IBPS SO Preliminary Grand Test –ISP-181206

HINTS & SOLUTIONS

ANSWER KEY

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

HINTS & SOLUTIONS

1. (2) Refer the last few lines of first paragraph "In the Philippines, Indonesia, Japan and China, people already grow fish and prawns in freshwater ponds. But this is just the beginning. In the future, to meet the great needs of a rapidly expanding world population, man will have to farm the sea as he has for so long farmed the land."

2. (1) We can infer from second paragraph of the passage where it has been mentioned that transplanted flounders grew to three times the size of their brothers in the crowded Dutch waters.

3. (3) Refer the first and second sentences of the third paragraph "In the sea farming of the future it should not be necessary to spread fertilizer in the seas as farmers do on land. But it may be useful to stimulate the flow of nutrients to those areas most conveniently accessible for sea farming."

4. (2) Refer the fourth paragraph "As long ago as World War I, a marine biologist calculated that 'weeds', i.e. inedible creatures like brittle stars and starfish, eat up all but a very small percentage of the fish food available in the sea. To clear away these weeds so that the fish can get at least 20 percent of the available food, the sea farmer of the future will have to use completely new techniques."

5. (4) Refer the fourth sentence of the last paragraph "But for many countries in Asia, Africa and Latin America with rocketing birth rates, survival may depend on the development of some sort of intensive underwater farming."

6. (3) Refer the second sentence of the passage "Square mile after square mile, the sea is estimated to be more productive than the land."

7. (3) We can infer from the third paragraph that the clause means we will not have to spread fertilizers on the sea-bed.

8. (3) Refer the last few lines of the last paragraph "In the first place, man is not really so efficient at collecting plankton as are the whales, and so it might well turn out that the process would be too expensive. In the second place, a good deal of it does not taste very pleasant."

9. (4) Flounder means 'be in serious difficulty'. Here in the passage, fish is referred as flounder as it is difficult for them to survive in crowded waters.

10. (3) Refer the last sentence of the second paragraph ". Striped bass, shad and soft-shelled clams have been successfully transplanted from the east to the west coast of North America, and the North American Chinook salmon now lives and breeds around New Zealand."

11. (1) "surveyed, found, exhausted, experiencing" is the most appropriate set of words that should replace the existing ones to make the sentence meaningful. Hence (a) is the correct choice.
Surveyed means looked closely at or examined (someone or something).
Limped means walked with difficulty, typically because of a damaged or stiff leg or foot.
Exhausted means very tired.

12. (5) The given set of words in the sentence is already correct and does not require any replacement. Hence (e) is the correct choice.
Insight means the capacity to gain an accurate and deep understanding of someone or something.
Intuition means the ability to understand something instinctively, without the need for conscious reasoning.
Dubious means hesitating or doubting.
Perception means the ability to see, hear, or become aware of something through the senses.
Guile means sly or cunning intelligence.
Overtly means without concealment or secrecy; openly.

13. (3) "bewitching, wilts, unfailingly, oblivious" is the most appropriate set of words that should replace the existing ones to make the sentence meaningful. Hence (c) is the correct choice.
Bewitching means enchanting and delightful (someone).

Wilt means (of a plant, leaf, or flower) become limp through heat, loss of water, or disease; droop.
Unfailingly means in a reliable or unchanging way; always.
Oblivious means not aware of or concerned about what is happening around one.
Explicitly means in a clear and detailed manner, leaving no room for confusion or doubt.
Abstract means existing in thought or as an idea but not having a physical or concrete existence.

14. (5) (1) show, prompt, sizable, disarming
"show, prompt, sizable, disarming" is the most appropriate set of words that should replace the existing ones to make the sentence meaningful. Hence (a) is the correct choice.
Prompt means done without delay; immediate.
Disarming means removing the fuse from (a bomb), making it safe.
Tardy means delaying or delayed beyond the right or expected time; late.
Sizable means fairly large.
Gross means (especially of wrongdoing) very obvious and unacceptable.
Parade means display (someone or something) while marching or moving around a place.

15. (5) The given set of words in the sentence is already correct and does not require any replacement. Hence (e) is the correct choice.
Unjustified means not shown to be right or reasonable.
Absolved means declare (someone) free from guilt, obligation, or punishment.
Improbable means not likely to be true or to happen.
Flimsy means insubstantial and easily damaged.
Revoke means officially cancel (a decree, decision, or promise).
Repudiate means refuse to accept; reject.
Sneaky means furtive; sly.
Overdue means not having arrived, happened, or been done by the expected time.

16. (5) All the sentences, except (e), belong to the same paragraph. The sentences in the sequence of abcd form a coherent paragraph which is about the importance of forgiveness in one's life. However, the sentence (e) finds no alternative to be matched with. It makes no connection with any of the given sentences. Hence the option (e) is the correct choice of elimination.

17. (3) All the sentences, except (c), belong to the same paragraph. The sentences in the sequence of bdae form a coherent paragraph which is about the recent trial court's judgment on 2G scam. However, the sentence (c) finds no connection with the paragraph so formed as it is referring to a sum of money invested in different firms, which finds none of the options to be matched with. Hence the option (c) is the correct choice of elimination.

18. (2) All the sentences, except (b), belong to the same paragraph. The sentences in the sequence of daec form a coherent paragraph which is about the future possibilities of logistics industry and its role in benefitting the economic zone. However, the sentence (b) finds no connection with any of the given sentences as it is about the role of goods and services tax (GST). Hence the option (b) is the correct choice of elimination.

19. (5) All the sentences, except (e), belong to the same paragraph. The sentences in the sequence of acdb form a coherent paragraph which is about the need of ensuring cybersecurity in the current world of digitization for the security and safety of the cyberspace. However, the sentence (e) finds no relevance as it cannot be connected to any of the given sentences. Hence the option (e) is the correct choice of elimination.

20. (1) All the sentences, except (a), belong to the same paragraph. The sentences in the sequence of cbde form a coherent paragraph which is about the importance of English language in the present world. However, the sentence (a) finds no alternative to be matched it. It doesn't fit into the theme of the given paragraph as it referring to some survey reports. Hence the option (a) is the correct choice of elimination.

21. (3) 'quest/ pursuit' is the correct choice that means a long or arduous search for something.

22. (1) 'request/ behest' is the correct choice to be made.

