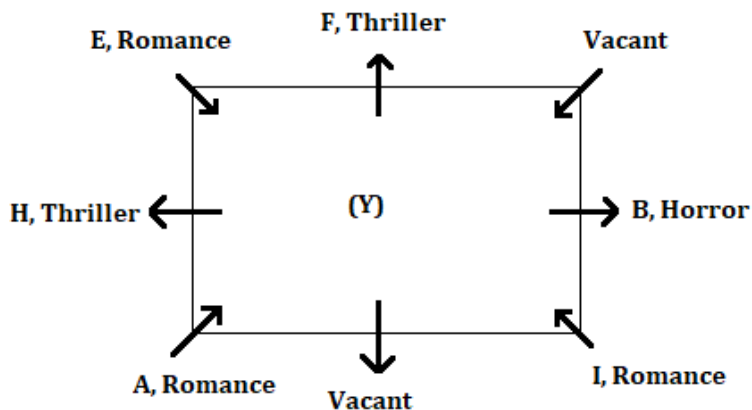
**S21. Ans.(c)**
**Sol.**



**S22. Ans.(e)**
**Sol.**

```
   E, Romance        F, Thriller           Vacant
        ↘                ↑                   ↙
         ┌──────────────────────────────────┐
         │                                  │
H, Thriller ←         (Y)                   → B, Horror
         │                                  │
         └──────────────────────────────────┘
        ↗                ↓                   ↖
   A, Romance         Vacant             I, Romance
```

**S23. Ans.(c)**
**Sol.**

```
                    C, Thriller
                        ↑
         ┌──────────────────────────────┐
         │                              │
D, Romance ←          (X)               → G, Horror
         │                              │
         └──────────────────────────────┘
                        ↓
                    J, Horror
```

```
   E, Romance        F, Thriller           Vacant
        ↘                ↑                   ↙
         ┌──────────────────────────────────┐
         │                                  │
H, Thriller ←         (Y)                   → B, Horror
         │                                  │
         └──────────────────────────────────┘
        ↗                ↓                   ↖
   A, Romance         Vacant             I, Romance
```

**S24. Ans.(b)**
**Sol.**

```
                    C, Thriller
                        ↑
         ┌──────────────────────────────┐
         │                              │
D, Romance ←          (X)               → G, Horror
         │                              │
         └──────────────────────────────┘
                        ↓
                    J, Horror
```

Diagram showing arrangement:
- E, Romance (top-left, arrow pointing down-right)
- F, Thriller (top-center, arrow pointing up)
- Vacant (top-right, arrow pointing down-left)
- H, Thriller (left, arrow pointing left)
- (Y) (center)
- B, Horror (right, arrow pointing right)
- A, Romance (bottom-left, arrow pointing up-left)
- Vacant (bottom-center, arrow pointing down)
- I, Romance (bottom-right, arrow pointing up-right)

## S25. Ans.(e)
**Sol.** Statement (I)-True-Reason: Ban was declared just after giving a 40-minute speech. So, people had not proper time to collect appropriate cash of the notes which was in use either it be Rs, 10, 50 or 100 notes.
Statement (II) Statement (II)-True-Reason: Calling a decision of government, a draconian scheme it means they had certainly faced many hardships in their daily activities.
Statement (III) Statement (III)-True-Reason: In question it has been asked, what would have been the reason to call it a draconian scheme, it might be one of the reasons that the one who was earning black money in huge amount, their earning stopped suddenly.

## S26. Ans.(a)
**Sol.** Statement (I)-True-Reason: If Government had taken decision by keeping in mind to curb the corruption, then we can assume that corruption would have been go down.
Statement (II)-False-Reason: From the given statement we can assume that India is a big economical having higher GDP than many countries, but we can't hypothesize that India among top5.
Statement (III)-True-Reason: As most of the countrymen has supported the decision, then we can assume that they wanted to stop the corruption.

## S27. Ans.(d)
**Sol.** Statement (I)-False-Reason: It supports the motive of Central Government to curb the corruption.
Statement (II)-True-Reason: It negates the motive as a former CEO has been arrested with heavy corruption charges.
Statement (III)-True-Reason: It negates the motive as a heavy amount of black money has been seized from the top businessmen of different states.

## S28. Ans.(e)
**Sol.**
**Final arrangement:**

| Persons | A | B | C | D | E | F | G | H |
|---|---|---|---|---|---|---|---|---|
| Experience (in years) | 2 | 5 | 10 | 7 | 4 | 8 | 11 | 3 |
| Marks | 18 | 16 | 9 | 20 | 10 | 6 | 27 | 19 |
| Qualification | HR | Diploma | Diploma | HR | HR | Diploma | HR | HR |
| Department | Research | Agriculture | Agriculture | Research | Research | Agriculture | Agriculture | Research |

**S29. Ans.(c)**
**Sol.**
Final arrangement:

| Persons | A | B | C | D | E | F | G | H |
|---|---|---|---|---|---|---|---|---|
| Experience (in years) | 2 | 5 | 10 | 7 | 4 | 8 | 11 | 3 |
| Marks | 18 | 16 | 9 | 20 | 10 | 6 | 27 | 19 |
| Qualification | HR | Diploma | Diploma | HR | HR | Diploma | HR | HR |
| Department | Research | Agriculture | Agriculture | Research | Research | Agriculture | Agriculture | Research |

**S30. Ans.(d)**
**Sol.**
Final arrangement:

| Persons | A | B | C | D | E | F | G | H |
|---|---|---|---|---|---|---|---|---|
| Experience (in years) | 2 | 5 | 10 | 7 | 4 | 8 | 11 | 3 |
| Marks | 18 | 16 | 9 | 20 | 10 | 6 | 27 | 19 |
| Qualification | HR | Diploma | Diploma | HR | HR | Diploma | HR | HR |
| Department | Research | Agriculture | Agriculture | Research | Research | Agriculture | Agriculture | Research |

**S31. Ans.(d)**
**Sol.**

| | 5am | 6am | 7am | 8am |
|---|---|---|---|---|
| Platform 1 | K | C | D | B |
| Platform 2 | ---- | S | H | G |
| Platform 3 | ---- | ---- | K | M |
| Platform 4 | ---- | ---- | ---- | C |

**S32. Ans.(b)**
**Sol.**

| | 5am | 6am | 7am | 8am |
|---|---|---|---|---|
| Platform 1 | K | C | D | B |
| Platform 2 | ---- | S | H | G |
| Platform 3 | ---- | ---- | K | M |
| Platform 4 | ---- | ---- | ---- | C |

**S33. Ans.(a)**
**Sol.**

| | 5am | 6am | 7am | 8am |
|---|---|---|---|---|
| Platform 1 | K | C | D | B |
| Platform 2 | ---- | S | H | G |
| Platform 3 | ---- | ---- | K | M |
| Platform 4 | ---- | ---- | ---- | C |

**S34. Ans.(c)**
**Sol.**

|            | 5am  | 6am  | 7am  | 8am |
|------------|------|------|------|-----|
| Platform 1 | K    | C    | D    | B   |
| Platform 2 | ---- | S    | H    | G   |
| Platform 3 | ---- | ---- | K    | M   |
| Platform 4 | ---- | ---- | ---- | C   |

**S35. Ans.(e)**
**Sol.** Both the Statement I and II are effects of some common causes. And cause is increasing case of covid 19. Central government has been trying to increase medical infrastructure. And players have withdrawn their name due to fear.

