

IBPS RRB PO Mains Memory Based Paper 2022 (English Version)

Reasoning Ability

Directions (1-5): Study the following information carefully and answer the questions given below.

Seven persons- A, B, C, D, E, F and G are attending the meeting on seven different days from Monday to Sunday of the same week. Each person is from seven different cities viz. Pune, Agra, Delhi, Nagpur, Chennai, Surat and Bhopal. All the information is not necessarily in the same order.

E attends the meeting on one of the days after Thursday. Only one person attends between E and the one who is from Bhopal. A attends immediately after the one who is from Bhopal. Only two persons attend between A and the one who is from Delhi. D attends immediately after the one who is from Delhi. As many persons attend before D as after the one who is from Surat. The one who is from Nagpur attends immediately after the one who is from Surat. F attends two days before G, who attends immediately after the one who is from Agra. C is from Chennai and attends on one of the days after the one who is from Agra.

1. Who among the following person attends the meeting on Monday?

- a) A
- b) The one who is from Delhi
- c) The one who is from Pune
- d) G
- e) E

2. Which of the following statement(s) is/are true with respect to the final arrangement?

- I. E is from Nagpur
 - II. A attends two days before C
 - III. F attends the meeting immediately after B
- a) Only I
 - b) Only III
 - c) Only I and II
 - d) Only II
 - e) All I, II and III

3. How many persons attend between the one who is from Bhopal and B?

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

4. Four of the following five are alike in a certain way based on the given arrangement and thus form a group. Which one of the following doesn't belong to the group?

- a) BF
- b) DG
- c) AC
- d) GA
- e) EC

5. On which of the following days does C attend the meeting?

- a) Sunday

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- b) Thursday
- c) Saturday
- d) Tuesday
- e) Wednesday

Directions (6-8): Study the following information carefully and answer the questions given below.

Person A starts walking from Point P towards the east and walks for 7m to reach point Q, then he turns to the left and walks for 6m to reach point R, where he turns to the right and walks for 5m to reach point S.

Person B starts walking from point L towards the south and walks for 11m to reach point M, and then he turns to the right and walks for 4m to reach point N. From Point N, he turns to the right and walks for 5m to reach point S.

6. What is the direction of point N with respect to point Q?

- a) North-west
- b) East
- c) West
- d) North-east
- d) South-east

7. Four of the following five are alike in a certain way based on the directions in the given arrangement and thus form a group. Which one of the following doesn't belong to the group?

- a) PL
- b) QS
- c) PR
- d) NL

- e) MS

8. If point X is east of point S and south of point L, then the distance between point XM is equal to which of the following points?

- a) RQ
- b) PQ
- c) NS
- d) LX
- e) NM

Direction (9-11): In the given question, the relationship between different elements is shown in the statements followed by two conclusions.

Find the conclusion which is definitely true.

9. Statements:

$A \geq H \geq L < B \leq S$; $R > Y \leq M = H \geq T$; $K = C \leq Y$

Conclusions:

I. $T < S$

II. $A \geq K$

- a) Only conclusion I is true
- b) Only conclusion II is true
- c) Either conclusion I or II is true
- d) Neither conclusion I nor II is true
- e) Both conclusions I and II are true

10. Statements:

$W > L > O < P$; $Z < L > J \geq T$; $I \geq W = C$

Conclusions:

I. $T < C$

II. $P > Z$

- a) Only conclusion I is true
- b) Only conclusion II is true

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- c) Either conclusion I or II is true
- d) Neither conclusion I nor II is true
- e) Both conclusions I and II are true

11. Statements:

$A > S \geq F = K < J < B$; $X > F \geq U > O$; $Q > T \geq A$

Conclusions:

I. $Q > O$

II. $U < B$

- a) Only conclusion I is true
- b) Only conclusion II is true
- c) Either conclusion I or II is true
- d) Neither conclusion I nor II is true
- e) Both conclusions I and II are true

Directions (12-13) Study the following statements and then decide which of the given conclusions logically follows from the given statements disregarding the commonly known facts.

12. Statements:

All L is P

All P is D

No L is F

No D is J

Conclusions:

- a) Some P can be J
- b) Some L being D is a possibility
- c) No F is D
- d) No L is J
- e) At least some P is F

13. Statements:

All M is L

All L is P

At least some P is R

No R is S

Conclusions:

- a) All P can be S
- b) No L is R
- c) Some M is not S
- d) All L is R
- e) Some M can be R

14. Study the following statement and then decide which of the given conclusions logically doesn't follow from the given statements disregarding the commonly known facts.

Statements:

All P is S

No S is L

Only a few L is R

All R is W

Conclusions:

- a) Some L is W
- b) No P is L
- c) All R can be S
- d) Some S can be W
- e) All P can be R

15. If in the number "6942719583" the first half of the number is written in the ascending order followed by the second half of the number is written in the descending order, then what is the resultant if the third digit from the right end is divided by the second digit from the left end?

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- a) 2
- b) 1.5
- c) 1.75
- d) 2.5
- e) 1.25

Directions (16-20): Study the following information carefully and answer the questions given below.

Seven persons A, B, C, D, E, F and G are working in a bank with seven different positions, but not necessarily in the same order. The designations are in decreasing order viz.

Chairman, General Manager (GM), Senior General Manager (SGM), Manager, Assistant Manager (AM), Probationary officer (PO) and clerk such that chairman is the senior most designation whereas clerk is the junior most designation. Each person likes different fruits viz. Kiwi, Orange, Strawberry, Guava, Apple, Banana and Mango.

The one who likes apple is junior to Manager. Only one person is designated between F and the one who likes apple. The one who likes orange is immediately junior to F. A is two persons senior to the one who likes orange. Only three persons are designated between A and the one who likes strawberry. E is immediately senior to the one who likes strawberry. As many persons senior to E as junior to the one who likes Guava. The one who likes Kiwi is two persons senior to B. C is two persons junior to B. Only one person is

designated between G and the one who likes Banana.

16. Who among the following person is Chairman?

- a) G
- b) The one who likes Orange
- c) E
- d) The one who likes Mango
- e) F

17. If all the persons are designated in alphabetical order from senior most to junior most designations, then how many persons remain unchanged in their designations?

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

18. If F is related to the one who likes Guava and E is related to the one who likes Banana, then who among the following person is related to the one who is Senior General Manager (SGM)?

- a) A
- b) The one who likes Apple
- c) The one who likes Orange
- d) C
- e) None of these

19. In which of the following designation does G work?

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- a) Probationary officer (PO)
- b) Clerk
- c) Assistant Manager (AM)
- d) Chairman
- e) General Manager (GM)

20. Which of the following statement(s) is/are true with respect to the final arrangement?

- I. F is designated as Clerk
- II. Only two persons are senior to A
- III. The one who likes orange is designated as Manager

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

Directions (21-23): Study the following information carefully and answer the questions given below.

B is the daughter of P who is not the spouse of K. K is the brother-in-law of Q and is the son of R. C is the nephew of Q. Both S and C are cousin brothers. Q is an unmarried female in the family and has only one sibling. J is the paternal uncle of C and son of G. Both C and G are of different genders. M is the Daughter-in-law of R but she is not a mother of C.

21. How is P related to Q?

- a) Brother-in-law
- b) Father
- c) Father-in-law

- d) Mother
- e) Cannot be determined

22. If U is the Spouse of S, then how is J related to U?

- a) Mother-in-law
- b) Grandfather
- c) Father-in-law
- d) Daughter-in-law
- e) Paternal uncle

23. Which of the following statement(s) is/are true with respect to the final arrangement?

- I. M is the sister of Q
- II. K is the maternal uncle of S
- III. B is the mother of C

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

Directions (24-28): Study the following information carefully and answer the questions given below

Ten persons are sitting in two parallel rows and facing each other. In row 1 P, Q, R, S and T are seated and all of them face south while in row 2 A, B, C, D and E are seated and all of them face north. Each likes different fruits- Apple, Grapes, Banana, Papaya, Kiwi, Mango, Guava, Peach, Orange and Cherry, but not necessarily in the same order.

