IDBI Executive Grand Test – IDBIE-180201

ANSWER KEY

1. (4)	21. (2)	41. (2)	61. (5)	81. (2)	101. (3)	121. (3)	141. (3)
2. (1)	22. (3)	42. (3)	62. (3)	82. (1)	102. (1)	122. (5)	142. (1)
3. (3)	23. (4)	43. (2)	63. (3)	83. (3)	103. (2)	123. (4)	143. (4)
4. (4)	24. (1)	44. (3)	64. (4)	84. (2)	104. (5)	124. (1)	144. (5)
5. (1)	25. (4)	45. (5)	65. (1)	85. (3)	105. (1)	125. (3)	145. (1)
6. (1)	26. (2)	46. (1)	66. (5)	86. (4)	106. (2)	126. (5)	146. (3)
7. (5)	27. (1)	47. (3)	67. (2)	87. (2)	107. (3)	127. (4)	147. (3)
8. (2)	28. (4)	48. (2)	68. (3)	88. (5)	108. (1)	128. (1)	148. (2)
9. (4)	29. (3)	49. (5)	69. (4)	89. (4)	109. (4)	129. (2)	149. (3)
10. (3)	30. (3)	50. (3)	70. (5)	90. (3)	110. (1)	130. (5)	150. (1)
11. (5)	31. (1)	51. (2)	71. (4)	91. (2)	111. (2)	131. (1)	
12. (4)	32. (4)	52. (4)	72. (3)	92. (3)	112. (3)	132. (1)	
13. (3)	33. (3)	53. (3)	73. (2)	93. (4)	113. (4)	133. (1)	
14. (1)	34. (4)	54. (1)	74. (5)	94. (1)	114. (1)	134. (2)	
15. (1)	35. (3)	55. (5)	75. (1)	95. (3)	115. (1)	135. (4)	
16. (3)	36. (5)	56. (2)	76. (4)	96. (2)	116. (1)	136. (1)	
17. (2)	37. (3)	57. (4)	77. (1)	97. (1)	117. (3)	137. (4)	
18. (1)	38. (4)	58. (5)	78. (2)	98. (4)	118. (1)	138. (3)	
19. (5)	39. (3)	59. (2)	79. (3)	99. (1)	119. (1)	139. (1)	
20. (2)	40. (2)	60. (5)	80. (1)	100. (3)	120. (3)	140. (2)	

HINTS & SOLUTIONS

1-5. Students let us understand the logic behind this question and let's understand how to solve it. When we see the each step, then we can find that

The machine rearranges one word and one number in each step simultaneously, words are arranged from left end and numbers are arranged from right end.

(i) In this, words are arranged in decreasing manner according to addition of place value of 1st and 2nd letter of the word.

(ii) Numbers are arranged in decreasing order, first all prime numbers are arranged after that non-prime numbers are arranged.

In the last operation, for all words, place values of the first and last letter of the word in the alphabetical series are multiplied. (For example: Xenom -24x13= 312). For all numbers, the square of 1st and last digit is added. (For example: 31 = 9+1=10)

INPUT: 29 xenom 31 fabricate 54 global 35 century

Step I: Xenom 29 fabricate 54 global 35 century 31

Step II: Xenom global fabricate 54 35 century 31 29

Step III: Xenom global century fabricate 35 31 29 54

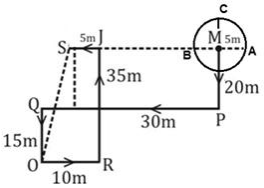
Step IV: Xenom global century fabricate 31 29 54 35

Step V: 312 84 75 30 10 85 41 34

1. (4) 2. (1)

3. (3) 4. (4) 5. (1)

6-7.



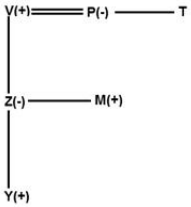
6. (1) Since the speed of Ram and Sita is same it means they covered the same amount of distance while walking. So the total distance covered by Ram or Sita is 115 meters. But the circumference of the circular track is $2\pi r = 31.428$ meters. So she took 115/31.428 = 3.6 rounds of the circular track.

At the end of third round she will be at point A again. But after completing 0.6 round she will be anywhere between C and B which is towards the North East directions from point S.

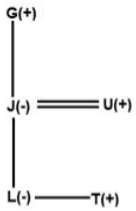
7. (5) Sita will be somewhere between point C and B. And the distance between point C and S will be greater than 20 meters (dist. b/w point B and S) and less than 25 meters (distance between point M and S).

8. (2)

9. (4)



10. (3)



11-15. Step 1. From the information given in the question,
F was born on Thursday. The one who was born on Monday, earns 50k. E ,who lives in a city, is the youngest of them all. Two persons were born between F and A. That means A was born on Monday. Only one person was born between the days on which D and E were born.

Days	Person	Place	Incomes
Monday	A		50K
Tuesday			
Wednesday			
Thursday	F		
Friday	D		
Saturday			
Sunday	E	City	

Step 2. Proceeding with the remaining information,
C was born immediately before G. It means C was born on Tuesday and G was born on Wednesday. B must be the one who was born on Saturday as there is no other possibility left. The income of the villager who was born on Thursday is the square of the income of the person who was born on Saturday.