**S36. Ans.(a)**
**Sol.**



**S37. Ans.(b)**
**Sol.**
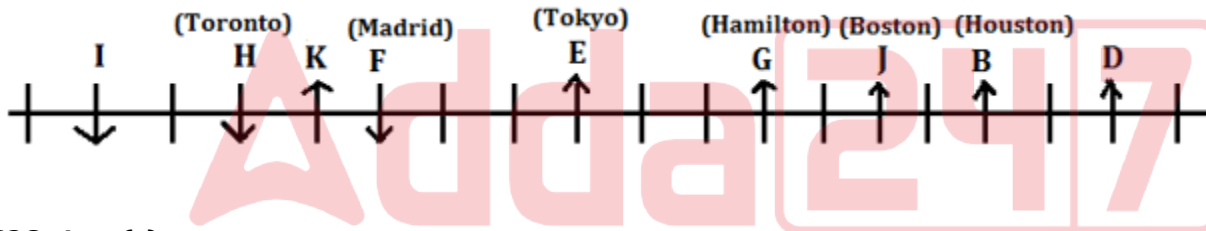


**S38. Ans.(c)**
**Sol.**
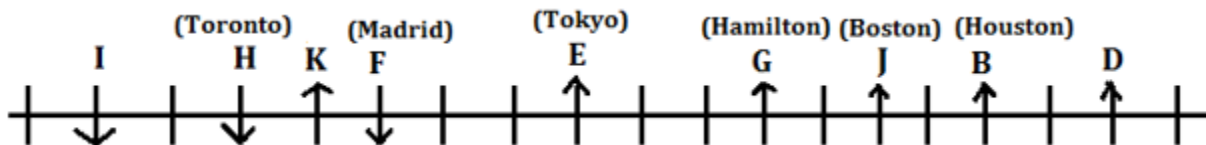


**S39. Ans.(d)**
**Sol.**
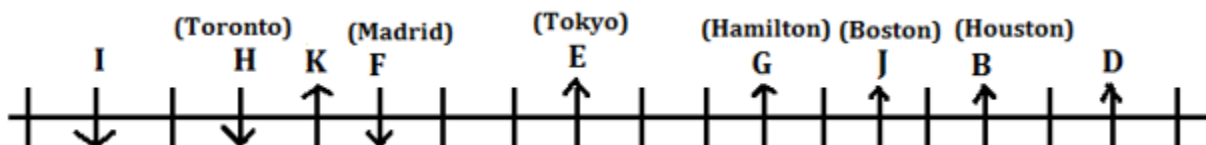
## S40. Ans.(e)
**Sol.** From all statements I, II and III, we get that E faces Q.

```
        L   M   K   N   Q   O
Row 1   |   |   |   |   |   |
        ↓   ↓   ↓   ↓   ↓   ↓

Row 2   ↑   ↑   ↑   ↑   ↑   ↑
        |   |   |   |   |   |
        D   B   F   A   E   C
```
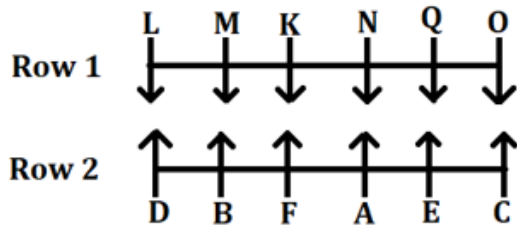
## S41. Ans.(e)
**Sol.** A will attend the function in May.

| Months | Persons |
|---|---|
| January | O |
| March | D |
| April | P |
| May | A |
| July | N |
| August | C |
| November | M |
| December | B |

## S42. Ans.(d)
**Sol.**

```
D(+) ═══ P(-) ─── R(+)
          |
         M(+) ═══ B(-) ─── S(-)
          |                 |
         T(+)              N(+)
```

| Year | Age | Person |
|---|---|---|
| 1952 | 71 | P |
| 1956 | 67 | R |
| 1962 | 61 | D |
| 1981 | 42 | M |
| 1984 | 39 | S |
| 1987 | 36 | B |
| 2014 | 9 | N |
| 2017 | 6 | T |

## S43. Ans.(c)
**Sol.**
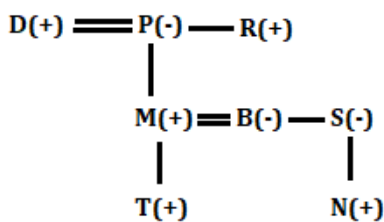
```
D(+) ═══ P(-) ─── R(+)
          |
         M(+) ═══ B(-) ─── S(-)
          |                 |
         T(+)              N(+)
```

| Year | Age | Person |
|------|-----|--------|
| 1952 | 71 | P |
| 1956 | 67 | R |
| 1962 | 61 | D |
| 1981 | 42 | M |
| 1984 | 39 | S |
| 1987 | 36 | B |
| 2014 | 9 | N |
| 2017 | 6 | T |

**S44. Ans.(b)**
**Sol.**



| Year | Age | Person |
|------|-----|--------|
| 1952 | 71 | P |
| 1956 | 67 | R |
| 1962 | 61 | D |
| 1981 | 42 | M |
| 1984 | 39 | S |
| 1987 | 36 | B |
| 2014 | 9 | N |
| 2017 | 6 | T |

**S45. Ans.(d)**
**Sol.**



**S46. Ans.(d)**
**Sol.** The correct rearrangement of the words is BAC/BCA.
The scientist's **presentation (B)** on quantum physics was filled with technical terms that **obfuscated (A)** the topic for most of the audience, leaving them **bewildered (C)** and struggling to grasp the concepts.
The scientist's **presentation (B)** on quantum physics was filled with technical terms that **bewildered (C)** the topic for most of the audience, leaving them **obfuscated (A)** and struggling to grasp the concepts.
**Obfuscated**: Rendered unclear or unintelligible, often deliberately.
**Bewildered**: Confused, perplexed, or deeply puzzled.

**S47. Ans.(d)**
**Sol.** The correct rearrangement of the words is ABC/ACB.
The company's management team was divided into two **factions (A)**, with one group **overtly (B)** advocating for a new product launch, while the other group **covertly (C)** worked to undermine the project behind the scenes.
The company's management team was divided into two **factions (A)**, with one group **covertly (C)** advocating for a new product launch, while the other group **overtly (B)** worked to undermine the project behind the scenes.
**Factions**: Small, organized groups within a larger organization or body, often with conflicting interests.
**Overtly**: Openly, without concealment or secrecy.
**Covertly**: Secretly or in a way that is not openly acknowledged.

**S48. Ans.(e)**
**Sol.** The correct rearrangement is ABC/BAC/CAB
The scientist, known for his **methodical (A)** and **deliberate (B)** research approach, embarked on a **ponderous (C)** study, carefully collecting and analyzing data over the course of several years to arrive at his groundbreaking discoveries.
The scientist, known for his **deliberate (B)** and **methodical (A)** research approach, embarked on a **ponderous (C)** study, carefully collecting and analyzing data over the course of several years to arrive at his groundbreaking discoveries.
The scientist, known for his **ponderous (C)** and **methodical (A)** research approach, embarked on a **deliberate (B)** study, carefully collecting and analyzing data over the course of several years to arrive at his groundbreaking discoveries.
**Methodical**: Performed or arranged in a systematic way; characterized by careful and orderly planning.
**Deliberate**: Done consciously and intentionally; carefully considered.
**Ponderous**: Having great weight

**S49. Ans.(b)**
**Sol.** The correct rearrangement is ABC/BAC.
As the young musician carefully **plucked (A)** the strings of his guitar, he **struck (B)** a chord that resonated through the room, **poking (C)** the audience's attention with the deliberate and melodious rhythm.
As the young musician carefully **struck (B)** the strings of his guitar, he **plucked (A)** a chord that resonated through the room, **poking (C)** the audience's attention with the deliberate and melodious rhythm.

**S50. Ans.(b)**
**Sol.** The correct rearrangement of the words is ABC/ACB.
In the world of modern **technology (A)**, the inner workings of cutting-edge quantum computers may seem **esoteric (B)** to most, but the smartphones we use daily have become utterly **ubiquitous (C)**, altering the way we live and connect with the world.
In the world of modern **technology (A)**, the inner workings of cutting-edge quantum computers may seem **ubiquitous (C)** to most, but the smartphones we use daily have become utterly **esoteric (B)**, altering the way we live and connect with the world.
**Esoteric**: Intended for or understood by only a small number of people with special knowledge; obscure or mysterious.
**Ubiquitous**: Present, appearing, or found everywhere; widespread.

**S51. Ans.(b)**
**Sol.** In this case, the appropriate option to fill in the blank space is:
(b) Yes, I do have a question. I'd like to know more about the team I'll be working with and the main projects I'd be involved in.
This option maintains the flow of the conversation and aligns with the content in paragraphs I and III, where the interviewee is asking about the team and projects.

**S52. Ans.(d)**
**Sol.** The correct option to fill in the blank space is:
(d) Economic success thrives on diversification, expanding beyond traditional sectors to invest in technology and services, enhancing resilience, and job market dynamism.
The chosen option (d) complements paragraph (I), where it is discussed that the country's economic growth has been driven by factors like domestic demand, strategic investments in key sectors, and innovation. Option (d) reinforces the idea that economic success thrives on diversification, emphasizing the importance of moving beyond traditional economic sectors and investing in technology and services to enhance economic resilience and create a dynamic job market. It aligns well with the theme of economic growth and diversification presented in paragraph (I).