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P sits at one of the extreme ends. Neither T nor P likes cherry and grapes. Only one person sits between P and the one who faces the one who likes Peach. D sits second to the left of the one who likes peach. Only two persons sit between the one who likes guava and the one who likes cherry, who faces the one who sits immediate right of C. As many persons sit to the right of the one who likes papaya as to the right of E, who sits second to the right of the one who likes apple. As many persons sit between the one who likes apple and B as between Q and the one who likes grapes, who sits immediate left of R. T faces the one who sits two places away from the one who likes banana. The one who likes Orange sits third to the left of A, who doesn't like Mango.

24. Who among the following person sits second to the left of the one who likes Kiwi?

- a) The one who faces the one who likes cherry
- b) D
- c) C
- d) The one who likes Peach.
- e) B

25. Four of the following five are alike in a certain way based on the given arrangement and thus form a group. Which one of the following does not belong to the group?

- a) P
- b) A
- c) E
- d) D

e) Q

26. As many persons sit between C and the one who likes Apple as between ___ and ___.

- a) The one who likes papaya and P
- b) The one who likes Kiwi and D
- c) P and the one who faces the one who likes Cherry
- d) E and the one who likes orange
- e) The one who likes mango and S

27. Which of the following statements is/are not false with respect to the final arrangement?

- a) The one who likes Mango faces D
- b) The one who likes Orange sits second to the right of the one who faces S.
- c) Only two persons sit between B and the one who faces Q.
- d) Both a and b
- e) Both a and c

28. Which of the following combination is true?

- a) Q-Grapes
- b) T-Guava
- c) D-Kiwi
- d) P-Banana
- e) B-Apple

Directions (29-33): Study the following information carefully and answer the questions given below

Input: 69 flip 43 justify 28 91 layer conflict 83 56 pearl handle

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Step1: 28 69 flip 43 justify 91 layer 83 56 pearl
handle conflict

Step2: Justify 28 69 flip 91 layer 83 56 pearl
handle conflict 43

Step3: 56 justify 28 69 flip 91 layer 83 pearl
conflict 43 handle

Step4: Layer 56 justify 28 flip 91 83 pearl conflict
43 handle 69

Step5: 83 layer 56 justify 28 flip 91 conflict 43
handle 69 pearl

Step6: Flip 83 layer 56 justify 28 conflict 43
handle 69 pearl 91

Step 6 gives the final output.

As per the rules followed in the above steps, find
the appropriate final output for the input given
below:

Input: 81 rescue 68 dire 35 57 lemb yielding 93
42 praying empty

**29. In which of the following step, "praying 35
lemb 93 yielding" comes continuously?**

- a) Step 1
- b) Step 2
- c) Step 3
- d) Step 4
- e) Step 5

**30. Which of the following element is fourth to
the right of the element which is third from the
left end in step 3?**

- a) Empty
- b) Yielding
- c) 81
- d) Lemb

e) Rescue

**31. If Rescue is related to lemb in step 2, empty
is related to 81 in step 4, then which of the
following is related to yielding in step 6?**

- a) Empty
- b) Dire
- c) 35
- d) 68
- e) Lemb

**32. What is the sum of the element which is
second from the right end in step 3 and fourth
from the left end in step 4?**

- a) 75
- b) 76
- c) 77
- d) 78
- e) 79

**33. How many numbers are between the
elements which are third from the right end and
empty in step 5?**

- a) Seven
- b) Six
- c) Four
- d) Three
- e) Five

34. Statements:

Government has unveiled a scheme for
protection of Majuli Island in Assam from flood
and erosion from river Brahmaputra.

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Regular floods in the Brahmaputra inundate the island and cause erosion, washing away villages and displacing residents.

Conclusions:

I. The government has made several efforts to control erosion by raising embankments and installing geo-bags and porcupines.

II. Whatever efforts the Brahmaputra Board has made in Majuli, those have led to more erosion, instead of controlling it.

- a) Only conclusion I follows
- b) Only conclusion II follows
- c) Either conclusion I or II follows
- d) Neither conclusion I nor conclusion II follows
- e) Both conclusions I and conclusion II follow

35. Statement: The Reserve Bank of India (RBI) directed banks to keep open their branches dealing with government business on the last day of the financial year (March 31), which happens to be Sunday.

Assumptions:

I). With a view to providing greater convenience to tax payers, as in previous years, it has been decided that RBI offices and all designated branches of agency banks conducting government banking business will keep their counters open

II). Centralised payment systems such as RTGS and NEFT, however, will not be operational on April 1

- a) if only assumption I is implicit.
- b) if only assumption II is implicit.

- c) if either assumption I or II is implicit.
- d) if neither assumption I nor II is implicit.
- e) if both assumption I and II are implicit

36. Statement: The Union Cabinet approved the amendment of the Direct Tax Vivad se Vishwas Bill, 2020. The Bill seeks to provide resolution for disputed tax cases that involve Rs.9.32 lakh crore.

Assumptions:

I. The amendment will widen the scope to cover litigation pending in various debt recovery tribunals and reduces the litigation related to direct taxes.

II. It will cover tax disputes pending at the level of commissioner (appeals), Income Tax Appellate Tribunals (ITAT), high courts (HCs) and the Supreme Court (SC).

- a) If only assumption I is implicit
- b) If only assumption II is implicit
- c) If either I or II is implicit
- d) If neither I nor II is implicit
- e) If both I and II are implicit

37. Despite our nation being very populous, the Covid-19 situation is under control because every household is consuming immunity boosters like turmeric milk, the ashwagandha herb, kaadha etc

Inferences:

I. Demand for Ayurvedic products went up during Covid-19

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II. Allopathic and Ayurvedic practices will now go hand in hand

- a) if only inference I is implicit.
- b) if only inference II is implicit.
- c) if either I or II is implicit.
- d) if neither I nor II is implicit.
- e) if both I and II are implicit.

38. Statement: The heads of state of the tiger range countries pledged to achieve the "Tx2" objective which plans to double the number of wild tigers by 2022. In 2010, their population was estimated at only 3,200.

Inferences:

I. This year has been very positive for tigers.

II. More than 95% of the wild tiger population has been wiped out over the last century

- a) if only inference I is implicit.
- b) if only inference II is implicit.
- c) if either I or II is implicit.
- d) if neither I nor II is implicit.
- e) if both I and II are implicit.

39. Statement: Many professionals have been reporting that they feel dizzy because of long working hours and headache as they work for long hours on the computers which is necessary for their jobs

Course of Action:

I. Small breaks of about 10 minutes or so can be taken every 2 hours to take a stroll, drink water etc in between

II. Neck and Shoulder exercises can help relieve the stiffness in the body that is felt in the body due to long sitting hours

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

40. Statement: Should English be made compulsory in all the schools from the coming session as a new education reform?

Arguments:

I. Yes, as it is observed that the students who do not study English during their school, find it difficult to grasp when they grow up

II. No, as Indians we should not give more importance to other languages than our own vernacular ones

- a) Only argument II is strong
- b) Either I or II is strong
- c) Neither I nor II is strong
- d) Only argument I is strong
- e) Both I and II are strong

Quantitative Aptitude

Directions (1-5): Read the following information carefully and answer the given questions.

The given below table chart shows the number of employees in HR department in four different companies namely A, B, C and D and also given the difference between the number of

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employees in HR and finance departments in these four different companies.

Company	Number of employees in HR department	Difference between the number of employees in HR and Finance department
A	$x + 300$	330
B	Y	240
C	500	100
D	$z^2 + 380$	480

The given below table shows the ratio of the number of employees in HR to Finance department in four different companies namely A, B, C and D.

Company	Employees in HR : Employees in Finance department
A	4:7
B	3:5
C	$P > Q$
D	8:5

1) Find the difference between the average number of employees in HR department of Company A, C and D and the average number of employees in finance department of Company B, C and D.