23. (4) Option (4) best suits the purpose.
Relent means abandon or mitigate a severe or harsh attitude, especially by finally yielding to a request.

24. (4) 'founded/ established' is the correct choice.

25. (5) 'contribute/ accord' best suits the purpose.

26. (3) 'preventing/ averting' is the most appropriate choice among all.

27. (4) Option (4) best suits the purpose.

28. (2) 'signed/ ratified' is the correct choice to be made.

29. (2) 'help/ assist' is the correct choice to be made.

30. (1) option (1) is the most appropriate choice among all other options.

31. (3) All the sentences, except (c), are insufficient in providing a correct required sentence as they lack the corrective measures to connect these four statements. The sentence (a) is incorrect both grammatically and structurally. The sentence (b) is meaningless as it gives a very vague meaning to the sentence which is irrelevant. The sentence (d) brings out the incorrect grammar usage; "comprising of" should be replaced by "comprising." Moreover, the sentence (d) uses the incorrect connector to derive the sentence. However, the sentence (c) gives an apt and meaningful outcome. It is both grammatically and structurally correct. Hence (c) is the correct choice.

32. (5) The given sentence is grammatically correct and hence it doesn't require any correction.

33. (1) All the sentences, except (a), contain grammatical errors which can be easily identified. In the case of sentence (b), there is a use of incorrect form the verb; the present form of the verb "is" should be replaced by "was" as the sentence is in the Past Tense. Similarly, in the sentence (c), the present form of the verb "views" should be replaced by "viewed" to satisfy the subject-verb agreement. Moreover, the use of the connector "although" is not required in the sentence. In the sentence (d), there is an error in the use of the relative pronoun "who," which should be replaced by "which" and at the same time the use of the connector "while" changes the meaning of the sentence. However, the sentence (a) is both grammatically correct and contextually meaningful. Hence (a) is the correct choice.

34. (3) Examine the inference carefully, it implies that the languages, besides officially considered ones describe

the linguistic richness of our country. Among these three passages, paragraphs (1) and (2) describe the different languages being spoken in the state of Uttarakhand and North India and their importance in creating vast linguistic diversity. Thus both the paragraphs generate the same inference. However, in the case of the paragraph (3), there is a mention of myths related to official language of the country. Thus it doesn't agree with the given inference. Hence both the paragraphs (1) and (2) derive the similar inference, "**A wealth of linguistic richness exists outside what are called the official languages of India**."

35. (4) There is a clear indication in the question that the sentence is Interrogative; thus the sentences (a) and (c) can be eliminated. In the case of sentence (b), the sentence is not clear enough to represent a meaningful statement. Moreover, it is incomplete and structurally incorrect. However, the sentence (d) is complete and satisfies both the grammar and structure mechanisms. It gives a definite meaning to the sentence following all the necessary considerations given in the question. Hence (d) is the correct choice.

36. (1) Refer to the fifth sentence of the first paragraph "from the political point of view ……off to one side", hence option (a) is the correct choice.

37. (2) Refer to the last few sentences of the second paragraph "I am not a writer, but an inventor", hence option (b) is the correct choice.

38. (3) Refer the first sentence of the second paragraph.

39. (4) Refer "political and domestic……science and utopia…are like two nets" (first paragraph).

40. (1) Refer the second last sentence of the passage. "the certified manager of good writing, of literature, he who guarantees decorative union and thus the fundamental separation of substance and form; in calling himself an inventor ("I am not a writer, but an inventor"), he places himself at the limit of meaning, what we today call Text." Hence option (a) is correct.

41. (2) Refer the third last sentence of the first paragraph "However, the relationship of Desire and Need is not complementary (were they fitted one into the other, every-thing would be perfect), but supplementary: each is the excess of the other."

42. (1) Refer the second sentence of the second paragraph "Descartes, Who, Fourier thought,….use of doubt." Hence option (a) is the correct choice.

43. (2) The first part of the sentence is grammatically correct, pointing towards a true statement. Thus it doesn't require any correction. In the second part of the sentence, the word "discipline" should be replaced by "disciplines" as the phrase "many other" indicates that the noun it signifies should be in plural form. The third part of the sentence is grammatically correct and doesn't require any correction. Hence (b) is the correct option.

44. (2) The word "**flounder**" in the phrase given in bold "**might well flounder on the rock of teaching"** means "be in serious difficulty." Thus among the given three sentences, statements (I) and (III) can be eliminated as they give a vague and inappropriate meaning of the phrase to the sentences. However, only statement (II) provides the exact and the most suitable meaning of the phrase in the context of its usage in the sentence. Hence (b) is the correct choice.

45. (3) In the first part of the sentence, there is a minor error in the use of preposition "in" which should be replace by "from" to make the sentence grammatically correct. In the second part of the sentence, the connector "while" should be replaced by "but also" as the use of "not only" in the first part of the sentence indicates that it should be followed by "but also." However, the third part of the sentence is grammatically correct and doesn't require any correction. Hence (c) is the correct choice.

46. (4) The phrase "**far cry from reality**" implies ***very different from reality*** . Thus among the three given statements, only statements (I) and (III) provide the correct meaning of the phrase without altering the meaning of the actual sentence. The second statement gives a very different meaning to the phrase which is incorrect. Hence (d) is the correct choice.

47.(2)

48.(5)

49.(3)

50.(1)

51-55. In this new pattern Input-Output question only one word and one number is arranged in each step. Let us understand the logic behind it- In each step the words are arranged from the left end while the numbers are arranged from the right end.

For words- words are arranged alphabetical order (English dictionary) from left end with each consonant of word is replaced by its second succeeding letter according to alphabetical series while there will be no change in each vowel of the word and same will be followed in further steps.

For numbers- Numbers are arranged in descending order from right end in such a way that each number is replaced by addition of both the digits of the number .

Input- world 66 tourism 39 destination 43 excellence 25

Step-I: feuvipaviop world tourism 39 43 excellence 25 12

Step-II: ezeennepee feuvipaviop world tourism 39 25 12 7

Step-III: voutiuo ezeennepee feuvipaviop world 25 12 7 12

Step-IV: yotnf voutiuo ezeennepee feuvipaviop 12 7 12 7

51. (4)

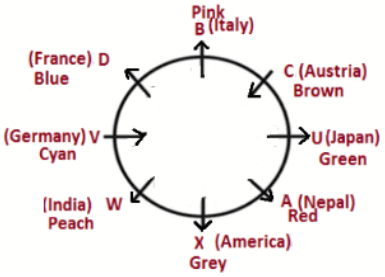
52. (3)

53. (1)

54. (4)

55. (2)

56-60.