**S53. Ans.(a)**
**Sol.** The most appropriate option to fill in the blank space is:
(a) In today's globalized world, access to quality education is essential for reducing inequality and achieving sustainable development.
Option (a) introduces the topic of access to quality education in the context of reducing inequality and promoting sustainable development, aligning well with the themes presented in the previous paragraphs.

**S54. Ans.(c)**
**Sol.** The most appropriate option to start the paragraph is:
(c) Water, the lifeblood of agriculture, has always played a pivotal role in the success of farming practices. However, the world is facing a growing challenge: water scarcity.
This option introduces the theme of water scarcity and its impact on agriculture.

**S55. Ans.(d)**
**Sol.** The most suitable sentence to complete the passage is:
(d) The process of mixing flour, sugar, and eggs to create delicious treats not only satiates our taste buds but also brings happiness and nourishes our soul.
This sentence reinforces the idea that baking is not just about satisfying taste buds but also about bringing happiness and nourishing the soul, aligning with the passage's theme.

**S56. Ans.(a)**
**Sol.** The error lies in the Part (A). The error in the sentence is related to subject-verb agreement. The subject "Scientists" is a plural noun, and the verb "has" is in the singular form, which is incorrect. The verb should agree in number with the plural subject. Thus, the verb "has" should be replaced with "have".

**S57. Ans.(e)**
**Sol.** The given sentence is grammatically correct.

**S58. Ans.(a)**
**Sol.** The error in the sentence is in part (A). To maintain consistency, the correct form should be "One of the students" in part (A) so that it aligns with the rest of the sentence.

**S59. Ans.(b)**
**Sol.** The error lies in Part (B). The error in using "among" instead of "between" lies in the context of connecting two distinct entities. The phrase "between" is typically used to establish a relationship or connection between two specific objects, individuals, or concepts. In this case, the sentence intends to highlight the association between air pollution levels (one entity) and the incidence of type 2 diabetes (another entity).
Using "among" suggests a connection among multiple entities, implying that air pollution levels are somehow linked to a group of factors related to type 2 diabetes. However, the sentence only focuses on the direct relationship between these two entities.

**S60. Ans.(e)**
**Sol.** The given sentence is grammatically correct.

**S61. Ans.(d)**
**Sol.** The error lies in the Part (D). The error in the sentence is related to parallelism. Parallelism is the balanced structure of a sentence, ensuring that similar elements are presented in a consistent form.
In this case, the sentence includes a list of activities ("watching videos" and "browsing websites"), and for parallelism, both items in the list should follow the same structure. The verb "browse" does not match the form of "watching." To correct the parallel structure, both activities should be in the gerund form (the -ing form):

**S62. Ans.(a)**
**Sol.** The correct option to complete the sentence is: (a) meticulous, scrutinize, complex
So, the sentence would be:
The investigator, with **meticulous** attention to detail, proceeded to **scrutinize** every piece of evidence, hoping to uncover the elusive truth behind the **complex** case.
Meticulous: Showing great attention to detail; extremely careful and precise in work or tasks.
Scrutinize: To examine or inspect closely and thoroughly, often with critical attention to details.
Complex: Having many interconnected parts; intricate or complicated in structure.
The other options are not relevant to the sentence's context:
"Scandalous" means disgraceful or shocking in a negative way.
"Ratify" means to approve or confirm formally.
"Complicated" means having many parts or being intricate.
"Trivial" means of little importance or significance.
"Foresee" means to predict or anticipate.
"Veiled" means concealed or disguised.

"Virtuous" means having high moral standards or qualities.

"Qualify" means to meet the necessary requirements.

"Obvious" means clear and easily understood.

"Vivid" means highly detailed or colorful.

"Ridicule" means to mock or make fun of.

"Intricate" means very detailed and complex.

### S63. Ans.(c)

**Sol.** The correct option to complete the sentence is: (c) pragmatic, practical, idealistic

So, the sentence would be:

In the face of the challenging situation, she took a **pragmatic** approach, focusing on **practical** solutions rather than getting lost in **idealistic** theories.

Pragmatic: Dealing with problems or situations in a practical and realistic way, rather than being guided by theory or dogma.

Practical: Concerned with the actual implementation or application of ideas or solutions in a real-world context.

Idealistic: Characterized by pursuing high or noble ideals, often without regard to practical considerations, and often having a vision of perfection.

The other options are not relevant to the sentence's context:

"Opportunistic" refers to taking advantage of opportunities for personal gain.

"Delusional" means having false or irrational beliefs or perceptions.

"Durable" means able to withstand wear, pressure, or damage over time.

"Historic" refers to something significant in history.

"Feasible" means capable of being accomplished.

"Realistic" means practical or achievable within the constraints of reality.

"Implemented" means put into action or carried out.

"Obstruse" means difficult to understand or obscure.

"Inevitable" means certain to happen or unavoidable.

"Probable" means likely to occur or be true.

### S64. Ans.(d)

**Sol.** The correct option to complete the sentence is: (d) eloquent, captivated, conveyed

So, the sentence would be:

His **eloquent** speech at the conference **captivated** the audience and **conveyed** his deep knowledge on the subject.

Eloquent: Fluent or persuasive in speaking or writing; able to express thoughts and ideas clearly and effectively.

Captivated: Attracting and holding the interest and attention of someone, often because of being fascinating or emotionally engaging.

Conveyed: Communicated or expressed a message or information to others, often through words, actions, or gestures.

The other options are not relevant to the sentence's context:

"Vocal" refers to relating to the voice or speech.

"Intimidated" means feeling frightened or threatened.

"Perplexed" means confused or puzzled.

"Exquisite" means extremely beautiful, delicate, or finely made.

"Incapacitated" means disabled or unable to function effectively.

"Radical" refers to being far-reaching or extreme in nature.

"Repelled" means to be driven away or disgusted by something.

"Illustrated" means to have made something clear or explained through examples or visual aids.

"Verbal" relates to spoken language or communication.

"Strengthen" means to make something stronger or more robust.

"Intrigued" means being interested or curious about something and wanting to know more.

**S65. Ans.(b)**

**Sol.** The correct option to complete the sentence is: (b) tenacious, breakthrough, ultimately

So, the sentence would be:

His **tenacious** pursuit of the truth led to the **breakthrough** that **ultimately** solved the long-standing mystery.

Tenacious: Holding fast or firm, characterized by persistence and determination in pursuing a goal or objective.

Breakthrough: A significant advancement, discovery, or achievement, often implying a notable and positive development.

Ultimately: Refers to something happening or being resolved in the end or eventually.

The other options are not relevant to the sentence's context:

"Preserving" means protecting or maintaining something in its original state.

"Dimension" refers to a measurement or aspect of an object.

"Apologetically" means with an apology or expression of regret.

"Conundrum" is a confusing or difficult problem or puzzle.

"Hesitation" is a pause or delay in taking action or making a decision.

"Indifferent" means showing no interest or concern.

"Breach" is a violation or gap in something that should be whole or complete.

"Gradually" means occurring or developing slowly over time.

"Apathetic" refers to a lack of interest or enthusiasm.

"Zenith" is the highest point or peak.

"Mistakenly" means in error or by accident.

**S66. Ans.(c)**

**Sol.** The correct option to complete the sentence is: (c) conundrum, limited, consideration

So, the sentence would be:

The **conundrum** of how to allocate the **limited** resources among competing projects required careful **consideration**.

Conundrum: A confusing or difficult problem or puzzle, often one that requires careful thought to solve.

Limited: Restricted in quantity, quality, or extent, indicating that there is not an abundant supply or available resources are constrained.

Consideration: The process of thinking carefully about something, or the act of taking various factors or aspects into account when making a decision or forming a judgment.

The other options are not relevant to the sentence's context:

"Candor" means honesty or frankness in expressing one's thoughts or feelings.

"Restricted" refers to being limited or confined in some way.

"Analysis" is the process of examining something closely or in detail.

"Procedure" is a series of steps or actions to accomplish a particular task.

"Inexhaustible" means incapable of being used up or depleted.

"Judgment" is the ability to make considered decisions or form opinions.

"Zealous" refers to having a strong and enthusiastic commitment to a cause or goal.

"Futuristic" relates to something ahead of its time or related to the future.