- a) 180
- b) 160
- c) 120
- d) 140
- e) None of these

2) In Company D, the number of undergraduate employees in HR department is 66.66% more than the number of postgraduate employees in

the same department and the number of undergraduate employees in finance department is 40% less than the number of post graduate employees in the same department. Find the total number of postgraduate employees in Company D.

- a) 980
- b) 924
- c) 965
- d) 942
- e) None of these

3) In Company C, if the ratio of the number of employees in HR and finance department are interchanged and after interchanging, 40% of the employees in HR department are senior employees and the Junior employees is 50% more than the senior employees in finance department. Find the total number of senior employees in Company C.

- a) 340
- b) 360
- c) 300
- d) 320
- e) None of these

4) Out of the total number of employees in HR department of Company B, $\frac{3}{5}$ th of the employees are higher level and the remaining employees are middle order and lower order employees in the ratio of 7:5. Out of the total number of employees in finance department of Company B, 25% of the employees are high

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level and the remaining employees are divided as X level and Y level employees in the ratio of 4:5. The total number of middle level HR employees and X level finance employees together in company B is approximately what percentage of the total number of HR and Finance employees in Company B?

- a) 30%
- b) 40%
- c) 35%
- d) 24%
- e) 27%

5) 40% of the employees in HR department of Company A are females and the ratio of the number of male to female employees in Finance department in Company A is 3:4. Ratio of the male to female employees in HR and finance department together in Company D is 3:1. Find the difference between the total number of male employees in HR and finance department of Company A and Company D.

- a) 999
- b) 928
- c) 966
- d) 954
- e) None of these

Directions (6-8): Following questions contain two statements as statement I and statement II. You have to determine which statement/s is/are necessary to answer the question and give answer as,

6) A rectangular path is made around a rectangular garden and the length of the garden is 6 m more than its breadth. Find the width of the rectangular path.

Statement I: Area of the square is 64 m^2 more than the area of the rectangle and the side of the square is 4 m more than the breadth of the rectangle.

Statement II: The total cost accrued while constructing the rectangular path is Rs.14400 and the construction cost of the path is Rs.40 per m^2 .

- a) The data in statement I alone is sufficient to answer the question, while the data in statement II alone is not sufficient to answer the question
- b) The data in statement II alone is sufficient to answer the question, while the data in statement I alone is not sufficient to answer the question
- c) The data either in statement I alone or in statement II alone is sufficient to answer the question
- d) The data given in both statements I and II together are not sufficient to answer the question
- e) The data given in both statements I and II together are necessary to answer the question.

7) A and B entered into a partnership with an investment of Rs.3000 and Rs.x respectively and after 6 months, C entered the partnership with an investment of Rs.(x + 1500). Find the investment of C.

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Statement I: At the end of the year, the total profit obtained is Rs.7000 and the profit obtained by C is Rs.2000.

Statement II: At the end of one year, the ratio of the profit obtained by A, B and C is 2:3:2.

- a) The data in statement I alone is sufficient to answer the question, while the data in statement II alone is not sufficient to answer the question
- b) The data in statement II alone is sufficient to answer the question, while the data in statement I alone is not sufficient to answer the question
- c) The data either in statement I alone or in statement II alone is sufficient to answer the question
- d) The data given in both statements I and II together are not sufficient to answer the question
- e) The data given in both statements I and II together are necessary to answer the question.

8) A shopkeeper sold three articles namely A, B and C and the Ratio of the cost price of A to B is 5:6 and the cost price of C is Rs.4000. The shopkeeper marked the price of the articles by 80%, 45% and 60% respectively. Find the sum of the selling price of B and the marked price of A.

Statement I: The shopkeeper sold article C for Rs. after giving a discount of 30% and the shopkeeper sold article B after giving a discount of 25%. The marked price of article C is 28% more than the cost price of article A.

Statement II: Ratio of the marked price of article C to the selling price of article A is 4:5.

- a) The data in statement I alone is sufficient to answer the question, while the data in statement II alone is not sufficient to answer the question
- b) The data in statement II alone is sufficient to answer the question, while the data in statement I alone is not sufficient to answer the question
- c) The data either in statement I alone or in statement II alone is sufficient to answer the question
- d) The data given in both statements I and II together are not sufficient to answer the question
- e) The data given in both statements I and II together are necessary to answer the question.

Directions (9-10): Following questions have two quantities as Quantity I and Quantity II. You have to determine the relationship between them and give answer as

9) The area of the rhombus is 240 m^2 and the length of one of the diagonals of the rhombus is 24 m.

Quantity I: If the area of the rhombus is 20 m^2 less than the area of the rectangle and the length of the rectangle is equal to the shortest length of the diagonals of the rhombus, then find the breadth of the rectangle.

Quantity II: Find the side of the rhombus

- a) Quantity I > Quantity II
- b) Quantity I \geq Quantity II
- c) Quantity I < Quantity II

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- d) Quantity I \leq Quantity II
e) Quantity I = Quantity II or Relation cannot be established

10) There are three two digit numbers namely A, B and C. The unit digits of all three numbers are odd and the tens digits of all the three numbers are even. A is the largest possible number and C is the smallest possible number.

Quantity I: If each number is divided by 2, then find the sum of their remainder

Quantity II: The average of the numbers A, B and C is 51. Find the sum of the digits of the number B.

- a) Quantity I > Quantity II
b) Quantity I \geq Quantity II
c) Quantity I < Quantity II
d) Quantity I \leq Quantity II
e) Quantity I = Quantity II or Relation cannot be established

Directions (11-15): What value should come in the place of (?) in the following number series?

11) 100, 152, 382, 1339, ?, 33153.25

- a) 6027.5
b) 3708.5
c) 4025.5
d) 7549.5
e) 5903.5

12) 80, 45, 50, 80, 165, ?

- a) 304.5
b) 276.5

- c) 417.5
d) 353.5
e) 252.5

13) 10, 34, 66, 108, 162, ?

- a) 230
b) 195
c) 184
d) 208
e) 210

14) 15, ?, 1279, 7679, 30719, 61439

- a) 757
b) 521
c) 379
d) 485
e) 159

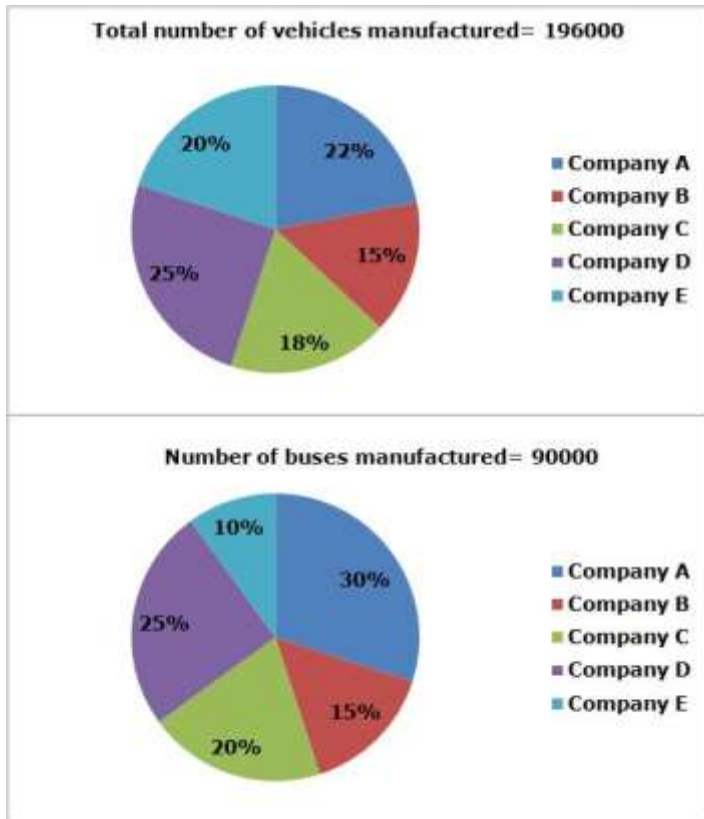
15) 33, ?, 176, 224, 259, 283

- a) 78
b) 91
c) 102
d) 113
e) 84

Directions (16-20): Read the following information carefully and answer the given questions.