56. (4)

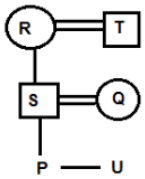
57. (4)

58. (5)

59. (2)

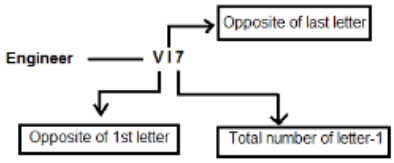
60. (3)

61. (5) From both the statements I and II we can find that T is father of S.



62. (4) By combining both the statements together we cannot find the distance between point P and Q.

63. (3) From statement I or II-Engineer code will be VI7.

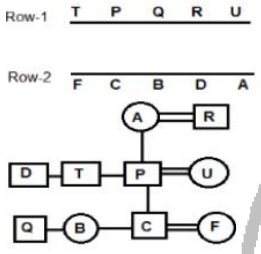


64. (5) From both the statements we can find that D's salary is the highest salary.

D > B (5568) > C > A > E

65. (4) From both the statements we cannot find that how many persons are facing outside to the centre.

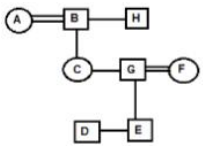
66-70.



66. (2)
67. (4)
68. (5)
69. (3)
70. (3)

71-75.

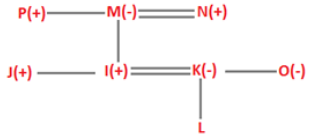
Floors	Family members
8	C
7	G
6	F
5	B
4	E
3	A
2	H
1	D



71. (3)
72. (4)
73. (5)
74. (4)
75. (5)

76-80. From the given conditions, first we try to complete blood-relation tree.

The conditions are like as, L's maternal aunt, L's grandmother eats Banana and L's uncle eats Litchi. K is the wife of I and she has only one child. The person, who goes gym on 6.45 a.m., is a brother of I. O is the sister-in-law of I. L's grandmother has one brother. M's husband's brother-in-law eats Guava. M is the mother of I. N is the father of J, who is the uncle of L. K's father-in-law, eats Apple. From those given conditions we deduce the following blood-relation tree.



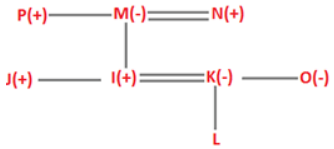
Now, we try to complete floor arrangement by using given conditions. The person, who eats Banana, lives on the fifth floor. L's grandmother eats Banana, hence M eats Banana. The person, who goes gym on 6 a.m., lives on the top floor. The person, who goes on 8.30 p.m., lives on the 7th floor. K's father-in-law eats Apple and lives on the 6th floor, hence N eats Apple. The person, who eats Grapes, lives between K and L's grandmother, hence the person, who eats Grapes lives on 4th floor. The person, who eats Orange, goes gym on 8 p.m. and lives on the 3rd floor. The person, who eats Pineapple, lives on the 1st floor. The person, who eats Litchi, goes gym on 6.45 a.m. and he does not stay on the fifth floor, hence only one floor left for the person, who eats Litchi. The person, who goes gym on 6.45 a.m., is a brother of I: hence the person, who goes gym on 6.45 a.m. is J.

Floor	Person	Time	Fruits
8		6 a.m.	
7		8.30 p.m.	
6	N		Apple
5	M		Banana
4			Grapes
3	K	8 p.m.	Orange
2	J	6.45 a.m.	Litchi
1			Pineapple

Now from the other conditions, L's maternal aunt does not live on the 8th and 1st floor; Hence O does not live on 8th and 1st floor also it is given that O eats Mango, So O lives on 7th floor and eats Mango. M's husband's brother-in-law eats Guava, Hence P eats Guava. I's child and the one, who goes on 8.30 a.m., lives on even-numbered floor, hence only two even floors are left i.e. 4th and 6th floor, so I's child (L) lives on 4th floor and the one, who goes on 8.30 a.m. lives on 6th floor. And only one person I lives on 1st floor.

Floor	Person	Time	Fruits
8	P	6 a.m.	Guava
7	O	8.30 p.m.	Mango
6	N	8.30 a.m.	Apple
5	M		Banana
4	L		Grapes
3	K	8 p.m.	Orange
2	J	6.45 a.m.	Litchi
1	I		Pineapple

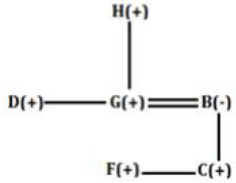
Now, the person, who goes gym on 6.30 a.m., lives on an even-number floor, hence that person, lives on 4th floor. The person, who eats Banana, does not go gym on 7.10 a.m., hence the person, who goes gym on 7.10 a.m. lives on 1st floor. The rest person, who goes gym on 9 p.m., lives on 5th floor. The final arrangement are-



Floor	Person	Time	Fruits
8	P	6 a.m.	Guava
7	O	8.30 p.m.	Mango
6	N	8.30 a.m.	Apple
5	M	9 p.m.	Banana
4	L	6.30 a.m.	Grapes
3	K	8 p.m.	Orange
2	J	6.45 a.m.	Litchi
1	I	7.10 a.m.	Pineapple

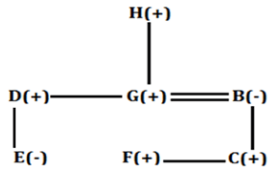
76. (5)
77. (4)
78. (3)
79. (4)
80. (5)

81-85. From the given conditions, G, who is watching Golmaal3, likes Salmaan khan and his wife B, who likes Ajay Devgun, is watching Newton. C, who is son of wife of G, likes Salmaan khan. H, who is the Grandfather of C, likes Tapsee Pannu. F, who is son of G, likes Kareena Kapoor, is watching Judwa2. D, who is brother-in-law of B, likes Ajay Devgun and is watching Golmaal3, and among all family members only two members are there who are watching Golmaal3; hence only D and G is watching Golmaal3.