"Admiration" is a feeling of respect or approval for someone or something.

"Mechanism" is a system or process designed to perform a specific function.

"Vicarious" relates to experiencing something through another person.

"Precautions" are measures taken in advance to prevent harm or danger.

**S67. Ans.(e)**

**Sol.** The correct option to complete the sentence is: (e) alleviate, quixotic, wavered

So, the sentence would be:

The charity's mission to **alleviate** poverty was a **quixotic** endeavour, but their dedication never **wavered**.

Alleviate: To make suffering or a problem less severe or more bearable.

Quixotic: Extremely idealistic, unrealistic, and impractical, often to the point of being foolish.

Wavered: To show hesitation or uncertainty in one's commitment or determination.

The other options do not fit the sentence's context:

"Elevate" means to lift up or raise to a higher position.

"Prosecute" means to initiate legal proceedings against someone.

"Prolific" means producing many works, results, or offspring.

"Sycophant" is a person who acts obsequiously toward someone important to gain an advantage.

"Malfeasance" is wrongdoing, especially by a public official.

"Serendipity" refers to the occurrence of events by chance in a happy or beneficial way.

"Capitulate" means to surrender or yield to an opponent or demand.

"Reckless" means showing a lack of caution or consideration.

"Blurred" means made unclear or indistinct.

**S68. Ans.(b)**

**Sol.** Refer to the lines, "In an epoch characterized by the ceaseless generation and utilization of data across sundry devices, systems, and applications, the peril of clandestine data access is exponentially exacerbated."

Option (b) emphasizes that the continuous generation and utilization of data across various devices and applications contribute to the potential for unauthorized access. In an era marked by extensive data creation and usage across diverse technological platforms, the increased prevalence of information provides more opportunities for unauthorized entities to access and exploit sensitive data. The interconnectedness and constant flow of data across different devices and applications create a heightened risk of unauthorized access, making it imperative for organizations to address security challenges associated with this pervasive data landscape.

**S69. Ans.(c)**

**Sol.** Refer to the lines, "The repercussions of data breaches transcend mere pecuniary ramifications, precipitating deleterious effects on an organization's reputational standing and instigating punitive measures from regulatory bodies."

The correct answer is (c) Both (I) and (II).

Explanation:

(I) "Businesses may suffer reputational damage due to breaches of trust and the perception that they cannot adequately protect sensitive data": This statement reflects the potential consequence of a data breach on the reputation of a business. When customers perceive that a company has failed to protect their sensitive data, it can lead to a decline in trust and a negative impact on the company's reputation.

(II) "Financial losses through theft, fraud, or the compromise of sensitive financial information": This statement highlights another potential consequence of failing to mitigate the risk of unauthorized access. A data breach can result in financial losses for businesses, as sensitive financial information may be stolen or compromised, leading to fraud or other financial liabilities.

(III) "A diminution in customer satisfaction resulting from the dissemination of data pertaining to a company's product.": This option about a diminution in customer satisfaction resulting from the dissemination of data pertaining to a company's product is not explicitly mentioned in the explanation provided for the potential consequences of failing to mitigate the risk of unauthorized access in the passage. Therefore, option (III) is not a correct consequence in this context.

Hence, the correct answer is (c) Both (I) and (II).

## S70. Ans.(c)

**Sol.** Refer to the lines, "Cyber threat actors, whether individuals or groups, employ various methods, such as malware or phishing emails, to breach corporate networks."

Option (c) "Utilizing standard network monitoring tools to detect and address typical network issues": cannot be considered as a data breach in the realm of cyber threats because standard network monitoring is a legitimate and essential cybersecurity practice. It involves using tools to oversee network activities, identify performance issues, and address routine network concerns. This activity is not associated with unauthorized access, manipulation, or compromise of sensitive data, which are characteristic elements of a data breach.

In contrast, options (a), (b), and (d) describe actions or events that could potentially result in a data breach:

(a) Tricking individuals into revealing sensitive data refers to phishing or social engineering attacks, which can lead to unauthorized disclosure of information.

(b) Malware infections exploiting vulnerabilities to compromise computer systems involve unauthorized access or manipulation of data through the deployment of malicious software.

(d) Insider threats involving malicious actions or negligence from within an organization describe situations where individuals within the organization pose a risk to the security of data.

Therefore, option (c) is the correct choice as it does not represent an action that can be considered a data breach.

## S71. Ans.(e)

**Sol.** The passage does not explicitly provide information on the specific strategies or methods that businesses employ to navigate compliance with stringent data protection regulations. While it mentions the pervasive nature of data breaches, the need for organizational prioritization of preventative and responsive strategies, and the response of international jurisdictions through data protection and privacy statutes, it does not delve into the detailed actions or approaches taken by businesses to ensure compliance. As a result, option (e) "The passage does not provide enough information" is the most accurate choice, as the passage does not explicitly address the specific tactics or steps businesses take in navigating compliance with stringent data protection regulations.

**S72. Ans.(b)**
**Sol.** The most suitable word to fill in the blank is "absconds"
Here are the meanings of the provided words:
(a) Elucidates: To make something clear or explain it in a way that is easy to understand; to clarify or illuminate.
(b) Absconds: To leave hurriedly and secretly, typically to avoid detection or arrest; to depart suddenly and covertly.
(c) Vilifies: To speak or write about someone in an abusive or defamatory manner; to slander or criticize harshly.
(d) Exacerbates: To make a situation, problem, or negative feeling more intense, severe, or worse; to worsen or aggravate.
(e) Ruptured: To break or burst open, especially in a forceful or violent way; to tear apart or rupture.

**S73. Ans.(b)**
**Sol.** The tone of the passage is "**Informative**".
The passage provides information and analysis about data breaches, discussing their nature, methods employed by cyber threat actors, and the broader implications for organizations. It lacks the sarcastic or didactic tone and doesn't convey an overtly pessimistic or analytical stance.

**S74. Ans.(b)**
**Sol.** The most suitable word with a similar meaning to "**Ominous**" is: (b) threatening
Here are the meanings of the provided words:
(a) Propitious: Giving or indicating a good chance of success; favourable.
(b) Threatening: Expressing an intention to cause harm or danger; indicating a potential danger or harm.
(c) Cacophony: A harsh, discordant mixture of sounds; a jarring, unpleasant noise.
(d) Ubiquitous: Present, appearing, or found everywhere; being or seeming to be everywhere at the same time.
(e) Disparate: Essentially different in kind; distinct in quality or character; markedly distinct or different.

**S75. Ans.(a)**
**Sol.** Refer to the lines, "While voice recognition and speech recognition are often used interchangeably, they have distinct meanings. Voice recognition identifies the speaker, whereas speech recognition assesses the content of what is said."
The accurate representation of the specific focus of voice recognition in comparison to speech recognition is best encapsulated by option (a): "Voice recognition predominantly centers on discerning the speaker's identity rather than appraising the uttered content."

**S76. Ans.(c)**
**Sol.** Refer to the lines, "This digital database of words or syllables is then compared to signals during pattern recognition."
The correct answer is (c) Analyzing a digital repository of words or syllables, derived from converting analog audio into digital signals, and comparing it to incoming signals.

Explanation:

Pattern recognition, as described in the passage, involves comparing the digital database of words or syllables to incoming signals during the processing phase. This comparison is crucial for the system to recognize and interpret spoken words.

## S77. Ans.(d)

**Sol.** Refer to the lines, "Voice recognition involves analyzing speech through models like the hidden Markov model or recurrent neural networks. The former breaks down spoken words into phonemes, while the latter uses previous outputs to influence current inputs, improving capabilities and accuracy with increased data."

Explanation:

The hidden Markov model breaks down spoken words into smaller units called phonetic components or phonemes. This detailed analysis helps the voice recognition system better understand and recognize the unique patterns in the way people speak, making the overall voice recognition capabilities more accurate and effective.

## S78. Ans.(e)

**Sol.** The correct answer is (e) Both (b) and (d).

Refer to the lines, "As more users engage with voice recognition, the wealth of data generated enhances the capabilities and accuracy of these systems, indicating a promising trajectory for the technology's future."

Explanation:

The passage implies that the wealth of data is crucial for the positive development of voice recognition technology because it provides a diverse range of speech patterns, accents, and variations (option b). This diverse dataset enriches the system's database, contributing to its adaptability and accuracy. Furthermore, the passage also suggests that the abundance of data enhances the capabilities of voice recognition systems to accurately interpret and respond to a wide array of voices and linguistic nuances (option d). Therefore, both (b) and (d) accurately capture the reasons presented in the passage.