The given below pie chart shows the percentage distribution of the total number of vehicles (cars + buses) manufactured by five different companies namely A, B, C, D and E.

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16) The total number of vehicles manufactured by company C is what percentage less than the total number of cars manufactured by companies B and D together?

- a) 20%
- b) 35%
- c) 15%
- d) 42%
- e) 17%

17) If the number of buses manufactured by company X is 40% less than that of company B and the ratio of the number of cars to buses manufactured by company X is 5:9, then find the difference between the number of cars manufactured by companies E and C?

- a) 26400
- b) 23700
- c) 24200

- d) 27100
- e) 25700

18) If the total number of vehicles manufactured by company E increased by 25% and the number of cars manufactured by company E increased by 30%, then find the difference between the number of cars and buses manufactured by company E after the increase?

- a) 29520
- b) 20400
- c) 21800
- d) 25600
- e) None of these

19) If the number of bikes manufactured by company R is equal to the average number of buses manufactured by companies A and C together, then find the ratio of the number of bikes manufactured by company R to the number of buses manufactured by company E?

- a) 7:9
- b) 1:1
- c) 5:2
- d) 9:5
- e) 3:2

20) Out of the total number of cars and buses manufactured by company C, 40% of the cars are damaged and 25% of the buses are damaged. If the total number of damaged vehicles manufactured by company F is $\frac{5}{6}$ th of the total number of damaged vehicles

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manufactured by company C, then find the total number of damaged vehicles manufactured by company F.

- a) 7900
- b) 9510
- c) 9600
- d) 8500
- e) None of these

Directions (21-25): Read the following information carefully and answer the given questions.

Three bags i.e, A, B and C and each bag contains three types of coins namely gold, silver and copper. The total number of coins in all three bags is 1510 and the total number of coins in Bag A and Bag B is 580 and 510 respectively. The ratio of the number of gold coins in Bag C to the number of copper coins in Bag A to the number of copper coins in Bag B is 4:3:2. The number of silver coins in Bag B is 60 more than the number of copper coins in the same bag. The number of gold coins in Bag B is 25% less than the number of silver coins in Bag A. The total number of copper coins in all three bags together to the total number of silver coins in all three bags is 20:27. The total number of gold coins in all the bags together is 570.

21) If the total number of coins in bag D is 25% more than that of bag A and the ratio of the number of gold and silver coins in bag D is 3:2 and the number of copper coins in bag D is

double the number of copper coins in bag C, then find the number of gold coins in bag D?

- a) 275
- b) 315
- c) 445
- d) 185
- e) 235

22) The total number of silver coins in bags A and B together is how much more/less than the total number of copper coins in bags B and C together?

- a) 280 more
- b) 510 less
- c) 330 more
- d) 240 more
- e) 170 less

23) If the total number of platinum coins in all three bags is 120% of the total number of copper coins in all three bags, then find the ratio of the total number of platinum coins in all three bags together to the total number of silver coins in all three bags together?

- a) 8:9
- b) 5:3
- c) 2:1
- d) 7:4
- e) None of these

24) Out of the total number of coins in bag T, 30% of the coins are gold, 45% of the coins are silver and the remaining coins are copper. If the

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ratio of the number of copper coins in bag A to bag T is 3:5, then the number of gold coins in bag C is approximately what percentage of the number of gold coins in bag T?

- a) 78%
- b) 45%
- c) 67%
- d) 51%
- e) 58%

25) Find the ratio of the number of gold coins in bag B to the average number of gold, silver and copper coins in bag C?

- a) 7:9
- b) 10:11
- c) 17:8
- d) 5:4
- e) 3:2

26) Vessel A contains 60 liters of pure milk and 10 liters of the milk is removed and same quantity of water is added in Vessel A. 60% of the mixture is removed from vessel A. Vessel B contains a mixture of milk and honey in the ratio of 3:2 and the quantity of mixture in vessel B is 16 liters more than the final mixture in Vessel A. If the quantity of mixtures of both vessels are mixed, then find the ratio of milk, water and honey.

- a) 11:1:4
- b) 4:1:11
- c) 4:11:1
- d) 1:5:4

e) None of these

27) Raju spends 20% of his monthly income in food and out of the remaining income, he spends 30% of income in education and spends the rest of the amount in rent and savings together. Ratio of the amount spend on rent to the amount saved is 9:5 and the sum of the amount spend in food and rent is Rs.8400. Find the monthly income of Raju.

- a) Rs.14000
- b) Rs.13000
- c) Rs.15000
- d) Rs.12000
- e) None of these

Directions (28-30): What value should come in the place of (?) in the following questions?

28) $\sqrt{2025} * 4 - ? + 15^2 = \sqrt{4900} + 350 \div 2$

- a) 150
- b) 190
- c) 130
- d) 110
- e) 160

29) $21\% \text{ of } 1100 \div \sqrt{?} = 315 \div 45 * \sqrt[3]{81}$

- a) 121
- b) 225
- c) 100
- d) 81
- e) 324

30) $220.5 \div 3 - 13 * 7 + ? * 1.5 = 950 \div 4$

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- a) 190
b) 130
c) 170
d) 150
e) 110
- 31) Volume of the cone is 40 m^2 more than the volume of the cuboid and the radius and height of the cone is 7 m and 12 m respectively and the length of the cuboid is equal to the height of the cone. If the height of the cuboid is 2 m less than the breadth of the cuboid, then find the breadth of the cuboid.
- a) 10 m
b) 8 m
c) 7 m
d) 4 m
e) 12 m
- 32) Valar and Malar entered into a business with an investment of Rs.8000 and Rs.x respectively. After 6 months, Priya joined the business with an investment of Rs.(x-1000). At the end of the year, the profit share of Priya is 62.5% of the profit share of Valar. Find the investment of Priya?
- a) Rs.11000
b) Rs.15000
c) Rs.12000
d) Rs.10000
e) Rs.9000
- 33) Train A starts from Mumbai to Pune at 7.00 am and Train B starts from Pune to Mumbai at 9.30 am and the distance between Mumbai to Pune is 900 m and both the trains meet at 5.30 am. If the length of Train A is 400 m and it crosses an electric pole in 36 seconds, then find the speed of Train B in km/hr.
- a) 50 km/hr
b) 48 km/hr
c) 60 km/hr
d) 45 km/hr
e) None of these
- 34) A invested Rs.x in CI at 40% rate of interest per annum for 4 years and obtained an interest of Rs.35520. B invested a certain amount in SI at 35% rate of interest per annum for 6 years and obtained an interest of Rs.(x + 4300). Find the amount invested by B.
- a) Rs.9600
b) Rs.8000
c) Rs.9000
d) Rs.8400
e) None of these
- 35) A bag contains 6 white balls and 4 red balls and 8 blue balls. Find the probability of selecting 2 red balls in the bag.
- a) $\frac{10}{21}$
b) $\frac{11}{13}$
c) $\frac{17}{25}$
d) $\frac{2}{51}$
e) None of these

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36) A man bought a purse and a watch for a certain cost. The marked price of the watch is 75% more than the marked price of the purse and the marked price of the purse is Rs.500 above the cost price of purse and gives a discount of 20% and 30% on purse and watch respectively. Find the cost price of the watch, if the profit obtained by selling the purse is Rs.100 and sold the watch at a loss of 2%.

- a) Rs.2500
- b) Rs.2000
- c) Rs.2200
- d) Rs.1800
- e) None of these

37) Ratio of the speed of the current to the sum of the downstream and upstream speed of the boat is 1:9 and the distance travelled by the boat in downstream in 5 hours is 30 km less than the distance travelled by the boat in upstream in 10 hours. Find the speed of the boat in still water.