Family Members	Movies	Actors
D(+)	Golmaal3	Ajay Devgun
E		
H(+)		Tapsee Pannu
G(+)	Golmaal3	Salmaan khan
A		
F(+)	Judwa2	Kareena Kapoor
B(-)	Newton	Ajay Devgun
C(+)		Salmaan khan

Now from the other conditions, the person, who likes Salmaan Khan and the person, who likes Varun Dhawan are not watching the same movie. No female likes Varun Dhawan or Tapsee Pannu. The persons, who like Varun Dhawan and Tapsee Pannu, are not watching Newton, hence the persons, who like both actors, is watching Judwa2. Not more than three of them are watching Newton. The persons who like same actor, are not watching same movie; hence the person, who likes Kareena kapoor, is watching Newton. F likes same actor as E, who likes Kareena kapoor. Rest A likes Varun Dhawan. E is the cousin of C and is not watching Judwa2. Only two are female, so E is female. The final arrangement are-



Family Members	Movies	Actors
D(+)	Golmaal3	Ajay Devgun
E(-)	Newton	Kareena Kapoor
H(+)	Judwa2	Tapsee Pannu
G(+)	Golmaal3	Salmaan khan
A(+)	Judwa2	Varun Dhawan
F(+)	Judwa2	Kareena Kapoor
B(-)	Newton	Ajay Devgun
C(+)	Newton	Salmaan khan

81. (2)
82. (5)
83. (3)
84. (1)
85. (4)

86. (4) In this statement we have to find which statement does not support the given statement.
For I- This statement does not negate the given statement as it states that today India is connected with a digital platform and banking system which will be beneficial for it to improve the economy which is also stated by Jaitley that India has the potential to grow.
For II- This statement negates the given statement as it states that Indian economy is declining continuously in recent past and it will still continue to decline whereas Jaitley's statement describes that India has the potential to grow at a reasonably high level.
For III-This statement also does not negate the given statement as it states about the positive impact that GST brings to the Indian economy.

87. (4) It is clear from the given statement that both statement I and II are the effects of different causes because both of these incidents takes place on different places and causes of both incidents are also different as Statement I is the effect of raid aimed at catching fugitive Gorkha Janmukti Morcha leader in Darjeeling and Statement II is the effect of an encounter against the terrorist group in J&K.

88. (2) For I-This argument holds strong in context to the given statement as the decision of ban taken by the Supreme court will have an adverse effect on people involved in Cracker business because they have already invested a large amount in this business and they have no other means to earn their livelihood.
For II- This argument holds strong in context to the given statement as the decision of ban will help in reducing air pollution which will help in maintaining the level of air pollution.

89. (2) The statement presents the issue of 'not reaching airport in time' as a problem. This means that reaching airport in time is necessary. So, I is not implicit. Besides, it is mentioned that reaching airport in time has become difficult due to large number of potholes in road X. this implies that road X is the only possible way. So II is implicit.

90. (2) In the above question we have to find the statement supports the given statement.
For I-This statement supports the given statement as it states about the efforts China has made to tackle a

diplomatic row between Bangladesh and Myanmar over the flight of the Rohingya.

For II- This statement also supports the given statement as it states about China's concern over the displaced people in the Myanmar-Bangladesh border area.

For III- This statement does not support the given statement as it is not related to the given statement.

91-95. From the given conditions, Chemistry is taught on Thursday. Physics is taught on Monday. Only one lecture is held between Chemistry and Botany. The Botany professor gave lecture immediately after the lecturer Bhaskar. The difference between durations of lectures of the subjects taught on Friday and Sunday is equal to the time taken by the lecturer Bhaskar; Bhaskar does not teach on Friday and Sunday, So Botany is taught on Tuesday. Botany is not taught on the immediate next day on which Zoology is taught. There are two lectures between the lectures of Zoology and Math. Zoology is taught after Math. Statistics is neither taught on Monday nor on Sunday; hence Statistics is taught on Friday and English is taught on Sunday.

Days	Sub.	Lecturer	Hours
Monday	Physics	Bhaskar	
Tuesday	Botany		
Wednesday	Math		
Thursday	Chemistry		
Friday	Statistics		
Saturday	Zoology		
Sunday	English		

Now, Professor who gave Maths lecture is immediately preceded and followed by Manu and Deepak respectively. Neither professor Vansha nor professor Sukant gave his lecture on Sunday. Professor Sukant gave his lecture immediately after Vansha, hence Vansha taught on Friday. Maths is taught for one hour. Subjects Maths & Zoology are taught for same duration. The Professor Bharti gave his lecture on one of the days before Friday. Bharti is not a Chemistry Professor. Rest Vidhi taught on Sunday. Professor, who gave lecture on Sunday spent less than three hours; Hence that professor taught for 1 hour or two hour, but total hour taught by all is 18 hour and only two people taught on same time and 1 hour is also taught by Bharti and Sukant, so the Professor, who gave lecture on Sunday, is taught for 2 hour.

Days	Sub.	Lecturer	Hours
Monday	Physics	Bhaskar	
Tuesday	Botany	Manu	
Wednesday	Math	Bharti	1
Thursday	Chemistry	Deepak	
Friday	Statistics	Vansha	
Saturday	Zoology	Sukant	1
Sunday	English	Vidhi	2

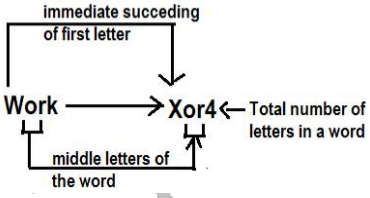
Now from the rest conditions, the lecturer who took maximum time is immediately preceded by the person who took less than one hour of maximum time; hence the professor, who took 5 hour, is just after the professor, who took 4 hour. Lecturer Bhaskar spent more time than Lecturer Manu.

So the final arrangements are-

Days	Sub.	Lecturer	Hours
Monday	Physics	Bhaskar	3
Tuesday	Botany	Manu	2
Wednesday	Math	Bharti	1
Thursday	Chemistry	Deepak	4
Friday	Statistics	Vansha	5
Saturday	Zoology	Sukant	1
Sunday	English	Vidhi	2

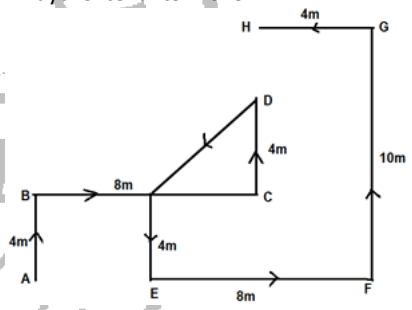
91. (4)
92. (5)
93. (4)
94. (2)
95. (4)

96-98. This is question of Coding-Decoding based on new pattern. In these questions following logic's are applied to decode the code:-



96. (3) None5 Mas4 Farnin7 Xa3
97. (3) Hoo4 Qerfec7 Blway6 Qeopl6
98. (5) Blway6 Ienc5 Ianc5 Xron5

99-100.