## S79. Ans.(a)

**Sol.** The most suitable word to fill the blank is: (a) advent

Meaning of words:

(a) Advent: The arrival or creation of something notable or significant, often used to refer to the beginning of a new era or development.

(b) Oblivious: Lacking awareness, attention, or memory of something; not conscious or mindful.

(c) Conservation: The act of preserving, protecting, or efficiently using resources, often in the context of the environment or natural resources.

(d) Adversity: Difficulties, misfortune, or unfavourable circumstances; facing challenges or hardship.

(e) Mundane: Ordinary, commonplace, or lacking excitement; pertaining to the ordinary aspects of everyday life.

## S80. Ans.(d)

**Sol.** The most appropriate choice that can substitute the three highlighted words in the passage in the same order is: (d) mandate, elevated, indispensable

Meaning of words:

(a) require, alleviated, vital:

require: to need or demand

alleviated: made less severe or more bearable

vital: essential; necessary for life or existence

(b) rationalize, progressed, exclusive:

rationalize: to make something seem reasonable or logical

progressed: advanced or moved forward

exclusive: limited to a particular group; not including all

(c) crucial, discern, inherent:

crucial: extremely important or necessary

discern: perceive or recognize; to distinguish with difficulty

inherent: existing in something as a permanent, essential, or characteristic attribute

(d) mandate, elevated, indispensable:

mandate: an official order or commission to do something

elevated: raised to a higher position; increased in rank or status

indispensable: absolutely necessary; essential

(e) impose, augmented, resilient:

impose: to establish or apply by authority

augmented: increased or enlarged, often in value or amount

resilient: able to withstand or recover quickly from difficult conditions; flexible

**S81. Ans.(d)**

**Sol.**

**For shop E**, total products sold on Monday and Tuesday = (100 − 30) % = 70%

Given, $70\% \times \frac{4}{7} = 15x$

40% = 15x

So, $100\% = \frac{15x}{40} \times 100 = \frac{75x}{2}$

**For shop C**, total products sold on Monday and Tuesday = (100 − 20) % = 80%

Given, $80\% \times \frac{5}{9} = 10x$

$\frac{400\%}{9} = 10x$

So. $100\% = \frac{10x \times 9}{400} \times 100$

$100\% = \frac{45x}{2}$

Given, $\frac{75x}{2} - \frac{45x}{2} = 120$

30x = 240

x = 8

| Shops | Ratio of total products sold on Monday and Tuesday (Monday: Tuesday) | Total number of products sold on Tuesday | % of products sold on Wednesday out of total products sold on all three days. |
|---|---|---|---|
| A | NA | $\frac{25}{2} \times 8 = 100$ | y% |
| B | 7 : 8 | NA | NA |
| C | 4 : 5 | 10 × 8 = 80 | 20% |
| D | NA | NA | (y − 5) % |
| E | 3 : 4 | 15× 8 =120 | 30% |

Total products sold by A on Monday = $100 \times \frac{8}{5} = 160$

Number of products sold by A on Wednesday = $160 \times \frac{87.5}{100} = 140$

So, y% = $\frac{140}{(160+140+100)} = 35\%$

Total products sold by D on Tuesday = $120 \times \frac{100-[40+(35-5)]}{100} = 36$

**S82. Ans.(d)**

**Sol.**

**For shop E**, total products sold on Monday and Tuesday = $(100 - 30)\% = 70\%$

Given, $70\% \times \frac{4}{7} = 15x$

$40\% = 15x$

So, $100\% = \frac{15x}{40} \times 100 = \frac{75x}{2}$

**For shop C**, total products sold on Monday and Tuesday = $(100 - 20)\% = 80\%$

Given, $80\% \times \frac{5}{9} = 10x$

$\frac{400\%}{9} = 10x$

So. $100\% = \frac{10x \times 9}{400} \times 100$

$100\% = \frac{45x}{2}$

Given, $\frac{75x}{2} - \frac{45x}{2} = 120$

$30x = 240$

$x = 8$

| Shops | Ratio of total products sold on Monday and Tuesday (Monday: Tuesday) | Total number of products sold on Tuesday | % of products sold on Wednesday out of total products sold on all three days. |
|---|---|---|---|
| A | NA | $\frac{25}{2} \times 8 = 100$ | y% |
| B | 7 : 8 | NA | NA |
| C | 4 : 5 | $10 \times 8 = 80$ | 20% |
| D | NA | NA | (y – 5) % |
| E | 3 : 4 | $15 \times 8 = 120$ | 30% |

Total number of products sold by shop B on Monday and Tuesday = $15 \times \frac{15}{1} = 225$

Also, total number of products sold by B on all three days = $225 \times \frac{8}{15} \times \frac{100}{20} = 600$

So, total number of products sold by B on Wednesday = 600 – 225 = 375

Total number of products sold by E on Wednesday = $120 \times \frac{7}{4} \times \frac{30}{70} = 90$

Required percentage = $\frac{90}{375} \times 100 = 24\%$

**S83. Ans.(b)**
**Sol.**

**For shop E**, total products sold on Monday and Tuesday = (100 – 30) % = 70%

Given, $70\% \times \frac{4}{7} = 15x$

40% = 15x

So, $100\% = \frac{15x}{40} \times 100 = \frac{75x}{2}$

**For shop C**, total products sold on Monday and Tuesday = (100 – 20) % = 80%

Given, $80\% \times \frac{5}{9} = 10x$

$\frac{400\%}{9} = 10x$

So. $100\% = \frac{10x \times 9}{400} \times 100$

$100\% = \frac{45x}{2}$

Given, $\frac{75x}{2} - \frac{45x}{2} = 120$

30x = 240

x = 8

| Shops | Ratio of total products sold on Monday and Tuesday (Monday: Tuesday) | Total number of products sold on Tuesday | % of products sold on Wednesday out of total products sold on all three days. |
|---|---|---|---|
| A | NA | $\frac{25}{2} \times 8 = 100$ | y% |
| B | 7 : 8 | NA | NA |
| C | 4 : 5 | 10 × 8 = 80 | 20% |
| D | NA | NA | (y – 5) % |
| E | 3 : 4 | 15× 8 =120 | 30% |

Total number of products sold by A on Monday = $2 \times 120 \times \frac{3}{4} = 180$

Total product sold by A on Wednesday = 350-100-180 = 70

$y\% = \frac{70}{350} \times 100$

y% = 20%

Total products sold by D on Wednesday = $120 \times \frac{20-5}{100} = 18$

Total products sold by C on Wednesday = $80 \times \frac{9}{5} \times \frac{20}{80} = 36$

Required ratio = 36 : 18 = 2 : 1

**S84. Ans.(c)**
**Sol.**

**For shop E**, total products sold on Monday and Tuesday = (100 – 30) % = 70%

Given, $70\% \times \frac{4}{7} = 15x$

40% = 15x

So, $100\% = \frac{15x}{40} \times 100 = \frac{75x}{2}$

**For shop C**, total products sold on Monday and Tuesday = (100 – 20) % = 80%

Given, $80\% \times \frac{5}{9} = 10x$

$\frac{400\%}{9} = 10x$

So. $100\% = \frac{10x \times 9}{400} \times 100$

$100\% = \frac{45x}{2}$

Given, $\frac{75x}{2} - \frac{45x}{2} = 120$

$30x = 240$

$x = 8$

| Shops | Ratio of total products sold on Monday and Tuesday (Monday: Tuesday) | Total number of products sold on Tuesday | % of products sold on Wednesday out of total products sold on all three days. |
|---|---|---|---|
| A | NA | $\frac{25}{2} \times 8 = 100$ | y% |
| B | 7 : 8 | NA | NA |
| C | 4 : 5 | $10 \times 8 = 80$ | 20% |
| D | NA | NA | (y – 5) % |
| E | 3 : 4 | $15 \times 8 = 120$ | 30% |

Total number of products sold by A in all the three days

$= 246 + \frac{3}{4} \times 120 + \frac{4}{5} \times 80 = 246 + 90 + 64 = 400$

Let the number of products sold by A on Monday and Wednesday be a

ATQ,

a + 100 + a = 400

2a = 300

a = 150

$y = \frac{150}{400} \times 100\%$

$y\% = \frac{75}{2}\%$

Required ratio = $\frac{8}{\frac{75}{2}} = 16 : 75$

**S85. Ans.(a)**
**Sol.**
Question attempted by A = 25% of 800 = 200
Question attempted by C = 24% of 800 = 192
**From I,**
If B attempted maximum number of questions
So, he attempts 240 according to the instruction
$x\% = \frac{240}{800} \times 100 = 30\%$
x + y = 100 – 25-24
x + y =51
y = 51-30 =21
So, required difference = 30-21 =9

**From II,** Value of $x > \frac{200}{800} \times 100 = 25\%$

Value of $y < \frac{190}{800} \times 100 = 23.75\%$

It will have multiple values we cannot find the exact value of $(x - y)$.