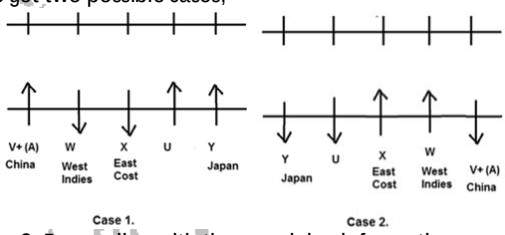
Days	Person	Place	Incomes
Monday	A		50K
Tuesday	C		
Wednesday	G		
Thursday	F		X^2
Friday	D		
Saturday	B		X
Sunday	E	City	

Step 3. Proceeding with the remaining information,
A is the only person living in a village whose date of birth is immediately followed by the date of birth of another villager. That means C is also living in a village. Date of births of all the persons who are living in cities is immediately preceded by the date of birth of the person who is living in a village. It means B is living in a village. From the same conditions used above we can get the place of all the other persons.
The sum of the incomes of G and B is equal to the income of D. It means the income of G and B is 4k and the income of D is 8k as no other possible combinations satisfies the given conditions. Similarly the income of F will be 16K. C earns more than E. So C earns 25K and E will be the one who earns 5K.
So, we get our final solution as,

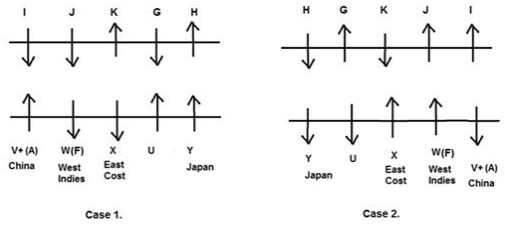
Days	Person	Place	Incomes
Monday	A	Village	50K
Tuesday	C	Village	25K
Wednesday	G	City	4K
Thursday	F	Village	16K
Friday	D	City	8K
Saturday	B	Village	4K
Sunday	E	City	5K

11. (5) 12. (4)
13. (3) 14. (1) 15. (1)

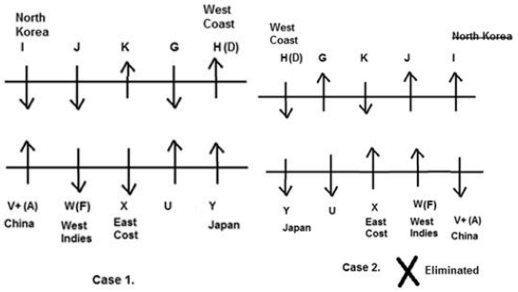
16-20. Step 1. From the information given in the question,
In Row-1- G, H, I, J and K are seated whereas U, V, W, X and Y are seated in Row-2. U is third to the right of V, who is from China. W, who is from West Indies is not an immediate neighbour of U. Y faces opposite direction to W. Y is second to the left of X. Y is to the immediate right of U. Y is third to the left of W. The fifth person from one of the ends in row-2 is from Japan. The person from East Coast is an immediate neighbour of U. A is married to V. Husband of A is sitting at extreme end of the row.
We get two possible cases,



Step 2. Proceeding with the remaining information,
J sits immediate left of the person, who sits opposite to V. Only one person sits between J and G. F is married to that person who is from West Indies. Two persons sit between G and I. J is to the immediate left of K. H is to the immediate left of G. K sits second to the left of H. J and U faces opposite directions.
We have,



Step 3. Proceeding with the remaining information,
D is married to the person from West Coast. The one who sits opposite to Y is from West Coast. The one who sits at the extreme end of Row 1 is from North Korea. The person who is from North Korea does not face north. So, case 2. will be eliminated and we will proceed with case 1.

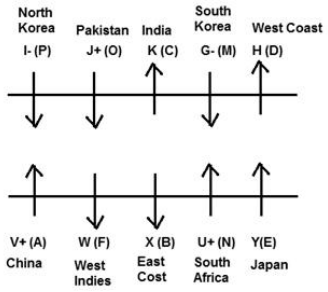


Step 4. B is married to the person who sits opposite to K. G is not from India or South Africa. K, who is married to C does not sit opposite to Y and K is from either South Africa

or India. The one who sits second to the right of G is from Pakistan.

U is not from South Korea or India. E is married to the person who sits diagonally opposite to the wife of P. P is married to the person from North Korea. G and I are not from South Africa or Japan. The husband of N sits in Row-2. Husband of O is sitting to the right of the wife of M.

We have our final arrangement as,



16. (3) 17. (2)
18. (1) 19. (5) 20. (2)

21. (2) In this question we have to choose an appropriate course of action in light of the given statement.
Option I is a correct choice as one should definitely look for other means if he/she is unable to sustain his/her livelihood.
Option II is not a correct choice as there are other peaceful means of protests other than revolt.
Option III is also a correct choice as it is a well-known fact that automation increases the unemployment.