- a) 22 km/hr
- b) 18 km/hr
- c) 16 km/hr
- d) 20 km/hr
- e) None of these

Directions (38-40): The following question contains two equations as I and II. You have to solve both equations and determine the

relationship between them and give the answer as,

38)

I) $2x^2 - 27x + 90 = 0$

II) $y^2 - 3y - 54 = 0$

- a) $x > y$
- b) $x \geq y$
- c) $x = y$ or relationship can't be determined.
- d) $x < y$
- e) $x \leq y$

39)

I) $x^2 - 2x - 63 = 0$

II) $y^2 + 30y + 189 = 0$

- a) $x > y$
- b) $x \geq y$
- c) $x = y$ or relationship can't be determined.
- d) $x < y$
- e) $x \leq y$

40)

I) $3x^2 + 14x + 15 = 0$

II) $4y^2 + 19y + 22 = 0$

- a) $x > y$
- b) $x \geq y$
- c) $x = y$ or relationship can't be determined.
- d) $x < y$
- e) $x \leq y$

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Answer Key with Explanation

Reasoning Ability

Directions (1-5):

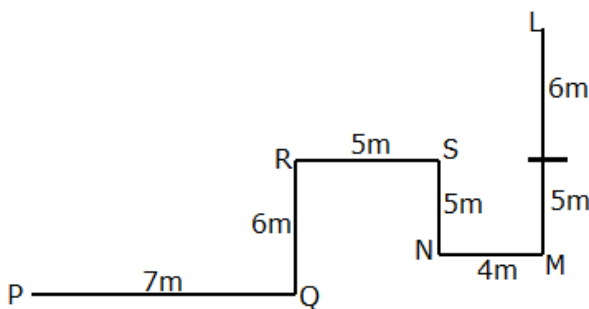
1. Answer: C
2. Answer: E
3. Answer: B
4. Answer: C (Both the persons attend the meeting on the adjacent days except option C)
5. Answer: A

Final arrangement

Days	Person	Cities
Monday	B	Pune
Tuesday	F	Delhi
Wednesday	D	Agra
Thursday	G	Bhopal
Friday	A	Surat
Saturday	E	Nagpur
Sunday	C	Chennai

Directions (6-8):

6. Answer: D
7. Answer: E (The first person is in the southwest with respect to the second person, except option E)
8. Answer: C



9. Answer: B

$A \geq H \geq L < B \leq S$; $R > Y \leq M = H \geq T$; $K = C \leq Y$

Conclusions:

- I. $T < S$ ($S \geq B > L \leq H \geq T$) \rightarrow False
 - II. $A \geq K$ ($A \geq H = M \geq Y \geq C = K$) \rightarrow True
- Hence, option b is correct

10. Answer: A

$W > L > O < P$; $Z < L > J \geq T$; $I \geq W = C$

Conclusions:

- I. $T < C$ ($C = W > L > J \geq T$) \rightarrow True
 - II. $P > Z$ ($P > O < L > Z$) \rightarrow False
- Hence, option a is correct

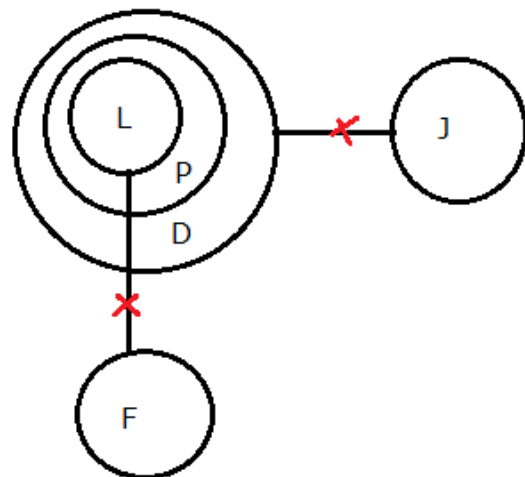
11. Answer: E

$A > S \geq F = K < J < B$; $X > F \geq U > O$; $Q > T \geq A$

Conclusions:

- I. $Q > O$ ($Q > T \geq A > S \geq F \geq U > O$) \rightarrow True
 - II. $U < B$ ($B > J > K = F \geq U$) \rightarrow True
- Hence, option e is correct

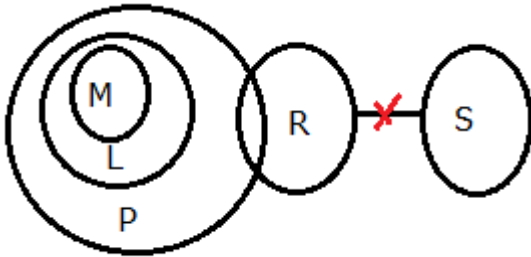
12. Answer: D



Hence, option d is correct

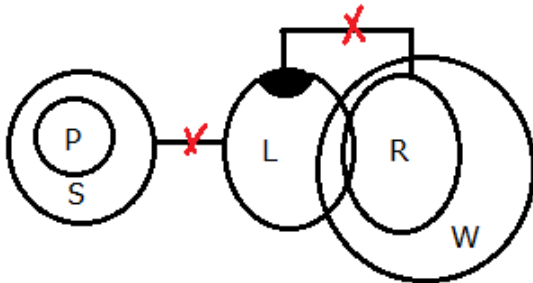
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13. Answer: E



Hence, option e is correct

14. Answer: C



Hence, option c is correct

15. Answer: E

69427 / 19583

2 4 6 7 9 9 8 5 3 1

5/4=1.25

Directions (16-20):

16. Answer: D

17. Answer: E

18. Answer: C

19. Answer: E

20. Answer: A

Final arrangement

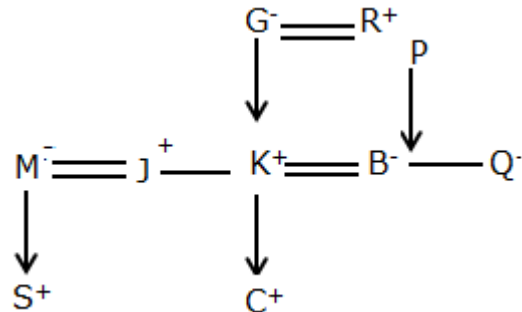
Designation	Persons	Fruits
Chairman	D	Mango
General Manager (GM)	G	Guava
Senior General Manager (SGM)	A	Kiwi
Manager	F	Banana
Assistant Manager (AM)	B	Orange
Probationary officer (PO)	E	Apple
Clerk	C	Strawberry

Directions (21-23):

21. Answer: E

22. Answer: C

23. Answer: B



Directions (24-28):

24. Answer: D

25. Answer: C

(In the given options, all the persons are sitting in the end, except in option c)

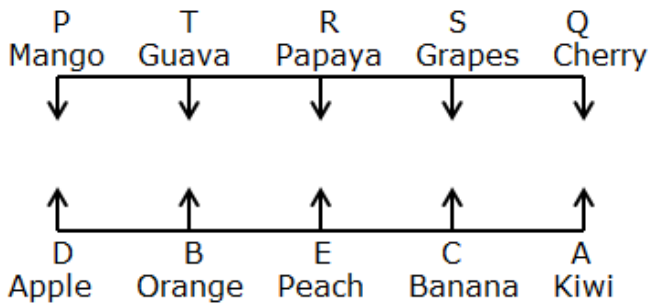
26. Answer: E

27. Answer: E

28. Answer: B

Final arrangement:

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Directions (29-33):

29. Answer: E

30. Answer: D

31. Answer: A

32. Answer: C

33. Answer: C

Words are arranged according to their letter counts and numbers are arranged in ascending order. If two words have the same number of letter, then it is arranged as per alphabetical order.

In step1: The word with the highest letter count is first written at the extreme right end, similarly the lowest number is written at the extreme left end.

In step 2: The word with the second highest letter is written at the extreme left end and the second lowest number is written at the extreme right end and so on.

Step1: 35 81 rescue 68 dire 57 lemb 93 42
praying empty yielding

Step2: Praying 35 81 rescue 68 dire 57 lemb 93
empty yielding 42

Step3: 57 praying 35 81 68 dire lemb 93 empty
yielding 42 rescue

Step4: Empty 57 praying 35 81 dire lemb 93
yielding 42 rescue 68

Step5: 81 empty 57 praying 35 lemb 93 yielding
42 rescue 68 dire

Step6: Lemb 81 empty 57 praying 35 yielding 42
rescue 68 dire 93

Step 6 gives the final output.