99. (5)
100. (3)
101. (3) I. $3x^2 - 28x + 64 = 0$

$3x^2 - 12x - 16x + 64 = 0$

$3x(x - 4) - 16(x - 4) = 0$

$(3x - 16)(x - 4) = 0$

$x = \frac{16}{3}, 4$

II. $5y^2 - 56y + 156 = 0$

$5y^2 - 30y - 26y + 156 = 0$

$5y(y - 6) - 26(y - 6) = 0$

$(5y - 26)(y - 6) = 0$

$y = \frac{26}{5}, 6$

No relation can be established between x & y

102. (2) I. $7x^2 + 87x + 270 = 0$

$7x^2 + 42x + 45x + 270 = 0$

$7x(x + 6) + 45(x + 6) = 0$

$(7x + 45)(x + 6) = 0$

$x = \frac{-45}{7}, -6$

II. $4y^2 + 39y + 90 = 0$

$4y^2 + 24y + 15y + 90 = 0$

$4y(y + 6) + 15(y + 6) = 0$

$(4y + 15)(y + 6) = 0$

$y = \frac{-15}{4}, -6$

$y \geq x$

103. (1) I. $2x^2 + 9\sqrt{3}x + 30 = 0$
$2x^2 + 4\sqrt{3}x + 5\sqrt{3}x + 30 = 0$
$2x(x + 2\sqrt{3}) + 5\sqrt{3}(x + 2\sqrt{3}) = 0$
$(2x + 5\sqrt{3})(x + 2\sqrt{3}) = 0$
$x = \frac{-5\sqrt{3}}{2}, -2\sqrt{3}$
II. $3y^2 + 2\sqrt{2}y - 16 = 0$
$3y^2 - 6\sqrt{2}y - 4\sqrt{2}y - 16 = 0$
$3y(y + 2\sqrt{2}) - 4\sqrt{2}(y + 2\sqrt{2}) = 0$
$(3y - 4\sqrt{2})(y + 2\sqrt{2}) = 0$
$y = \frac{4\sqrt{2}}{3}, -2\sqrt{2}$
$y > x$

104. (4) I. $8x + 5y = 76$
II. $15x + 7y = 133$
On solving (i) & (ii) we get
$x = 7, y = 4$
$\Rightarrow x > y$

105. (5) I. $6x^2 - 53x + 116 = 0$
$6x^2 - 24x - 29x + 116 = 0$
$6x(x - 4) - 29(x - 4) = 0$
$(6x - 29)(x - 4) = 0$
$x = \frac{29}{6}, 4$
II. $9y^2 - 61y + 100 = 0$
$9y^2 - 36y - 25y + 100 = 0$
$9y(y - 4) - 25(y - 4) = 0$
$(9y - 25)(y - 4) = 0$
$y = \frac{25}{9}, 4$
$x \geq y$

106. (1) Let the said number be $10x + y$.
Then, $(10x + y) - (10y + x) = 1.8 \times 10$
or, $9(x - y) = 18$
or, $x - y = 2$

107. (3) Let the time taken to complete the work by Pankaj and Suman be 10x and 7x respectively.
$\therefore \frac{1}{10x} + \frac{1}{7x} = \frac{17}{140}$
$\Rightarrow x = 2$
So, time taken by Pankaj & Suman is 20 days & 14 days respectively.
$\therefore$ time taken by Suman to complete 60% work.
$= 14 \times \frac{60}{100}$
$= 8\frac{2}{5}$ days

108. (5) $\frac{P \times 4 \times 9}{100} - \frac{P \times 2 \times 12}{100} = 360$
$\frac{12P}{100} = 360$
P = 3000 Rs.

109. (1) A: B = 5: 3 = 10: 6
B: C = 2: 3 = 6: 9
A: B: C = 10: 6: 9
Ratio of profit $= (10x \times 12) : (6x \times 12) : (9x \times 6)$
$= 20 : 12 : 9$
Required difference $= \frac{12-9}{41} = 12300$
$= 900$ Rs.

110. (1) Let the manufacturing price is MP
$MP \times \frac{105}{100} \times \frac{110}{100} \times \frac{115}{100} = 5313$
MP = 4000

111. (1) Amount spend by 'A' on food = $84000 \times \frac{24}{100} \times \frac{35}{100} = 7056$
Amount spend by 'B' on food = $84000 \times \frac{19}{100} \times \frac{35}{100} = 5586$
Amount spend by 'C' on food = $84000 \times \frac{17}{100} \times \frac{30}{100} = 4284$
Amount spend by 'D' on food = $84000 \times \frac{25}{100} \times \frac{38}{100} = 7980$
Amount spend by 'E' on food = $84000 \times \frac{15}{100} \times \frac{34}{100} = 4284$
Alternate,
By seeing the chart and graph it can be easily concluded that 'D' spend maximum amount on food.

112. (3) Amount spend by 'E' on furniture = $84000 \times \frac{15}{100} \times \frac{45}{100}$
= 5670
Amount spend by 'D' on transportation = $84000 \times \frac{25}{100} \times \frac{18}{100}$
= 3780
$Required\ \% = \frac{5670 - 3780}{3780} \times 100$
= 50%
Alternately,
Required percentage = $\frac{45 \times 15 - 18 \times 25}{18 \times 25} \times 100 = 50\%$

113. (5) Required average = $\frac{1}{3} \times 84{,}000 \left[\frac{24}{100} \times \frac{20}{100} + \frac{19}{100} \times \frac{40}{100} + \frac{17}{100} \times \frac{25}{100}\right]$
$= \frac{28000}{10000}[480 + 760 + 425]$
= 2.8 (1665) = 4662

114. (4) Required volume = $84000 \times \frac{25}{100} \times \frac{(10-5)}{22} \times \frac{44}{100}$
= 2100