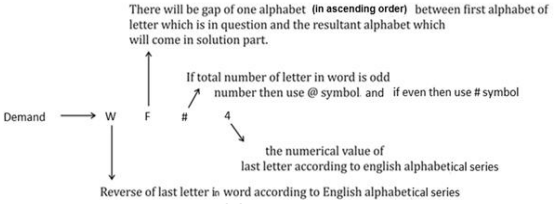
22. (3) Only I and II
Description: For I- Its may be unintentional act by CBI which creates embarrassment for CBI after High Court verdict.
(II) For II-Real Culprit has not been found yet.
(III) For III- As, there is no discussion of any NGO in the given passage.

23. (4) All of the above
Description: For I- Yes there is a chance that some NGO will come in action as it was a high profile case and real culprit is not found yet.
For II- For finding real culprit, there may be an investigation team formed as Noida police and CBI was failed to do the judgment to the case.
For III- As, there was mistake done by CBI according to High Court, CBI may get warning for future perspective.

24. (1) When workers from the automobile industry are retrenched, the pool of labour supply increases. But this will lead to an increased supply of labour in the financial sector with consequent reduction of wages only if the workers retrenched from the automobile industry can work in the financial sector. (a) is the correct answer.
There is no evidence, to support (b). (c) is outside the scope of the argument. Even without (d) being true, the conclusion can be arrived.

25. (4) The proposal for bringing down the number of accidents is to increase the penalty rates. Thus higher the penalty, the lower would be the number of accidents is a major assumption in the argument. So (d) is the correct answer. (a) is not correct as legal validity is not discussed at all. As affordability is not the question (b) is not the answer. If anything, the fine rates being easily affordable will only result in more violations. (c) can not be assumed as it is not suggested that accidents occur only because of traffic, rules violations.

26-30. These are the latest pattern of coding-decoding questions. In these questions we are applying following concept:-



26. (2) 27. (1)
28. (4) 29. (3) 30. (3)

31-35. i. From the definite conditions which are given in the questions –

Student	Floor	School	Games
O	3rd	DAV(international)	
M	3rd	St. Maria	Football
L		DAV(junior)	Volleyball
P	5th		Boxing
	2nd	St. francis	Basketball

ii. The student who studies in St. Maria is oldest in age while one of the students who studies in DAV, who studies in DAV Junior, is the youngest in age. The age of the other person who studies in DAV, who studies in DAV international, lies between the person who studies in St. francis and the person who studies in St. Maria. N studies in St. francis because only N remains so their age in descending order.

M > O > N > P > L

iii. Two of these five persons play Volleyball so O plays volleyball and P studies in BBL, the final arrangement is-

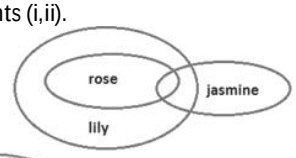
M > O > N > P > L

Student	Floor	School	Games
N	2nd	St. francis	Basketball
O	3rd	DAV(international)	Volleyball
M	3rd	St. Maria	Football
L	4th	DAV(junior)	Volleyball
P	5th	BBL	Boxing

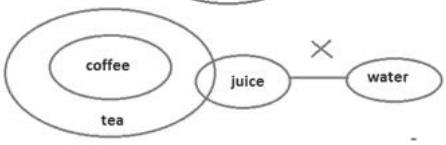
31. (1) 32. (4)
33. (3) 34. (4) 35. (3)

36. (5) None is correct.

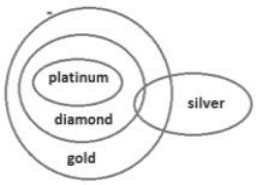
37. (3) We can conclude the third statement (vi) from the first two statements (i,ii).



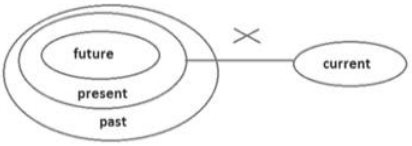
38. (4)



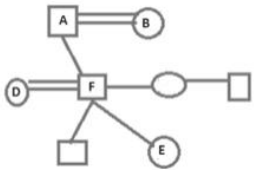
39. (3)



40. (2)

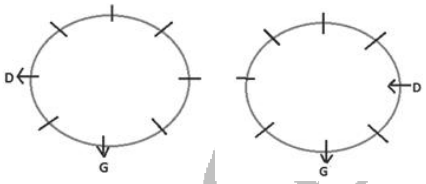


41-45. i. From the given definite conditions, first draw blood relation tree as F has father, mother, brother, sister, wife, son and daughter.
ii. From the line 'E sits immediate right of her uncle', 'D sits opposite to her brother in law', 'No one sits between A and his son', and 'B sits second to the right of her granddaughter', it is clear that E is the daughter of F, D is the wife of F, A is the father of F and B is the mother of F.