Hence, only (I) is required.


**S86. Ans.(e)**

**Sol.**

Question attempted by A = 25% of 800 = 200

Question attempted by C = 24% of 800 = 192

Total question attempted by C = 24% of 800 = 192

Let the question attempted by C in Mathematics and English be m and e respectively

$m + e = 192 - 54 = 138$

Also, m > e

e = 138 – m

ATQ,

138 – m > 54

84>m

And,

138 – m < m

69<m

Range = 69 < m < 84


**S87. Ans.(a)**

**Sol.**

Question attempted by A = 25% of 800 = 200

Question attempted by C = 24% of 800 = 192

Total questions attempted by A in history = 30% of 200 = 60

Let the incorrect questions and correct questions attempted by A be a and b respectively.

$a + b = 60$ ...(i)

$b \times 2 - a \times 1 = 66$

2b – a = 66 ...(ii)

Solving (i) and (ii)

We get b = 42 and a = 18


**S88. Ans.(b)**

**Sol.**

Distance travel by Ram = 520 km

Distance travel by Rahul = 360 km

Required difference = 520 – 360 = 160 km

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**S89. Ans.(c)**
**Sol.**
For minimum time,
Distance will be minimum
Path (i) - P -> Q ->S - > R
Path (ii) - P -> S - > R (minimum distance)
Total time = $\frac{520}{80} + \frac{600}{25} = 6.5 + 24 = 30.5\ hour$

**S90. Ans.(a)**
**Sol.**
Rahul travels from P to Q, then Q to S.
Let the fare between Q to S = Rs 120x
Distance between Q to S = 400 km
And the fare between P to Q = Rs 100x
Distance between P to Q = 240 km
ATQ,
72000 = 120x × 400 + 100x × 240
x = 1
Fare of taxi = 100x = Rs 100

**S91. Ans.(a)**
**Sol.**
Minimum time = minimum distance or maximum distance by faster mode of transport.
Distance between P to S = 520 km
Time = $\frac{520}{80} = 6.5\ hour$
Path between R to S
There is no direct path between R to S
Path (i) R -> P - > S (280 + 520 = 800 km)
Path (ii) R -> Q - > S (480+400 = 880 km)
Distance between R to S = 800 km
Minimum time = $\frac{280}{60} + \frac{520}{80} = 4\frac{2}{3} + 6.5 = 11\frac{1}{6}\ hour$
Required answer = $6.5 + 11\frac{1}{6} = 17\frac{2}{3}\ hour$

**S92. Ans.(c)**
**Sol.**
Let efficiency of C be 2u units/ day
Efficiency of B = $2u \times \frac{200}{100} = 4u$ units/ day
So, Efficiency of A = $4u \times \frac{3}{4} = 3u$ units/ day
Given, D did $\frac{1}{4}$th of work X.

So, A + B + C together completed $\frac{3}{4}$ th of work X

Let, $\frac{3}{4}$ th of work = 9 units

So, whole work = 12 units

Efficiency of D = 3u units/day

Total work = 7 × 12u = 84u unit

So, X = $\frac{84u}{7u}$

   X = 12

y = $\frac{84u}{6u}$

y = 14

P and Q together do the work 'Y' in (x+12) days = 12+12=24 days

Q and R together can do the work 'Y' in (y – 2) days = 12 days

P, Q and R together can do the work 'Y' in $\left(\frac{6x}{y-7}\right)$ days = $\frac{72}{7}$ days

Total work 'Y' = 72 units (LCM of 24, 12, and $\frac{72}{7}$)

P's efficiency = 1 units/days

Q's efficiency = 2 units/ days

R's efficiency = 4 units/days

Required percentage = $\frac{2-1}{1}$ × 100 = 100%


**S93. Ans.(b)**
**Sol.**

Let efficiency of C be 2u units/ day

Efficiency of B = 2u × $\frac{200}{100}$ = 4u units/ day

So, Efficiency of A = 4u × $\frac{3}{4}$ = 3u units/ day

Given, D did $\frac{1}{4}$ th of work X.

So, A + B + C together completed $\frac{3}{4}$ th of work X

Let, $\frac{3}{4}$ th of work = 9 units

So, whole work = 12 units

Efficiency of D = 3u units/day

Total work = 7 × 12u = 84u unit

So, X = $\frac{84u}{7u}$

   X = 12

y = $\frac{84u}{6u}$

y = 14

ATQ,

m × (12+9) = (14) × n

m × $\frac{3}{2}$ = $n$

And,

$(14) \times n = 7 \times (n+12)$

$2n = n + 12$

$n = 12$

So, m = 8

Let (n – m) men can complete same work in 'a' days

$(12-8) \times a = 8 \times (12+9)$

$a = 2 \times 21 = 42$ days

**S94. Ans.(e)**

**Sol.**

Let efficiency of C be 2u units/ day

Efficiency of B = $2u \times \frac{200}{100} = 4u$ units/ day

So, Efficiency of A = $4u \times \frac{3}{4} = 3u$ units/ day

Given, D did $\frac{1}{4}th$ of work X.

So, A + B + C together completed $\frac{3}{4}th$ of work X

Let, $\frac{3}{4}th \ of \ work$ = 9 units

So, whole work = 12 units

Efficiency of D = 3u units/day

Total work = 7 × 12u = 84u unit

So, X = $\frac{84u}{7u}$

X = 12

y = $\frac{84u}{6u}$

y = 14

Let the efficiency of a man and women be 'p' and 'q' unit(s)/day respectively.

ATQ,

$p \times m \times n = n \times q \times 2m$

$p : q = 2 : 1$

$p = 2q$

Total work = $(x \times 2q + 1.5y \times q) \times 20 = (12 \times 2q + 21 \times q) \times 20 = 900q \ units$

ATQ,

$(5 \times 2q + (14 + 1) \times q) \times D + q \times \frac{25D}{3} = 900q$

$25qD + \frac{25qD}{3} = 900q$

$\frac{75qD + 25qD}{3} = 900q$

$100qD = 2700q$

D = 27

**S95. Ans.(a)**
**Sol.**

**For restaurant P,**
Let total people visit P = 100x
People using debit card = 50% of 100x = 50x
People getting 10% cashback using debit card = 50% of 50x = 25x
People not getting any cashback using debit card = 50x – 25x = 25x
People using cash = 100x – 50x = 50x
People getting 2% cashback using cash = 30% of 50x = 15x
People not getting any cashback using cash = 50x – 15x = 35x

**For restaurant Q,**
Let total people visit Q = 100y
People using debit card = 40% of 100y = 40y
People getting 10% cashback using debit card = 30% of 40y = 12y
People not getting any cashback using debit card = 40y – 12y = 28y
People using cash = 100y – 40y = 60y
People getting 2% cashback using cash = 60% of 60y = 36y
People not getting any cashback using cash = 60y – 36y = 24y

**For restaurant R,**
Let total people visit R = 100z
People using debit card = 60% of 100z = 60z
People getting 10% cashback using debit card = 40% of 60z = 24z
People not getting any cashback using debit card = 60z – 24z = 36z
People using cash = 100z – 60z = 40z
People getting 2% cashback using cash = 50% of 40z = 20z
People not getting any cashback using cash = 40z – 20z = 20z