115. (4) Amount spend by A & B on food
$= 84000 \times \left[\frac{24}{100} \times \frac{35}{100} + \frac{19}{100} \times \frac{35}{100}\right]$
= 8.4 [840 + 665]
= 12642
Amount spend by C & D on furniture
$= 84000\left[\frac{17}{100} \times \frac{25}{100} + \frac{25}{100} \times \frac{44}{100}\right]$
= 8.4 [1525]
= 12810
Required ratio = $\frac{12642}{12810} = \frac{301}{305}$
Alternately,
Required ratio = $\frac{35 \times 24 + 35 \times 19}{25 \times 17 + 44 \times 25} = \frac{35 \times 43}{25 \times 61} = \frac{301}{305}$

116. (4) From A)
$4\pi r^2 = 154$
r = 3.5 cm
Area of shaded are can be found
From B) Arc EF, FG, GH and HE make a complete circle having circumference 22 cm
$\Rightarrow 2\pi r = 22$
r = 3.5
$\Rightarrow$ Area of the shaded area can be found.
From C)
Area of triangle BXY = ½ b × h
b = 2r and h = 2r
$\Rightarrow \frac{1}{2} \times 2r \times 2r = 24.5$
$r = 3.5\ cm^2$
Hence, any one of them is sufficient to answer the question.

117. (1) Let, the speed of Bus A and Bus B is 'x' and 'y' respectively.
From A)
$x + y = \frac{360}{3} = 120$
From B)
$D = (x + y)z = \left(x + \frac{y}{2}\right)(z + 1.5) = (2x + y)(z - 0.75)$
Where z is normal time taken by buses to meet in hour and D is the total distance covered by buses
From C)
2x = y
Any two of them are sufficient.

118. (5) **From A**
C.P. of 3 pens = SP of 2 pencil = 6x
C.P. of 3 pencils = SP of 4 pen = 12y
Profit by selling 1 pen & 1 pencil
= 3x + 3y – 2x – 4y = x – y
From B
C.P. of 1 pen = C.P. of 1 pencil = x
S.P. of 2 pens = S.P. of 1 pencil = y
And, y = 1.5x
From C
C.P. of 2 pens – S.P. of 2 pens = S.P. of 1 pencil – C.P. of 1 pencil
By using either B or A and C together question can be solved.

119. (2)

From A

Let Amit's age = A

Satish's age = S

ATQ,

$\frac{A+4}{S+4}=\frac{11}{9}$

S = 8 + V

From B

$\frac{D-2}{S-2}=\frac{1}{3}$

2D = V

From C

A = 8 + S

A = 16 + V

By using either A and B together or B and C together question can be solved.

120. (2)

Let number of 50 paise coin be x and that of 1 Rs coin be y

St. A → $x + y = 2x, x = y$

St. B → $0.5\times0.5x+y=62.5$

St. C → $0.5x+0.8y=65$

So, using any 2 of them we can find the value of x and y

121. (4)

Illiterate male population of city A

$=28{,}000\times\frac{60}{100}\times\frac{7}{15}=7840$

Literate female population of city A

$=28000\times\frac{3}{7}-28{,}000\times\frac{60}{100}\times\frac{8}{15}$

= 12000 – 8960 = 3040

$\text{Required \%}=\frac{7840-3040}{3040}\times100$

$=\frac{4800}{3040}\times100$

$\simeq 158\%$

122. (2)

$\text{Illiterate male in city B}=32{,}000\times\frac{55}{100}\times\frac{6}{11}$

$=9600$

$\text{Illiterate male in city C}=35{,}000\times\frac{35}{100}\times\frac{3}{7}$

$=5250$

$\text{Illiterate male in city E}=33{,}000\times\frac{52}{100}\times\frac{7}{13}$

$=9240$

$\text{Required average}=\frac{9600+5250+9240}{3}$

$=\frac{24090}{3}=8030$

123. (5)

Literate male in city D

$=27000\times\frac{5}{9}-27000\times\frac{2}{3}\times\frac{30}{100}$

= 15,000 – 5,400

= 9,600

Literate female in city B

$=32{,}000\times\frac{3}{8}-32{,}000\times\frac{55}{100}\times\frac{5}{11}$

= 12,000 – 8000

= 4,000

$\text{Required \%}=\frac{9600-4000}{4000}\times100$

$=\frac{5600}{4000}\times100=140\%$

124. (3)

Literate population of city A

$=28{,}000\times\frac{40}{100}=11200$

Literate population of city B

$=32{,}000\times\frac{45}{100}=14400$

Illiterate population of C

$=35{,}000\times\frac{35}{100}=12{,}250$

Illiterate population of D

$=27{,}000\times\frac{30}{100}=8100$

Required difference = 11200 + 14400 – 12250 – 8100

= 5250

125. (2)

Literate female in city A

$=28000\times\frac{3}{7}-28000\times\frac{60}{100}\times\frac{8}{15}$

= 12,000 – 8960

= 3040

Literate female in city C

$=3500\times\frac{3}{7}-35000\times\frac{35}{100}\times\frac{4}{7}$

= 15000 – 7000

= 8000

$\text{Required ratio}=\frac{3040}{8000}=\frac{19}{50}$

126.(2) $\times6-6,\times5-5,\times4-4,\times3-3,\times2-2$

$?=568\times1-1=567$

127.(1) $+(1^3+1^2)+(2^3+2^2)+(3^3+3^3)+(4^3+4^2)\ldots..$

$?=133+5^3+5^2=283$

128.(4) $\times1.5,\times2,\times2.5,\times3\ldots..$

$?=12\times2.5=30$

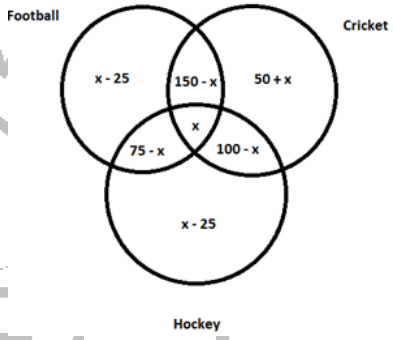
129.(1) $+7,+9,+11,+13\ldots..$

$?=33+11=44$

130.(2) $1^3,2^2,3^3,4^2,5^3\ldots..$

$?=5^3=125$

131. (4)



Let the number of students who play all the three games be x.