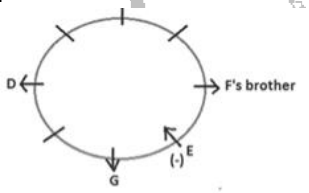


iii. As proceeds towards circular arrangement, let us start from G who faces away from the center and both of G's neighbours are females. G sits second to the left of D so there can be two possibilities
1- D faces away from the center
2- D faces to the center

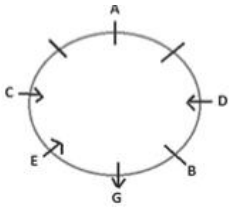
1- 2-



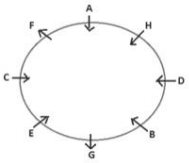
iv- First take the case (1), D sits opposite to her brother in law, who is F's brother and it is given that E sits immediate right of her uncle who is F's brother and E faces to the center.(D's and F's brother's direction is same)
v. It is given that 'The Father of F sits third to the left to his granddaughter' so A sits third to the left of E and it cannot be possible in this condition because that position is already fixed.

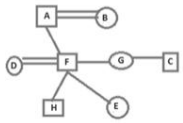


vi. In Case (2), E's position is fixed according to the conditions stated above. It is given that A sits third to the left of E and B sits second to the right of E. 'A sits second to the right to the one who is opposite to C' so C is the brother of F. H- is a male, so G is the sister of F and H is the son of F.



vii. It is given that 'No one sits between A and his son' so A and F are immediate neighbours. G and B are daughter mother who are immediate so faces opposite direction. B faces to the centre. F faces opposite direction to his brother so F faces way from centre.
viii. One couple faces opposite direction who are F and D. One couple faces same direction so A faces to the centre. H sits immediate left to A and also faces to the centre.

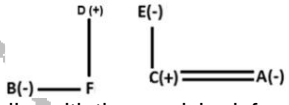




41. (2) 42. (3)
43. (2) 44. (3) 45. (5)

46-50. Step 1. From the information given in the question,
E, who is a fan of Floyd mayweather, is mother–in–law of A, who is wife of C. D is the father F and he is not a fan of Anderson Silva or Nicholas Tesla. C is not a fan of Nicholas Tesla. B is a fan of Swami Vivekananda and is the sister of F, who is a fan of Mahatma Gandhi.

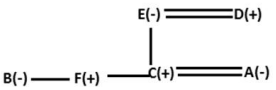
PERSON	Famous Personalities
A	
B	Swami Vivekananda
C	~~Nicholas Tesla~~
D	~~Anderson silva, Nicholas Tesla~~
E	Floyd mayweather
F	Mahatma Gandhi



Step 2. Proceeding with the remaining information,
There are three males and three females. It means F is a male. There are two married couples and two persons are unmarried. There are only two generations in the family. It means D must be married to E. Since C and D are not a fan of Nicholas Tesla, it means A must be the fan of Nicholas Tesla. Since D is not a fan of Anderson Silva, it means C must be a fan of Anderson Silva and D must be a fan of Manmohan Singh.
So finally we get our solution as,

PERSON	Famous Personalities
A	Nicholas Tesla
B	Swami Vivekananda
C	Anderson silva
D	Mammohan Singh
E	Floyd mayweather
F	Mahatma Gandhi

Blood Relation Tree.



46. (1) 47. (3)
48. (2) 49. (5) 50. (3)

51. (2) Refer to first paragraph of the passage. It is inferred that the stocks even after being plunged by 75 percent has now recovered substantially.

52. (4) Refer to the 2nd paragraph of the passage, "Mumbai's main equity index hit an all-time high in trading early Friday amid India's continuing economic boom; and Hong Kong shares reached a five-year high while indices in Singapore, Jakarta and Sydney set new records. "

53. (3) Refer to second paragraph of the passage. "And though stocks in Asia, in particular, are on fire, they are not alone. From Germany to Venezuela to South Africa, equity markets in both mature and emerging markets have moved up sharply this year — and show little sign of slowing."

54. (1) Refer to fifth sentence of third paragraph. Throughout the paragraph it is explained in detail.

55. (5) All the options are incorrect and are not mentioned in this passage. Hence option (e) is the correct choice for the given question.

56. (2) Refer to the last paragraph of the passage, "When rates are high, stocks will die." From here we can infer that option (b) is the correct choice for the given question.