34. Answer: D

The given statements are talking about the island 'Majuli' which is facing a threat due to the floods in the river Brahmaputra. Neither of the conclusions follows because we cannot conclude what actions are taken by government like installing geo-bags and porcupines; it can be just an assumption. Also, we cannot conclude if the actions taken by the government are just futile attempts. So, both the conclusions are irrelevant to the statements.

35. Answer: A

Only assumption I is implicit.

36. Answer: E

The given statement is talking about the amendment of the Direct Tax Bill which helps in solving the disputed tax cases. Therefore, both the statements are implicit as both the statements are talking about the benefits of the bill.

37. Answer: A

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The statement clearly talks about the way in which our Ayurvedic products are being accepted during the COVID times. On the basis of this fact only statement I can be inferred as; if every household has started consuming the same the obvious result will be an increase in the demand.

We can rule out statement II as nothing specific about Allopathy has been discussed.

38. Answer: D

After reading the statement, we can find that neither I nor II can be inferred from the same. Both I and II are related to the idea being discussed but none can clearly be deduced from as nothing about their decline has been clearly mentioned and also the present year progress has not been discussed.

39. Answer: A

A course of action must either alleviate or lessen the problem that has been mentioned in the statement.

COA – I says take breaks, drink water, take a stroll · this will for sure help in managing the dizziness and improve the productivity so this is correct

COA – II says stiffness in the body which is not being talked about in the statement. It talks about dizziness and headache, so this can be eliminated

Hence, option (a) is the correct answer.

40. Answer: D

Only argument I provides a logical reason to why that can be done. Argument II is extreme in nature because it is not correct to say that as Indians we should not respect other languages than our own.

So, option (d) is the correct answer.

Quantitative Aptitude**Directions (1-5):****Company A,**

Number of employees in HR department = $330 * \frac{4}{7-4} = 330 * \frac{4}{3} = 440$

Number of employees in finance department = $330 * \frac{7}{7-4} = 330 * \frac{7}{3} = 770$

$$x + 300 = 440$$

$$x = 140$$

Company B,

Number of employees in HR department = $240 * \frac{3}{5-3} = 240 * \frac{3}{2} = 360$

Number of employees in finance department = $240 * \frac{5}{5-3} = 240 * \frac{5}{2} = 600$

$$y = 360$$

Company C,

Number of employees in HR department = 500
 $P > Q$

Number of employees in finance department = $500 - 100 = 400$

$$P:Q = 500:400 = 5:4$$

Company D,

Number of employees in HR department = 480
 $\frac{8}{8-5} = 480 * \frac{8}{3} = 1280$

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Number of employees in finance department =

$$480 * 5/(8 - 5) = 480 * 5/3 = 800$$

$$z^2 + 380 = 1280$$

$$z^2 = 900$$

$$z = 30$$

Company	Number of employees in HR department	Number of employees in finance department
A	440	770
B	360	600
C	500	400
D	1280	800

1) Answer: D

$$\begin{aligned} \text{Required difference} &= (440 + 500 + 1280)/3 - \\ &(600 + 400 + 800)/3 = 2220/3 - 1800/3 = 740 - \\ &600 = 140 \end{aligned}$$

2) Answer: A

Ratio of the number of undergraduate to postgraduate employees in HR department of Company D = 5:3

Number of post graduate employees in HR department of Company D = $1280 * 3/8 = 480$

Ratio of the number of undergraduate to postgraduate employees in finance department of Company D = 3:5

Number of post graduate employees in finance department of Company D = $800 * 5/8 = 500$

$$\text{Required sum} = 480 + 500 = 980$$

3) Answer: B

Number of employees in HR department of Company C = 400

Number of employees in finance department of Company C = 500

Number of senior employees in HR department of Company C = $400 * 40/100 = 160$

Ratio of the number of senior to junior employees in finance department of Company C = 2:3

Number of senior employees in finance department of Company C = $500 * 2/5 = 200$

$$\text{Total number of senior employees in Company C} = 160 + 200 = 360$$

4) Answer: A

Number of higher authority employees in HR department of Company B = $360 * 3/5 = 216$

Number of middle order employees in HR department of company B = $(360 - 216) * 7/12 = 144 * 7/12 = 84$

Number of higher authority employees in finance department of Company B = $600 * 25/100 = 150$

Number of X category employees in finance department of Company B = $(600 - 150) * 4/9 = 450 * 4/9 = 200$

$$\begin{aligned} \text{Required percentage} &= (84 + 200)/(360 + 600) * \\ &100 = 284/960 * 100 = 30\% \text{ (approx.)} \end{aligned}$$

5) Answer: C

Number of male employees in HR department of Company A = $440 * 60/100 = 264$

Number of male employees in finance department of Company A = $770 * 3/7 = 330$

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Total number of male employees in HR and finance department together of Company D =
 $(1280 + 800) * 3/4 = 2080 * 3/4 = 1560$
Required difference = $1560 - (264 + 330) = 1560 - 594 = 966$

6) Answer: E

Let the breadth of the rectangle be x m and the length of the rectangle be $(x + 6)$ m.

From statement I,

$$a = (x + 4) \text{ m}$$

$$(x + 4)^2 - 64 = x * (x + 6)$$

$$x^2 + 8x + 16 - 64 = x^2 + 6x$$

$$2x = 48$$

$$x = 24 \text{ m}$$

$$\text{Length of the rectangle} = 24 + 6 = 30 \text{ m}$$

$$\text{Breadth of the rectangle} = 24 \text{ m}$$

So, Statement I alone is not sufficient to answer the question.

From statement II,

Let the width of the rectangular path be y m.

$$\text{Area of the rectangular path} = 14400/40 = 360 \text{ m}^2$$

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

From I and II,

$$(2y + 30) * (24 + 2y) - (30 * 24) = 360$$

$$4y^2 + 60y + 48y = 360$$

$$4y^2 + 108y - 360 = 0$$

$$\div 4$$

$$y^2 + 27y - 90 = 0$$

$$y^2 + 30y - 3y - 90 = 0$$

$$y(y + 30) - 3(y + 30) = 0$$

$$y = 3, -30$$

Width of the rectangular path = 3 m

Both statements are necessary to answer the question.

7) Answer: C

From statement I,

$$(3000 * 12 + x * 12) / ((x + 1500) * 6) = (7000 - 2000) / 2000$$

$$(6000 + 2x) / (x + 1500) = 5/2$$

$$12000 + 4x = 5x + 7500$$

$$x = \text{Rs.}4500$$

$$\text{Investment of C} = 4500 + 1500 = \text{Rs.}6000$$

So, Statement I alone is sufficient to answer the question.

From statement II,

$$(3000 * 12) / (x * 12) = 2/3$$

$$3000/x = 2/3$$

$$x = \text{Rs.}4500$$

$$\text{Investment of C} = 4500 + 1500 = \text{Rs.}6000$$

So, statement II alone is sufficient to answer the question.

8) Answer: A

From statement I,

$$\text{Cost price of article C} = \text{Rs.}4000$$

$$\text{Marked price of article C} = 4000 * 160/100 = \text{Rs.}6400$$

$$\text{Selling price of article C} = 6400 * 70/100 = \text{Rs.}4480$$

$$\text{Cost price of article A} = 6400 * 100/128 = \text{Rs.}5000$$

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$$\text{Marked price of article A} = 5000 * 180/100 =$$

Rs.9000

$$\text{Cost price of article B} = 5000 * 6/5 = \text{Rs.6000}$$

$$\text{Marked price of article B} = 6000 * 145/100 =$$

Rs.8700

$$\text{Selling price of article B} = 8700 * 75/100 =$$

Rs.6525

$$\text{Required sum} = 9000 + 6525 = \text{Rs.15525}$$

So, Statement I alone is sufficient to answer the question.