**For restaurant S,**
Let total people visit S = 100m
People using debit card = 70% of 100m = 70m
People getting 10% cashback using debit card = 40% of 70m = 28m
People not getting any cashback using debit card = 70m – 28m = 42m
People using cash = 100m – 70m = 30m
People getting 2% cashback using cash = 30% of 30m = 9m
People not getting any cashback using cash = 30m – 9m = 21m

| RESTURANT | DEBIT CARD USER | 10% CASHBACK USING DEBIT CARD | NO CASHBACK USING DEBIT CARD | CASH USER | 2% CASHBACK using cash | NO CASHBACK USING CASH |
| --- | --- | --- | --- | --- | --- | --- |
| P | 50x | 25x | 25x | 50x | 15x | 35x |
| Q | 40y | 12y | 28y | 60y | 36y | 24y |
| R | 60z | 24z | 36z | 40z | 20z | 20z |
| S | 70m | 28m | 42m | 30m | 9m | 21m |

ATQ,
400 = 25x
16 = x
Required answer = 25x + 15x= 640

**S96. Ans.(b)**
**Sol.**
**For restaurant P,**
Let total people visit P = 100x
People using debit card = 50% of 100x = 50x
People getting 10% cashback using debit card = 50% of 50x = 25x
People not getting any cashback using debit card = 50x – 25x = 25x
People using cash = 100x – 50x = 50x
People getting 2% cashback using cash = 30% of 50x = 15x
People not getting any cashback using cash = 50x – 15x = 35x
**For restaurant Q,**
Let total people visit Q = 100y
People using debit card = 40% of 100y = 40y
People getting 10% cashback using debit card = 30% of 40y = 12y
People not getting any cashback using debit card = 40y – 12y = 28y
People using cash = 100y – 40y = 60y
People getting 2% cashback using cash = 60% of 60y = 36y
People not getting any cashback using cash = 60y – 36y = 24y
**For restaurant R,**
Let total people visit R = 100z
People using debit card = 60% of 100z = 60z
People getting 10% cashback using debit card = 40% of 60z = 24z
People not getting any cashback using debit card = 60z – 24z = 36z
People using cash = 100z – 60z = 40z
People getting 2% cashback using cash = 50% of 40z = 20z
People not getting any cashback using cash = 40z – 20z = 20z
**For restaurant S,**
Let total people visit S = 100m
People using debit card = 70% of 100m = 70m
People getting 10% cashback using debit card = 40% of 70m = 28m
People not getting any cashback using debit card = 70m – 28m = 42m
People using cash = 100m – 70m = 30m
People getting 2% cashback using cash = 30% of 30m = 9m
People not getting any cashback using cash = 30m – 9m = 21m

| RESTURANT | DEBIT CARD USER | 10% CASHBACK USING DEBIT CARD | NO CASHBACK USING DEBIT CARD | CASH USER | 2% CASHBACK using cash | NO CASHBACK USING CASH |
|---|---|---|---|---|---|---|
| P | 50x | 25x | 25x | 50x | 15x | 35x |
| Q | 40y | 12y | 28y | 60y | 36y | 24y |
| R | 60z | 24z | 36z | 40z | 20z | 20z |
| S | 70m | 28m | 42m | 30m | 9m | 21m |

Total people who do not get cashback by using cash = 24y
100y = 800
8 = y
Required answer = 24y × 200 = Rs. 38400

**S97. Ans.(a)**

**Sol.**

**For restaurant P,**
Let total people visit P = 100x
People using debit card = 50% of 100x = 50x
People getting 10% cashback using debit card = 50% of 50x = 25x
People not getting any cashback using debit card = 50x – 25x = 25x
People using cash = 100x – 50x = 50x
People getting 2% cashback using cash = 30% of 50x = 15x
People not getting any cashback using cash = 50x – 15x = 35x

**For restaurant Q,**
Let total people visit Q = 100y
People using debit card = 40% of 100y = 40y
People getting 10% cashback using debit card = 30% of 40y = 12y
People not getting any cashback using debit card = 40y – 12y = 28y
People using cash = 100y – 40y = 60y
People getting 2% cashback using cash = 60% of 60y = 36y
People not getting any cashback using cash = 60y – 36y = 24y

**For restaurant R,**
Let total people visit R = 100z
People using debit card = 60% of 100z = 60z
People getting 10% cashback using debit card = 40% of 60z = 24z
People not getting any cashback using debit card = 60z – 24z = 36z
People using cash = 100z – 60z = 40z
People getting 2% cashback using cash = 50% of 40z = 20z
People not getting any cashback using cash = 40z – 20z = 20z

**For restaurant S,**
Let total people visit S = 100m
People using debit card = 70% of 100m = 70m
People getting 10% cashback using debit card = 40% of 70m = 28m
People not getting any cashback using debit card = 70m – 28m = 42m
People using cash = 100m – 70m = 30m
People getting 2% cashback using cash = 30% of 30m = 9m
People not getting any cashback using cash = 30m – 9m = 21m

| RESTURANT | DEBIT CARD USER | 10% CASHBACK USING DEBIT CARD | NO CASHBACK USING DEBIT CARD | CASH USER | 2% CASHBACK using cash | NO CASHBACK USING CASH |
|---|---|---|---|---|---|---|
| P | 50x | 25x | 25x | 50x | 15x | 35x |
| Q | 40y | 12y | 28y | 60y | 36y | 24y |
| R | 60z | 24z | 36z | 40z | 20z | 20z |
| S | 70m | 28m | 42m | 30m | 9m | 21m |

$100z = 3000$

$30 = z$

Required answer $= 40z - 24z = 480$

**S98. Ans.(a)**
**Sol.**
**For restaurant P,**
Let total people visit P = 100x
People using debit card = 50% of 100x = 50x
People getting 10% cashback using debit card = 50% of 50x = 25x
People not getting any cashback using debit card = 50x – 25x = 25x
People using cash = 100x – 50x = 50x
People getting 2% cashback using cash = 30% of 50x = 15x
People not getting any cashback using cash = 50x – 15x = 35x
**For restaurant Q,**
Let total people visit Q = 100y
People using debit card = 40% of 100y = 40y
People getting 10% cashback using debit card = 30% of 40y = 12y
People not getting any cashback using debit card = 40y – 12y = 28y
People using cash = 100y – 40y = 60y
People getting 2% cashback using cash = 60% of 60y = 36y
People not getting any cashback using cash = 60y – 36y = 24y
**For restaurant R,**
Let total people visit R = 100z
People using debit card = 60% of 100z = 60z
People getting 10% cashback using debit card = 40% of 60z = 24z
People not getting any cashback using debit card = 60z – 24z = 36z
People using cash = 100z – 60z = 40z
People getting 2% cashback using cash = 50% of 40z = 20z
People not getting any cashback using cash = 40z – 20z = 20z
**For restaurant S,**
Let total people visit S = 100m
People using debit card = 70% of 100m = 70m
People getting 10% cashback using debit card = 40% of 70m = 28m
People not getting any cashback using debit card = 70m – 28m = 42m
People using cash = 100m – 70m = 30m
People getting 2% cashback using cash = 30% of 30m = 9m
People not getting any cashback using cash = 30m – 9m = 21m

| RESTURANT | DEBIT CARD USER | 10% CASHBACK USING DEBIT CARD | NO CASHBACK USING DEBIT CARD | CASH USER | 2% CASHBACK using cash | NO CASHBACK USING CASH |
|-----------|-----------------|-------------------------------|-------------------------------|-----------|------------------------|------------------------|
| P | 50x | 25x | 25x | 50x | 15x | 35x |
| Q | 40y | 12y | 28y | 60y | 36y | 24y |
| R | 60z | 24z | 36z | 40z | 20z | 20z |
| S | 70m | 28m | 42m | 30m | 9m | 21m |

70m = 630

9 = m

Required answer = 9m = 81

**S99. Ans.(d)**
**Sol.**

(ABC $\times$ X)= 2634, only when X can be 3 or 6

But if we take X = 3 then tens place digit of ABC can't be half of X

So only possible case is when X is 6

$ABC \times X = 2634 = 439 \times 6$

X = 6

ABC = 439

Since, unit digit of 439 is 9, 439 is a prime number and sum of digits of 439 (4+3+9) is 16.

So, All (i), (ii) and (iii) are correct.

**S100. Ans.(a)**
**Sol.**

Let r, g, b, and y denotes as red, green, blue and yellow balls respectively.