57. (4) Refer to the last paragraph of the passage, "A brief recession and the Sept. 11 terrorist attacks in 2001 spurred a extended period of very low interest rates."
58. (5) Refer to the last sentence of the paragraph. There can be some confusion regarding the second statement but the word given in the passage along with it is "potentially", so it is not definite.
59. (2) (i) and (ii) sentence are false according to the passage.
60. (5) Plunged means jump or dive quickly and energetically. So, emanate is the word which is opposite in meaning to it.
61. (5) Briskly means in a lively manner. So, slowly is the word which is opposite in meaning to it.
62. (3) Boosted means help or encourage (something) to increase or improve. So, deflated is the word which is opposite in meaning to it.
63. (3) Buoyant means cheerful or optimistic. So, upbeat is the word which is similar in meaning to it.
64. (4) Spurred means to encourage an activity or development or make it happen faster. So, stimulated is the word which is similar in meaning to it.
65. (1) Skeptic means a doubter. So, disbeliever is the word which is similar in meaning to it.
66. (5) 'abating, advised' is the correct set of words.
Obliterating means destroy utterly; wipe out.
Contrived means deliberately created rather than arising naturally or spontaneously.
Abating means become less intense or widespread.
67. (2) 'downsides, aspect' is the correct use.
Downsides means disadvantage.
68. (3) 'reasons, focussed' is the correct set of words.
Vindications meansshow or prove to be right, reasonable, or justified.
69. (4) 'backlash, swamp' is the correct set of words making the sentence meaningful.
Resile means abandon a position or a course of action.
Revulsion means a sense of disgust and loathing.
Swamp means overwhelm.
Tramp means walk heavily or noisily.
70. (5) 'committed, increased' fits the sentences most appropriately.
71-75. The correct sequence is DCABE.
71. (4) 72. (3)
73. (2) 74. (5) 75. (1)
76. (4) 'should be heavily fined' is the correct use.
77. (1) 'can be facilitated by' is the correct use.
78. (2) 'attempts at acquainting' is the correct use.
79. (3) 'Despite their' is the correct use.
80. (1) we use (Be + v3) in passive voice hence option (a) is the correct answer.
81. (2) Use 'to' in place of 'than'.
82. (1) Use 'The cattle' in place of 'cattles' as 'cattle' is plural noun.
83. (3) 'not' will be used as it is not used after 'lest'.
84. (2) 'has' will be used in place of 'have' as singular countable noun is used after 'many a'.
Ex. Many a cup is on the table.
85. (3) 'have' will be used in place of 'has' as the subject of the sentence 'The issues' is plural.
86. (4) 'the' will be used in place of 'a' as 'with the naked eye' is the correct expression.
87. (2) Use 'the' in place of 'a' as 'sweet letter' is definite here.
Ex. I have read the book which he gave me.
88. (5) The sentence is grammatically correct.
89. (4) 'do not' will not be used here as 'not' is not is used after 'unless' or 'until'.
90. (3) 'had' will be used in place of 'have' as the sentence is in past tense.
91. (2) 92. (3)
93. (4) 94. (1) 95. (3)
96. (2) 97. (1)
98. (4) 99. (1) 100. (3)

101. (3) **I.** $2x^2 + 11x + 14 = 0$
$2x^2 + 4x + 7x + 14 = 0$
$2x(x+2) + 7(x+2) = 0$
$(x+2)(2x+7) = 0$
$x = -2, \frac{-7}{2}$
II. $4y^2 + 12y + 9 = 0$
$4y^2 + 6y + 6y + 9 = 0$
$(2y+3)(2y+3) = 0$
$y = \frac{-3}{2}$
$y > x$

102. (1) **I.** $5x^2 - 18x + 9 = 0$
$5x^2 - 15x - 3x + 9 = 0$
$(5x-3)(x-3) = 0$
$x = 3, \frac{3}{5}$
II. $20y^2 - 13y + 2 = 0$
$20y^2 - 5y - 8y + 2 = 0$
$5y(4y-1) - 2(4y-1) = 0$
$y = \frac{2}{5}, \frac{1}{4}$
$x > y$

103. (2) **I.** $x^3 = 1331$
$x = 11$
II. $y^2 = 121$
$y = \pm 11$
$x \geq y$

104. (5) **I.** $x = 14$
II. $\sqrt{y + 155} = 7 + 6$
$y = 169 - 155$
$y = 14$
$x = y$

105. (1) **I.** $3x - 2y = 10$
II. $5x - 6y = 6$
On solving (i) and (ii)
$x = 6 \text{and} y = 4$
$x > y$

106. (2) Required average income = (Total expenditure + total savings]/12
$= [(1100 \times 3 + 2200 \times 4 + 4620 \times 5) + 2100]/12$
$= 37300/12 = 3108.333$

107. (3) Let the total number of students = X
Number of students failing in first subject = 40% of X
Number of students failing in second subject
= 10% of rest = 10% (60%) of X = 6% of X
Therefore, total number of students failing in both the subjects
= (40 + 6)% of X = 46% of X .....(i)
Therefore, students passing in two subjects
= 54% of X
The students passing in remaining subject
$= 75\% (54\% \text{ of } X) = \frac{81}{2}\%$ of X
Hence students failing in remaining subject
$= \left(54 - \frac{81}{2}\right)\%$ of $X = \frac{27}{2}\%$ of X .....(ii)
Therefore, total number of students failing in all the subjects; equation (i) + (ii)
$= \left(46 + \frac{27}{2}\right)\%\ X = \frac{119}{2}\%$ of X
Number of students failing – Number of students passing = 570 (Given)
i.e., $\left(\frac{119}{2} - \frac{81}{2}\right)\%$ of X = 570 ⇒ 19% of X = 570
⇒ Thus, $X = \frac{570 \times 100}{19} = 3000$
Hence, the total number of students is 3,000

108. (1) The man invests Rs. 1,200 at 10% p.a.
At the end of 1st year the amount = Rs. 1,320
Withdrawal $\frac{30}{100} \times 1320 + 24 =$ Rs. 420
Amount at the end of second year
$= 900 \times 1.1 =$ Rs. 990
Withdrawal $= \frac{30}{100} \times 990 + 93 =$ Rs. 390
∴ Amount at the end of 3 years
$= 600 \times 1.1 =$ Rs. 660