Number of students who play football and cricket but not hockey = 150 – x

Number of students who play cricket and hockey but not football = 100 – x

Number of students who play hockey and football but not cricket = 75 – x

Number of students who play only football = 200 – (150 – x + x + 75 – x) = x – 25

Number of students who play only cricket = 300 – (150 – x + x + 100 – x) = x + 50

Number of students who play only hockey = 150 – (100 – x + x + 75 – x) = x – 25

Since the number of students cannot be negative, maximum possible value of x can be 75.

Maximum number of students who play all the three games = 75

132. (2) Since the number of students cannot be negative, minimum possible value of x can be 25.

Minimum number of students who play only cricket = x + 50 = 25 + 50 = 75

133. (3) Number of students who play either only cricket or only hockey = 135

$\Rightarrow$ x + 50 + x – 25 = 135

$\Rightarrow$ 2x + 25 = 135

$\Rightarrow$ x = 55

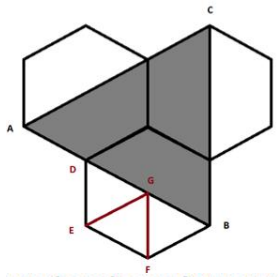
Number of students who play both football and cricket but not hockey = 150 – x

= 150 – 55 = 95

134. (3) Ratio of distance covered by second train to that of first train = 1.2 : 1
= 6 : 5
Since time is same,
Ratio of their speeds is also 6 : 5
Speed of second train = 50 × 6/5 = 60 km/h
Distance covered by first train in one hour = 50 km
Let, the third train takes 't' hours to overtake the first train
And speed of third train be x km/hr.
Then,
$\frac{50}{x-50} = t$ .....(i)
Distance covered by second train in one hour = 60 km
$\frac{60}{x-60} = t + 2$ .....(ii)
Solving (i) and (ii)
x = 75 km/h
t = 2 hours

135. (2) If the speed of the first train is 50 km/h, then the speed of third train will be 75 km/h and it takes 4 hours to cross the second train.
Distance covered by third train = 75 × 4
= 300 km

136. (5) Quantity I:



G is the midpoint of BD. Join GE and GF.
Since the hexagons are regular,
$\therefore \angle EGF = \frac{360°}{6} = 60°$
And, E and F are equidistant from G.
$\Rightarrow GE = GF$
$\Rightarrow \angle GEF = \angle GFE = \frac{180° - 60°}{2} = 60°$
$\therefore \Delta EFG$ is an equilateral triangle.
Similarly ΔDEG and ΔFBG are also equilateral triangles.
So, DG = GB = DE = 4 cm
AB = AD + DG + GB = 4 + 4 + 4 = 12 cm
Similarly, BC = CA = 12 cm
$\therefore \Delta ABC$ is an equilateral triangle.
Area of shaded region = Area of ΔABC
$= \frac{\sqrt{3}}{4} AB^2$
$= \frac{\sqrt{3}}{4} \times 12^2$
$= 36\sqrt{3}$ cm²
Quantity I = Quantity II

137. (4) Quantity I:
Length of train B = Half of length of train A = 200 m
Speed of train B = One-third of length of train A = 18 km/h
Since we don't know the direction of movement of train B with respect to train A,
Relative Speed = (54 + 18) or (54 – 18) km/h
= 72 or 36 km/h
Time taken by train A to cross train B = $\frac{\text{Sum of lengths of both trains}}{\text{Relative Speed of both trains}}$
$= \frac{400+200}{72 \times \frac{5}{18}}$ or $\frac{400+200}{36 \times \frac{5}{18}}$
= 30 or 60 sec
Quantity II:
Length of platform = 25% more than length of train A = 500 m
Time taken by train A to cross the platform = $\frac{\text{Sum of lengths of train A and platform}}{\text{Speed of train A}}$
$= \frac{400+500}{54 \times \frac{5}{18}}$
= 60 sec
Quantity II ≥ Quantity I

138. (1) Quantity I:
Let the capacities of vessels A, B and C be 2x, 3x and 5x liters respectively.
Vessel A is filled with milk and content of vessel A is poured into vessel B
Quantity of milk in vessel B = Capacity of vessel A = 2x liters
Vessel B is filled with water
Quantity of water added in vessel B = Capacity of vessel B – Capacity of vessel A
= 3x – 2x = x liters
Content of vessel B is poured into vessel C
Quantity of milk added in vessel C = Capacity of vessel C – Capacity of vessel B
= 5x – 3x = 2x liters
Final Content of Vessels C:
Water = x liters
Milk = 2x + 2x = 4x liters
According to the question,
Quantity of milk in vessel C = 45 + Quantity of water in vessel C
$\Rightarrow$ 4x = 45 + x
$\Rightarrow$ 3x = 45
$\Rightarrow$ x = 15
Capacity of vessel C = 5x = 75 liters
Quantity I > Quantity II

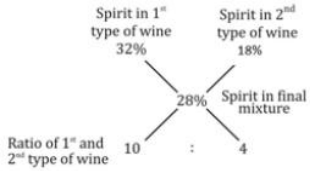
139. (2) Let the per day efficiencies of a man and a woman be M and W units respectively
50% of the work = 25 days' work of 4 men and 6 women
= 25 × (4 × M + 6 × W) = 100M + 150W units
$\Rightarrow$ Total work = 200M + 300W units .....(i)
One woman was replaced by one man,
50% of the work = 24 days' work of 5 men and 5 women
= 24 × (5 × M + 5 × W) = 120M + 120W units
$\Rightarrow$ Total Work = 240M + 240W units .....(ii)
From equations (i) and (ii),
200M + 300W = 240M + 240W
$\Rightarrow$ 60W = 40M
$\Rightarrow$ 3W = 2M
$\Rightarrow W = \frac{2M}{3}$
Total Work = $200M + 300 \times \frac{2M}{3} = 400M$
Quantity I:
Time taken by 10 men to complete the work
$= \frac{400M}{10M} = 40$ days
Quantity II:
Time taken by 12 women to complete the work
$= \frac{400M}{12 \times \frac{2M}{3}} = \frac{400M}{8M} = 50$ days
Quantity II > Quantity I

140. (2) Quantity I:

Probability of either Virat or Rohit hitting century in a match against New Zealand
$= 0.2 \times 0.85 + 0.8 \times 0.15$
$= 0.17 + 0.12$
$= 0.29$
Quantity II:
Probability of at least one of Virat and Rohit hitting a century in a match against Australia
$= 0.25 \times 0.8 + 0.75 \times 0.2 + 0.25 \times 0.2$
$= 0.2 + 0.15 + 0.05$
$= 0.4$
Quantity II > Quantity I

141. (2) Let, the capacity of tank = 180 ℓ
'A' one minutes work $= \frac{180}{30} = 6$
'B' one minute work $= \frac{180}{36} = 5$
Problem occur after 'x' minutes, due to this
New efficiency of 'A' $= 6 \times \frac{5}{6} = 5$
New efficiency of 'B' $= 5 \times \frac{9}{10} = 4.5$
ATQ,
$9.5x + 11\left[\frac{33}{2} - x\right] = 180$
$181.5 - 180 = 1.5x$
$x = \frac{1.5}{1.5} = 1$ minutes

142. (3)



Hence the part of wine taken out
$= \frac{2}{5+2} = \frac{2}{7}$

143. (3) Let total distance from A to B = 'D'
ATQ, Satish cover 20% distance in 6.5 hours So, he can cover 30% distance (M to mid-point of A and B) in $\frac{6.5}{2} \times 3 = 9.75\text{hr}.$
Time taken by Satish to come back from mid-point to M
= 29.25 – 9.75 = 19.5 hr
30% distance covered by Satish in 19.5 hr.
100% distance covered by Satish in $\frac{19.5}{3} \times 10 = 65\text{hr}$

144. (1) Let total work = 100
'A + B + C' 3 days work = 37
'A and B' 7 day work = 63
'A + B' 1 day work = 9
'A + B' 3 day work = 27
'C' 3 day work = 37 – 27 = 10
'C' will do complete work
$= \frac{100 \times 3}{10} = 30$ days
Now,
A × 5 = B × 4
$\frac{A}{B} = \frac{4}{5}$
A and B one day work = 9
⇒ 'A' one day work = 4
'B' one day work = 5
A can complete work in $\frac{100}{4} = 25$ days
B can complete work in $\frac{100}{5} = 20$ days

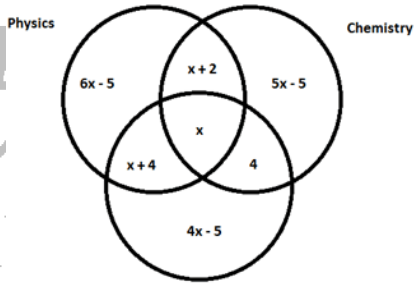
145. (1) Let speed of train A = x km/hr
Let sped of train B = y km/hr
Meeting time = 10 hr.
Relative speed $= \frac{650}{10}$
$= 65\text{ km/hr} = x + y$

Let train A started after 4 hr 20 min.
In 8 hr distance covered by train A and
train B = 65 × 8 = 520 km
⇒ Train B covers 650 – 520 = 130 km in 4 hr 20 min
⇒ Speed of train B $= \frac{130}{4\frac{1}{3}}$
$= 30\text{ km/hr}$
And, speed of train A = 65 – 30 = 35 km/hr

146. (1) Let A and B take x and 3x days respectively to complete the job.
According to the question,
3x – x = 80
⇒ x = 40
A takes 40 days and B takes 120 days to complete the job working alone.
Let C takes y days to complete the job working alone.
Then,
$15\left(\frac{1}{120} + \frac{1}{y}\right) = 1 - \frac{5}{8}$
⇒ y = 60
Let D takes z days to complete the job working alone.
$10\left(\frac{1}{40} + \frac{1}{z}\right) = 1 - \frac{5}{12}$
⇒ z = 30
One day's work of A, B, C and D working together
$= \frac{1}{40} + \frac{1}{120} + \frac{1}{60} + \frac{1}{30} = \frac{3+1+2+4}{120} = \frac{10}{120} = \frac{1}{12}$
Therefore A, B, C and D working together will complete the work in 12 days.

147. (2) Part of work done by A and B in one day $= \frac{1}{40} + \frac{1}{120} = \frac{4}{120} = \frac{1}{30}$
Part of work done by B and C in one day $= \frac{1}{120} + \frac{1}{60} = \frac{3}{120} = \frac{1}{40}$
Part of work done by C and D in one day $= \frac{1}{60} + \frac{1}{30} = \frac{3}{60} = \frac{1}{20}$
Part of work done by D and A in one day $= \frac{1}{30} + \frac{1}{40} = \frac{7}{120}$
Part of work done in four days $= \frac{1}{30} + \frac{1}{40} + \frac{1}{20} + \frac{7}{120} = \frac{4+3+6+7}{120} = \frac{20}{120} = \frac{1}{6}$
Hence, the work is completed in 4 × 6= 24 days

148. (4)



Number of students who study Physics and Chemistry but not Biology = 2x + 2 – x = x + 2
Number of students who study Chemistry and Biology but not Physics = x + 4 – x = 4
Number of students who study Biology and Physics but not Chemistry = 2x + 4 – x = x + 4
Number of students who study only Physics = 9x + 1 – (x + 2 + x + x + 4) = 6x – 5
Number of students who study only Chemistry = 7x + 1 – (x + 2 + x + 4) = 5x – 5
Number of students who study only Biology = 6x + 3 – (4 + x + x + 4) = 4x – 5
Since the number of students cannot be negative,
4x – 5 ≥ 0
⇒ $x \geq \frac{5}{4}$

Since the number of student is an integer, the minimum possible value of x will be 2.
Hence, minimum number of students who study all the three subjects = 2

149. (2) According to the question,
Number of students studying only Physics ≤ 31
$\Rightarrow 6x - 5 \leq 31$
$\Rightarrow x \leq 6$
Maximum possible value of x will be 6.
Maximum number of students who study exactly two subjects
$= x + 2 + 4 + x + 4 = 2x + 10 = 2 \times 6 + 10 = 12 + 10 = 22$

150. (3) According to the question,
Total number of students who study either only Physics or only Chemistry = 45
$\Rightarrow 6x - 5 + 5x - 5 = 45$
$\Rightarrow 11x - 10 = 45$
$\Rightarrow x = 5$
Number of students who study both Physics and Biology but not Chemistry
$= x + 4 = 5 + 4 = 9$