From statement II,

Ratio of the marked price of article C to the selling price of the article A is 4:5

$$\text{Marked price of article C} = 4000 * 160/100 =$$

Rs.6400

$$\text{Selling price of article A} = 6400 * 5/4 = \text{Rs.8000}$$

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

9) Answer: C

Let the length of the other diagonal of the rhombus be x m.

$$1/2 * 24 * x = 240$$

$$x = 20 \text{ m}$$

From Quantity I,

$$\text{Area of the rectangle} = 240 + 20 = 260 \text{ m}^2$$

$$\text{Length of the rectangle} = 20 \text{ m}$$

$$\text{Breadth of the rectangle} = 260/20 = 13 \text{ m}$$

From Quantity II,

$$\text{Side of the rhombus} = \sqrt{((24/2)^2 + (20/2)^2)} =$$

$$\sqrt{(12^2 + 10^2)} = \sqrt{(144 + 100)} = \sqrt{244} = 15.65 \text{ m}$$

Quantity I < Quantity II

10) Answer: C

A = 89 (largest number with even tens digit)

C = 21 (smallest number with even tens digit)

From Quantity I,

Each number is divided by 2, then the remainders will be 1 (because the last digit is odd number)

$$\text{Sum of the remainders} = 1 + 1 + 1 = 3$$

From Quantity II,

$$A + B + C = 51 * 3 = 153$$

$$89 + B + 21 = 153$$

$$B = 43$$

$$\text{Sum of the digits of B} = 4 + 3 = 7$$

Quantity I < Quantity II

11) Answer: A

$$100 * 1.5 + 2 = 152$$

$$152 * 2.5 + 2 = 382$$

$$382 * 3.5 + 2 = 1339$$

$$1339 * 4.5 + 2 = 6027.5$$

$$6027.5 * 5.5 + 2 = 33153.25$$

12) Answer: C

$$80 * 0.5 + 5 = 45$$

$$45 * 1 + 5 = 50$$

$$50 * 1.5 + 5 = 80$$

$$80 * 2 + 5 = 165$$

$$165 * 2.5 + 5 = 417.5$$

13) Answer: A

$$10 \quad 34 \quad 66 \quad 108 \quad 162 \quad 230$$

$$24 \quad 32 \quad 42 \quad 54 \quad 68$$

$$8 \quad 10 \quad 12 \quad 14$$

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14) Answer: E

$$15 * 10 + 9 = 159$$

$$159 * 8 + 7 = 1279$$

$$1279 * 6 + 5 = 7679$$

$$7679 * 4 + 3 = 30719$$

$$30719 * 2 + 1 = 61439$$

15) Answer: D

33	113	176	224	259	283
80	63	48	35	24	
17	15	13	11		

Directions (16-20):

Company A:

Total number of vehicles manufactured =
 $196000 * 22/100 = 43120$

Number of buses manufactured= $90000 * 30/100 = 27000$

Number of cars manufactured= $43120 - 27000 = 16120$

Company B:

Total number of vehicles manufactured= $196000 * 15/100 = 29400$

Number of buses manufactured= $90000 * 15/100 = 13500$

Number of cars manufactured= $29400 - 13500 = 15900$

Company C:

Total number of vehicles manufactured= $196000 * 18/100 = 35280$

Number of buses manufactured= $90000 * 20/100 = 18000$

Number of cars manufactured= $35280 - 18000 = 17280$

Company D:

Total number of vehicles produced = $196000 * 25/100 = 49000$

Number of buses produced = $90000 * 25/100 = 22500$

Number of cars produced = $49000 - 22500 = 26500$

Company E:

Total number of vehicles manufactured= $196000 * 20/100 = 39200$

Number of buses manufactured= $90000 * 10/100 = 9000$

Number of cars manufactured= $39200 - 9000 = 30200$

Company	Total number of vehicles manufactured	Number of buses manufactured	Number of cars manufactured
A	43120	27000	16120
B	29400	13500	15900
C	35280	18000	17280
D	49000	22500	26500
E	39200	9000	30200

16) Answer: E

The total number of cars manufactured by companies B and D together = $15900 + 26500 = 42400$

Required percentage = $[(42400 - 35280)/42400] * 100 = (7120/42400) * 100 = 16.79\% = 17\%$ (approx.)

17) Answer: E

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The number of buses manufactured by company
 $X = 13500 * (100 - 40)/100 = 13500 * 60/100 = 8100$

The number of cars manufactured by company
 $X = 8100 * 5/9 = 4500$

Required difference = $30200 - 4500 = 25700$

18) Answer: A

The new total number of vehicles manufactured
by company E = $39200 * 125/100 = 49000$

The new number of cars manufactured by
company E = $30200 * 130/100 = 39260$

The new number of buses manufactured by
company E = $49000 - 39260 = 9740$

Required difference = $39260 - 9740 = 29520$

19) Answer: C

The number of bikes manufactured by company
 $R = (27000 + 18000)/2 = 45000/2 = 22500$

Required ratio = $22500:9000 = 5:2$

20) Answer: B

The number of damaged cars manufactured by
company C = $17280 * 40/100 = 6912$

The number of damaged buses manufactured
by company C = $18000 * 25/100 = 4500$

The total number of damaged vehicles
manufactured by company C = $6912 + 4500 = 11412$

The total number of damaged vehicles
manufactured by company F = $11412 * 5/6 = 9510$

Directions (21-25):

Total number of coins in Bag A = 580

Total number of coins in Bag B = 510

Total number of coins in Bag C = $1510 - 580 - 510 = 420$

Total number of gold coins in all bags together = 570

Total number of silver coins and copper coins in
all bags together = $1510 - 570 = 940$

Total number of silver coins in all bags together
= $940 * 27/47 = 540$

Total number of copper coins in all bags
together = $940 - 540 = 400$

Number of copper coins in Bag A = $3x$

Number of copper coins in Bag B = $2x$

Number of gold coins in Bag C = $4x$

Number of silver coins in Bag B = $2x + 60$

Number of gold coins in Bag B = $510 - 2x - 60 - 2x = 450 - 4x$

Number of silver coins in Bag A = $(450 - 4x) * 100/75 = (450 - 4x) * 4/3$

Number of gold coins in Bag A = $570 - 450 + 4x - 4x = 120$

According to given information,

$120 + (450 - 4x) * 4/3 + 3x = 580$

$(1800 - 16x)/3 + 3x = 460$

$(1800 - 16x + 9x)/3 = 460$

$1800 - 7x = 1380$

$7x = 420$

$x = 60$

Number of copper coins in Bag A = $3 * 60 = 180$

Number of copper coins in Bag B = $2 * 60 = 120$

Number of gold coins in Bag C = $4 * 60 = 240$

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Number of silver coins in Bag B = $120 + 60 =$

180

Number of gold coins in Bag B = $450 - 4 * 60 =$

210

Number of silver coins in Bag A = $210 * \frac{4}{3} =$

280

Number of silver coins in Bag C = $540 - 280 -$

180 = 80

Number of copper coins in Bag C = $400 - 180 -$

120 = 100

Bag	Total number of coins	Number of gold coins	Number of silver coins	Number of copper coins
A	580	120	280	180
B	510	210	180	120
C	420	240	80	100
Total	1510	570	540	400

21) Answer: B

The total number of coins in bag D = $580 * \frac{125}{100} = 725$

The number of copper coins in bag D = $100 * 2 = 200$

The number of gold and silver coins in bag D =

$725 - 200 = 525$

The number of gold coins in bag D = $525 * \frac{3}{(3 + 2)} = 525 * \frac{3}{5} = 315$

22) Answer: D

The total number of silver coins in bags A and B together = $280 + 180 = 460$

The total number of copper coins in bags B and C together = $120 + 100 = 220$

Required difference = $460 - 220 = 240$ more

23) Answer: A

The total number of silver coins in all three bags = 540

The total number of platinum coins in all three bags = $400 * \frac{120}{100} = 480$

Required ratio = $480:540 = 8:9$

24) Answer: C

The number of copper coins in bag T = $180 * \frac{5}{3} = 300$

The number of gold coins in bag T = $300 * \frac{30}{(100 - 30 - 45)} = 300 * \frac{30}{25} = 360$

Required percentage = $\frac{240}{360} * 100 = 66.67\% = 67\%$ (approx.)