109. (4) Let total money be Rs. X
Then, $X = 0.25X + 0.1X + 0.5[1 - 0.25 - 0.1]X + 26$
$\Rightarrow X =$ Rs. 80

110. (1) Let the speed of X be x kmph. Distance travelled by X in 2 hours = 2x km.
Suppose X takes t hours to travel $\frac{1^{th}}{5}$ of the distance AB.
Y would take (t–2) hours to travel $\frac{1^{th}}{5}$ of the distance AB.
As Y's speed is thrice that of X's speed.
$\frac{t-2}{t} = \frac{1}{3}$
t = 3
$\frac{1^{th}}{5}$ of the distance AB = 3x km.
AB =15x km
Time taken by X to cover 15x km = $\frac{15x}{x} = 15$ hours
Time taken by Y to cover 15x km = $\frac{15x}{3x} = 5$ hours.
∴ Difference in the times = 10 hours.

111. (2) Boys in Arts
$= \left[\frac{30}{100} \times 3500\right] - \left[\frac{38}{100} \times 1500\right]$
$= 1050 - 570$
$= 480$
Boys in Science
$= \left[\frac{22}{100} \times 3500\right] - \left[\frac{11}{100} \times 1500\right]$
$= 770 - 165$
$= 605$
Total = 480 + 605 = 1085

112. (3) Girls in Arts and Commerce
$= \frac{(38+21)}{100} \times 1500$
$= 59 \times 15$
$= 885$
Boys in IT
$= \left[\frac{20}{100} \times 3500\right] - \left[\frac{18}{100} \times 1500\right]$
$= 700 - 270$
$= 430$
Ratio $= \frac{885}{430} = \frac{177}{86}$

113. (4) Total girls in IT and Commerce
$= \frac{(18+21)}{100} \times 1500$
$= 585$
Total students in Arts an Management
$= \frac{30+16}{100} \times 3500$
$= 1610$
Req. %
$= \frac{585}{1610} \times 100 \approx 36\%$

114. (1) Girls in Science $= \frac{11}{100} \times 1500 = 165$
New number of IT students
$= \frac{40}{100} \times 165 + \frac{20}{100} \times 3500$
$= 66 + 700$
$= 766$

115. (1) Total student in management, Science and Commerce
$= \frac{(16+12+22)}{100} \times 3500 = 1750$
Total girls in Management, Science and Commerce
$= \frac{(12+11+21)}{100} \times 1500 = 660$
Req% $= \frac{(1750-660)}{3500} \times 100 \approx 31\%$

116. (1) Assume there is 20 liters of the mixture in both the vessels.
In vessel A, milk = 16 liters and water = 4 liters
25% from A to B ; milk in B = 15 + 4 = 19 liters
water in B = 5 + 1 = 6 liters; ratio = 19 : 6
Equal amount from vessel B to vessel A
milk in A $= 12 + \frac{19}{5} = \frac{79}{5}$
water in A $= 3 + \frac{6}{5} = \frac{21}{5}$
Hence, the ratio is 79 : 21

117. (3) Let the quantity of refined oil initially be Q.
Then we have $Q \times \frac{3}{4} \times \frac{3}{4} \times \frac{3}{4} \times \frac{3}{4} = 10 \rightarrow 2560/81$ litres

118. (1) Let the amounts be Rs. 100 and Rs. 200 respectively. The value of the 100 would become 100 × 6/7 × 6/7 = 3600/49 = 73.46
The other person's investment of 200 would become 200 × 1.2 × 1.2 = 288
The total value would become 288 + 73.46 = 361.46
This represents approximately a 20% increase in the value of the amount after 2 year.

119. (1) Let the original rate be R%. Then, new rate = (2R)%.
$\therefore \left(\frac{725 \times R \times 1}{100}\right) + \left(\frac{362.50 \times 2R \times 1}{100 \times 3}\right) = 33.50$
$\Rightarrow (2175 + 725)R = 33.50 \times 100 \times 3 = 10050$
$\Rightarrow R = \frac{10050}{2900} = 3.46\%$

120. (3) Let the distance between the school and the home be x km.
Then, $\frac{x}{8} - \frac{2.5}{60} = \frac{x}{10} + \frac{5}{60}$ or $\frac{x}{8} - \frac{x}{10} = \frac{5}{60} + \frac{2.5}{60}$
Or $\frac{2x}{80} = \frac{7.5}{60}$ or $x = \frac{7.5 \times 80}{2 \times 60} = 5$ km

121. (3) Overall percentage discount after two successive discount
$= 10\% + 10\% - \frac{10 \times 10}{100}$
$= 19\%$
$Mark\ price\ of\ Lenevo = 60 \times \frac{150}{100} = 90$
$Selling\ price\ for\ 40\ unit = 90 \times \frac{81}{100} \times 40 = 2916$
Total cost price = (40 + 2) 60 = 2520
Profit = 396