Let red balls be 2a.

| Bag A | Bag B |
|-------|-------|
| r = 2a | r = 2a |
| g = a | g =a |
| b = 2a – 6 / 2a+6 | b = 2a+5/2a-5 |
| y = 3 + a | y= 3 + a |
| Average = 192/144 | average = 148 |
| When we take 192 and (2a + 6) or (2a−6) 'a' gets in fraction. | when we take 2a+5, 'a' gets in Fraction. |
| So, | 6a – 2 = 148 |
| 5a – 6 = 144 | a = 25 |
| a = 30 | |

Bag A: Red = 60, green = 30, blue = 54

Bag B: Red = 50, green = 25, blue = 45 & yellow = 28

**Quantity I –** (54 – 50) = 4

**Quantity II –** (28 − 25) = 3

**S101. Ans.(a)**
**Sol.**
B – 29 = X
Factors of X = 13, 5, A
A = 1
X = 65
B = 94
So, series is: 1, 29, 94, C, 437, 781, 1294
And the pattern follows;

| 1 | 29 | 94 | **220** | 437 | 781 | 1294 |
|---|---|---|---|---|---|---|
| | $3^3 + 1$ | $4^3 + 1$ | $5^3 + 1$ | $6^3 + 1$ | $7^3 + 1$ | $8^3 + 1$ |

C = 94 + 125 + 1 = **220**
A + C = 221

**S102. Ans.(c)**
**Sol.**
B – 29 = X
Factors of X = 13, 5, A
A = 1
X = 65
B = 94
So, series is: 1, 29, 94, C, 437, 781, 1294
And the pattern follows;

| 1 | 29 | 94 | **220** | 437 | 781 | 1294 |
|---|---|---|---|---|---|---|
| | $3^3 + 1$ | $4^3 + 1$ | $5^3 + 1$ | $6^3 + 1$ | $7^3 + 1$ | $8^3 + 1$ |

C = 94 + 125 + 1 = **220**
LCM of (1, 114) = 114

**S103. Ans.(b)**
**Sol.**
Series I:  60   120   24   48   9.6   19.2
Follows pattern = × 2,÷ 5,× 2,÷ 5, ... ...

| 60 | 120 | 24 | 48 | 9.6 | 19.2 |
|---|---|---|---|---|---|
| | ×2 | ÷5 | ×2 | ÷5 | ×2 |

Series II:  100   W   X   Y   Z   32
W = 200
X = 40
Y = 80
Z = 16
Required answer = 120 – 96 = 24

**S104. Ans.(d)**
**Sol.**
Series I: 60  120  24  48    9.6  19.2
Follows pattern = × 2,÷ 5,× 2,÷ 5, ... ...
60        120        24        48        9.6        19.2
    ×2        ÷5        ×2        ÷5        ×2
Series II: 100  W  X  Y  Z  32
W = 200
X = 40
Y = 80
Z = 16
First term = 160
Second term = 320
Third = 64

**S105. Ans.(d)**
**Sol.**
Series I: 60  120  24  48    9.6  19.2
Follows pattern = × 2,÷ 5,× 2,÷ 5, ... ...
60        120        24        48        9.6        19.2
    ×2        ÷5        ×2        ÷5        ×2
Series II: 100  W  X  Y  Z  32
W = 200
X = 40
Y = 80
Z = 16
Root I: 0.4  root II: 10
Required quadratic = $\left(r - \frac{4}{10}\right)(r - 10) = 0$
$5r^2 - 52r + 20 = 0$
$r^2 - \frac{52r}{5} + 4 = 0$

**S106. Ans.(c)**
**Sol.**
A: put x = 5
We get
P = 45
A: $(x-2)^2 = (-3x^2) + 2^2 + 25x - 45$
$4x^2 - 29x + 45 = 0$
Roots = 5, 2.25
B: $(10y^2 -3^2y + \frac{2}{3})\times 3 + 10y = 0$
$30y^2 - 17y + 2 = 0$
Roots = 0.4 , 1/6
Required answer = 135 – 89 = 46

**S107. Ans.(c)**

**Sol.**

A: put x = 5

We get

P = 45

A: $(x-2)^2 = (-3x^2) + 2^2 + 25x - 45$

$4x^2 - 29x + 45 = 0$

Roots = 5, 2.25

B: $(10y^2 -3^2y + \frac{2}{3}) \times 3 + 10y = 0$

$30y^2 - 17y + 2 = 0$

Roots = 0.4 , 1/6

Required answer = $2.25 \times 7 = 15.75 = 15\frac{3}{4}$

**S108. Ans.(c)**

**Sol.**

A: put x = 5

We get

P = 45

A: $(x-2)^2 = (-3x^2) + 2^2 + 25x - 45$

$4x^2 - 29x + 45 = 0$

Roots = 5, 2.25

B: $(10y^2 -3^2y + \frac{2}{3}) \times 3 + 10y = 0$

$30y^2 - 17y + 2 = 0$

Roots = 0.4 , 1/6

Roots = $\frac{2}{5}, \frac{1}{6}$

**S109. Ans.(b)**

**Sol.**

Roots of $(Y^2-11Y + 30 =0)$

So, Y = 5 , 6

mn = 30 and x = -10 put in below equation

$(x + 45 - mn)^2 = 5x + Q$

We get Q = 25 + 50 = 75

Quantity (I): 25

Quantity (II): 18.75

**S110. Ans.(a)**
**Sol.**

Quantity I = $\frac{(2a^3+2b^3)(a-b)}{(2a^2-2ab+2b^2)(a^2-b^2)} = \frac{(a^3+b^3)}{(a^3+b^3)} = 1$

Quantity II = Value of Q will be negative and less than −1, so −2Q is positive and greater than 1.

**S111. Ans.(d)**
**Sol.**

Given,
Diagonal of cube = diameter of sphere
$\sqrt{3}P = 2R$

Required ratio = $\frac{4 \times \frac{22}{7} \times R^2}{4 \times P^2} = \frac{33}{14}$

**S112. Ans.(e)**
**Sol.**

Given,
Diagonal of cube = diameter of sphere
$\sqrt{3}P = 2R$

$R = \frac{\sqrt{3}P}{2}$

So, radius of cone = $\sqrt{3} \times \frac{\sqrt{3}}{2}P = \frac{3}{2}P$

ATQ,
$\frac{1}{3} \times \frac{22}{7} \times (\frac{3}{2}P)^2 \times H = 4950$

$P^2 = \frac{2100}{H}$

**S113. Ans.(e)**
**Sol.**

Given,
Diagonal of cube = diameter of sphere
$\sqrt{3}P = 2R$

Given, B is a three-digit number.
Possible number = 104, 203, 302, 401, 500
When 104, 302 and 500 is multiplied by any prime number we get even number but A is an odd number.
Only 203 and 401 is the possible value of B.
A = four-digit odd number and sum of digits of A = 8
Last term of A = 7, 3 and 1.
So, A = multiple of B
Prime multiple of B (203) = 609, 1015, **1421**.....

Prime multiple of B (401) = 1203, 2005, 2807...
A = 1421
B = 203
**Statement (I):** $4 \times 2 = 8 = sum\ of\ the\ digits$ (True)
**Statement (II):** Required difference = 4 – 2 = 2 (Not true)
**Statement (III):** Required sum = 1624 (True)

## S114. Ans.(a)
**Sol.**
AB+BC+CD=2700
$P^2$+100 +20P+100+ $P^2$+100 = 2700
$2P^2$+300 +20P= 2700
$2P^2$+300 +20P = 2700
$P^2$+10P – 1200= 0
**P = 30**
From note
$\frac{P+Q+Q+6}{3} = Q + 6$
$Q = 24$
Speed of train Y = $\frac{2700}{25}$ = 108 $km$/hr = 30 m/s

Length of train Y = $24 \times 30 - 400 = 320\ m$
Length of train X be x
$\frac{x}{10} = \frac{x+400}{30}$
$x = 200\ meter$
Length of train Z = $\frac{200+320}{2} = 260$
$M = \frac{260 \times 36}{660} = 14.18 = 14$ sec

## S115. Ans.(a)
**Sol.**
AB+BC+CD=2700
$P^2$+100 +20P+100+ $P^2$+100 = 2700
$2P^2$+300 +20P= 2700
$2P^2$+300 +20P = 2700
$P^2$+10P – 1200= 0
**P = 30**
From note
$\frac{P+Q+Q+6}{3} = Q + 6$
$Q = 24$
Speed of train Y = $\frac{2700}{25}$ = 108 $km$/hr = 30 m/s
Length of train Y = $24 \times 30 - 400 = 320\ m$
Length of train X be x
$\frac{x}{10} = \frac{x+400}{30}$
$x = 200\ meter$
P: Q = 5:4

**BANK MAHAPACK**

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