25) Answer: E

The average number of silver, gold and copper coins in bag C = $\frac{420}{3} = 140$

Required ratio = $210:140 = 3:2$

26) Answer: A

Quantity of pure milk in vessel A = 60 liters

Quantity of milk in vessel A after removing 10 liters of milk = $60 - 10 = 50$ liters

Ratio of quantity of milk to water in vessel A = $50:10 = 5:1$

60% of the mixture is removed from vessel A =

$60 * \frac{60}{100} = 36$ liters

Final quantity of milk in vessel A = $50 - 36 * \frac{5}{6} = 20$ liters

Final quantity of water in vessel A = $10 - 36 * \frac{1}{6} = 4$ liters

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Quantity of mixture in vessel B = $(20 + 4 + 16) = 40$ liters

Quantity of milk in vessel B = $40 * \frac{3}{5} = 24$ liters

Quantity of honey in vessel B = $40 - 24 = 16$ liters

Required ratio = $(20 + 24) : 4 : 16 = 44:4:16 = 11:1:4$

27) Answer: C

Let the monthly income of Raju be $100x$

Income spend on food = $100x * \frac{20}{100} = 20x$

Remaining income = $100x - 20x = 80x$

Income spend on education = $80x * \frac{30}{100} = 24x$

Income spend on rent and the income saved together = $80x - 24x = 56x$

Income spend on rent = $56x * \frac{9}{14} = 36x$

Income saved = $56x - 36x = 20x$

$20x + 36x = 8400$

$56x = 8400$

$x = 150$

Therefore, the monthly income of Raju = $150 * 100 = \text{Rs.}15000$

28) Answer: E

$\sqrt{2025 * 4 - ? + 15^2} = \sqrt{4900 + 350} \div 2$

$45 * 4 - ? + 225 = 70 + 175$

$180 + 225 = 245 + ?$

$? = 405 - 245$

$? = 160$

29) Answer: A

$21\% \text{ of } 1100 \div \sqrt{?} = 315 \div 45 * \sqrt[3]{81}$

$21\% * 1100 \div \sqrt{?} = 7 * 3$

$231 \div \sqrt{?} = 21$

$\sqrt{?} = 231 \div 21$

$\sqrt{?} = 11$

$? = 121$

30) Answer: C

$220.5 \div 3 - 13 * 7 + ? * 1.5 = 950 \div 4$

$73.5 - 91 + ? * 1.5 = 237.5$

$? * 1.5 = 237.5 + 17.5$

$? = 255 \div 1.5$

$? = 170$

31) Answer: B

Volume of the cone = $\frac{1}{3} * \frac{22}{7} * 7 * 7 * 12 = 616 \text{ m}^3$

Length of the cuboid = 12 m

Volume of the cuboid = $616 - 40 = 576 \text{ m}^3$

Let the breadth of the cuboid be $x \text{ m}$ and the height of the cuboid be $(x - 2) \text{ m}$.

$12 * x * (x - 2) = 576$

$x^2 - 2x - 48 = 0$

$x^2 - 8x + 6x - 48 = 0$

$x(x - 8) + 2(x - 8) = 0$

$x = -2, 8$ (negative values are neglected)

Therefore, the breadth of the cuboid = 8 m

32) Answer: D

The ratio of the profit share of Valar, Malar and Priya = $8000 * 12 : x * 12 : (x - 1000) * 6$

$= 16000:2x:(x-1000)$

$= 16000:2x:(x-1000)$

ACQ,

$16000/(x - 1000) = 100/62.5$

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$$16000/(x - 1000) = 8/5$$

$$x - 1000 = 16000 * 5/8$$

$$x = 10000 + 1000$$

$$x = 11000$$

The investment of Priya = 11000 – 1000 =

Rs.10000

33) Answer: C

Speed of Train A = $400/36 * 18/5 = 40$ km/hr

The distance covered by Train A in 5/2 hours

$$(9.30\text{am} - 7.00\text{ am}) = 40 * 5/2 = 100\text{ km}$$

Both trains meet after 100 km i.e both trains meet between 800 km.

Both Trains meet after 9.30 am and they meet after 8 hours.

Let the speed of Train B be x km/hr.

ACQ,

$$800/(40 + x) = 8$$

$$x = 60\text{ km/hr}$$

Therefore, the speed of Train B = 60 km/hr

34) Answer: B

ACQ,

$$x * (1 + 40/100)^4 - x = 35520$$

$$x * (140/100)^4 - x = 35520$$

$$x * 2401/625 - x = 35520$$

$$(2401x - 625x)/625 = 35520$$

$$1776x = 35520 * 625$$

$$x = \text{Rs.}12500$$

Interest received by B = 12500 + 4300 =

Rs.16800

Let the amount invested by B be Rs.y

$$y * 35 * 6/100 = 16800$$

$$y = \text{Rs.}8000$$

Therefore, the amount invested by B = Rs.8000

35) Answer: D

Total number of balls in the bag = 6 + 4 + 8 = 18

$$\begin{aligned} \text{Required probability} &= 4C_2/18C_2 = 4 * 3/(18 * 17) \\ &= 2/51 \end{aligned}$$

36) Answer: A

Let the marked price of the purse = 100x,

Then, the marked price of the watch = 175x.

Cost price of the purse = 100x – 500

$$100x * 80/100 = 100x - 500 + 100$$

$$80x = 100x - 400$$

$$20x = 400$$

$$x = 20$$

Marked price of the watch = 175 * 20 = Rs.3500

Selling price of the watch = 3500 * 70/100 =

Rs.2450

Therefore, the cost price of the watch = 2450 *

$$100/98 = \text{Rs.}2500$$

37) Answer: B

Let the speed of the boat in still water be B

km/hr and the speed of the current be C km/hr.

$$C = x$$

$$B + C + B - C = 9x$$

$$2B = 9x$$

$$B = 4.5x$$

ACQ,

$$(4.5x - x) * 10 - (4.5x + x) * 5 = 30$$

$$3.5x * 10 - 5.5x * 5 = 30$$

$$35x - 27.5x = 30$$

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$$7.5x = 30$$

$$x = 4$$

$$B = 4.5 * 4 = 18 \text{ km/hr}$$

Therefore, the speed of the boat in still water =
18 km/hr

38) Answer: C

$$2x^2 - 27x + 90 = 0$$

$$2x^2 - 12x - 15x + 90 = 0$$

$$2x(x - 6) - 15(x - 6) = 0$$

$$x = + 6, + 15/2$$

$$x = + 6, + 7.5$$

$$y^2 - 3y - 54 = 0$$

$$y^2 - 9y + 6y - 54 = 0$$

$$y(y - 9) + 6(y - 9) = 0$$

$$y = + 9, - 6$$

Therefore, the relationship can't be determined.

39) Answer: A

$$x^2 - 2x - 63 = 0$$

$$x^2 - 9y + 7x - 63 = 0$$

$$x(x - 9) + 7(x - 9) = 0$$

$$x = + 9, - 7$$

$$y^2 + 30y + 189 = 0$$

$$y^2 + 21y + 9y + 189 = 0$$

$$y(y + 21) + 9(y + 21) = 0$$

$$y = - 21, - 9$$

Hence, $x > y$

40) Answer: C

$$3x^2 + 14x + 15 = 0$$

$$3x^2 + 9x + 5x + 15 = 0$$

$$3x(x + 3) + 5(x + 3) = 0$$

$$x = - 3, - 5/3$$

$$x = - 3, - 1.67$$

$$4y^2 + 19y + 22 = 0$$

$$4y^2 + 8y + 11y + 22 = 0$$

$$4y(y + 2) + 11(y + 2) = 0$$

$$y = - 2, - 11/4$$

$$y = - 2, - 2.75$$

Therefore, the relationship can't be determined.