122. (5) Selling price of Oppo
$= 20 \times 150 \times \frac{120}{100} \times \frac{95}{100}$
$= 3420$
Profit = 3420 – 20 × 150 = 420
Profit in selling 1 unit of Apple phone = 20
Number of units Apple have to sold = 420/20 =21

123. (4) Decreased cost of production
$= \frac{5}{6} \times 30 = 25$
Profit per piece at normal rate
$= 30 \times \frac{180}{100} \times \frac{60}{100} - 30$
$= 2.4$
Total profit at normal rate = 2.4 × 50 = 120
Profit per piece at decreased rate of cost of production
$= 25 \times \frac{180}{100} \times \frac{60}{100} - 25$
$= 2$
Total profit at decreased rate = 2 × 60 = 120
Required difference = 0

124. (1) Total profit of MI
$= \left(45 \times \frac{140}{100} \times \frac{80}{100} - 45\right) 60$
$= 5.4 \times 60$
$= 324$
80% of x are sold at normal profit and 16% are sold at two successive discount
Normal selling price per piece of Oppo = 171
Normal profit per piece = 21
Selling price after two successive discount
$= 180 \times (100\% - 28\%)$
$= 180 \times \frac{72}{100}$
$= 129.6$
Loss after two successive discount = 150 – 129.6 = 20.4
So,
$683.4 = 324 + \frac{84}{100}x \times 21 - \frac{16}{100}x \times 20.4$
$359.4 = \frac{21 \times x \times 21}{25} - \frac{4 \times x \times 20.4}{25}$
$359.4 \times 25 = 441x - 81.6x$
$359.4 \times 25 = 359.4x$
$x = 25$

125. (3) Let the quantity sold for both the product is = 1
$SP\ of\ HTC = 30 \times \frac{180}{100} = 54$
$SP\ of\ Apple = 100 \times \frac{160}{100} \times \frac{575}{800} = 115$
$Profit\% = \left(\frac{(115 + 54) - (100 + 30)}{(100 + 30)}\right) \times 100 = 30\%$

126. (5) Let the no. of red balls be x.
So A → x+2 = no. of yellow balls.
B → x+2+G=3x or G = 2x–2
So C → $\frac{x}{2x-2} = \frac{3}{4}$ or x = 3
So, required probability = $\frac{{}^{3}c_1 \times {}^{5}c_1 \times {}^{4}c_1}{{}^{12}c_3} = \frac{3}{11}$

127. (4) Let x, y and z be the number
So A → z–x =20 ---- (i)
B → x+z = 2y ---- (ii)
C → y-x = 10 ----- (iii)
Putting value of y from (iii) in (ii), we get
x+z=2 (10+x)
z-x = 20, which is identical to (i)
So $\frac{x+y+z}{3}$ can't be determine from A, B and C together.

128. (1) From A; 600–500 = 10% of cost price
Hence cost price = $\frac{100}{10} \times 100 = 1000$
From B; $\frac{10 \times 10}{100}$% of cost price, 1% = 10; 100%=Cost price = 1000

129. (2) Let L be the length of train x and S its speed in m/s
∴ B → L+400=S×28 ..... (i)
C → L = S × 8 ..... (ii)
Solving (i) and (ii), we get = 20 m/sec

130. (5) P+Q+R+S= 96
A → P+Q+S = 60 or R = 36 .... (i)
B → Q+S = 40 ..... (ii)
C → R+S = 50 from R = 36 ..... (i)
We get S = 14. Putting S = 14 in (ii), we get Q = 26

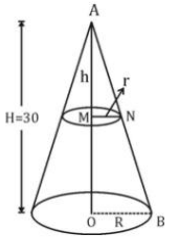
131. (1) First is cricket ball, second is cricket ball and third is cricket ball → (3/9) × (3/9) × (3/9) =(1/27)

132. (1) (2/9) × (3/9) × (4/9) = (8/243)

133. (1) Let they worked for x days
$\frac{x}{9} + \frac{x}{18} + \frac{x-3}{3} = 1$
$9x = 36$
x = 4

134. (2) According to the question,
Let C alone can complete in x day
$\frac{1}{10} + \frac{1}{24} + \frac{1}{x} = \frac{1}{6}$
$\frac{1}{x} = \frac{1}{6} - \left[\frac{1}{10} + \frac{1}{24}\right]$
$= \frac{40 - [24 + 10]}{240} = \frac{6}{240}$
∴ x = 40 days

135. (4) Let H and R be the height and radius of bigger cone respectively and h and r that of smaller cone.

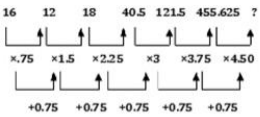


From triangles AOB and AMN.
∠A is common and MN ∥ OB.
∴ Triangles AOB and AMN are similar,
$\therefore \frac{AO}{AM} = \frac{BO}{MN}$
$\Rightarrow \frac{30}{h} = \frac{R}{r}$ ... (i)
Volume of smaller cone $= \frac{1}{3}\pi r^2 h$
Volume of bigger cone $= \frac{1}{3}\pi R^2 H$
According to the question,
$\frac{1}{3}\pi r^2 h = \left(\frac{1}{3}\pi R^2 H\right) \times \frac{1}{27}$
$\Rightarrow r^2 h = \frac{R^2 H}{27} \Rightarrow 27r^2 h = R^2 H$
$\Rightarrow \frac{27h}{H} = \frac{R^2}{r^2}$
$\Rightarrow \frac{27h}{H} = \left(\frac{30}{h}\right)^2$ [From (i)]
$\Rightarrow \frac{27h}{H} = \frac{900}{h^2}$
$\Rightarrow 27h^3 = 900H = 900 \times 30$
$\Rightarrow h^3 = \frac{900 \times 30}{27} = 1000$
$\Rightarrow h = \sqrt[3]{1000} = 10$ cm
∴Required height = 30 – 10 = 20 cm

136. (1) 13, 16, 14, 17, 15, 18, **(16)**
+3 -2 +3 -2 +3 -2

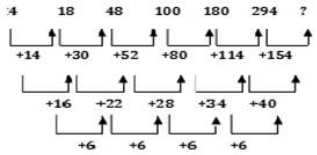
137. (4) 25, 50, 35, 70, 55, 110, 95, **(190)**
×2 -15 ×2 -15 ×2 -15 ×2

138. (3) Pattern of Series is -



Hence, missing number is - 455.625×4.50=2050.3125

139. (1)



Hence, missing number is --- 294 + 154 = 448

140. (2) Pattern is
$(3 \times 2), (6 \times 3), (18 \times 6)$
$\therefore 108 \times 18 = 1944$

141. (3) Total students in college E
$= \frac{275}{16 \times 100} \times 6400 + 6400$
$= 1100 + 6400$
$= 7500$
Required ratio
$= \frac{40}{100} \times 6400 : \frac{38}{100} \times 7500$
$= 40 \times 64 : 38 \times 75$
$= 256 : 285$

142. (1) Let total students from college A = 100 x
Let total students from college C = 100 y
$\frac{30x}{20y} = \frac{14}{9}$
$\frac{x}{y} = \frac{28}{27}$
and $24x - 22y = 156$
$24 \times \frac{28}{27} \times y - 2y = 156$
$8 \times \frac{28}{9} y - 22y = 156$
$224y - 198y = 156 \times 9$
$26y = 156 \times 9$
$y = 54$
$x = 56$
Required percentage $= \frac{200}{5600} \times 100 = 3\frac{4}{7}\%$

143. (4) Let total students in college C = 2400
and total students in college D = 2900
Required percentage
$= \frac{24 \times 29 - 22 \times 24}{24 \times 29} \times 100$
$= \frac{700}{29}\%$
$= 24\frac{4}{29}\%$

144. (5) Let male student who play Cricket = x
So female student who play Cricket
$= x - \frac{4}{17}x$
$= \frac{13}{17}x$
Ratio of male to female who play Cricket in A $= \frac{17}{13}$
$(17 + 13) \rightarrow 30\%$
Required percentage
$= \frac{13}{24} \times 100$
$= \frac{325}{6}\%$
$= 54\frac{1}{6}\%$

145. (1) Total no. of students from college C $= 81\frac{11}{69}\%$ of 6900
$= 5600$
Required average $= \frac{1}{2}\left[\frac{58+22}{100} \times 5600\right]$
$= \frac{1}{2}[4480]$
$= 2240$

146. (3) Let the speed of the train be x m/sec. Then,
Distance travelled by the train in 10 min. = Distance travelled by sound in 30 sec.
$\Leftrightarrow x \times 10 \times 60 = 330 \times 30$
$\Leftrightarrow x = 16.5.$
$\therefore$ Speed of the train $= 16.5 \text{ m/sec} = \left(16.5 \times \frac{18}{5}\right) \text{km/hr}$
$= 59.4 \text{ km/hr}$

147. (3) Let r be the radius of each circle.
Then by given condition,
$\pi R^2 = 2\pi R \Rightarrow R = 2$
$\therefore$ The length of the side of the square = 8
Now the area covered by 4 coins $= 4 \times \pi (2)^2 = 16\pi$
And area of the square = 64
$\therefore$ The area which is not covered by the coins
$= 64 - 16\pi = 16(4 - \pi)$

148. (2) AD = 6.5
$\therefore$ AB = 13 (diameter)
Now $\angle ACB = 90°$ (since the diameter of a circle subtends 90° at the circumference)
So by pythagorus theorem, CB = 12 cm.
$\therefore$ area of $\Delta ACB = \frac{1}{2} \times 5 \times 12 = 30$ sq. cm

149. (3) Required probability $= 1 - \left(1 - \frac{1}{6}\right) \times \left(1 - \frac{2}{5}\right) = 1 - \frac{5}{6} \times \frac{3}{5} = 1 - \frac{1}{2} = \frac{1}{2}$

150. (1) The event definition is
A girl is selected from the first group and one boy each are selected from the second and third groups. OR A girl is selected from the second group and one boy each are selected from the first and third groups. OR A girl is selected from the third group and one boy each are selected from the first and second groups.
Required probability $= \frac{13}{32}$