



Your Personal Exams Guide



NDA



CDS



SSC CGL



CBSE UGC NET



IAS



SSC CHSL



CTET



MPSC



AFCAT



CSIR UDC NET



IBPS PO



UP POLICE



SSC MTS



SBI PO



BPSC



UP TET



IBPS RRB



IBPS CLERK



IES



UPSC CAPF



SSC Stenogr..



RRB NTPC



SSC GD



RBI GRADE B



RBI Assistant



DSSSB

AP Police SI 2016 Prelims Previous Year Paper (Mental Ability)

Total Time: 3 Hour

Total Marks: 100

Instructions

Sl No.	Section Name	No. of Question	Maximum Marks	Negative Marks	Positive Marks
1	Full Test	100	100	0	1

- 1.) A total of 180 minutes is allotted for the examination.
- 2.) The server will set your clock for you. In the top right corner of your screen, a countdown timer will display the remaining time for you to complete the exam. Once the timer reaches zero, the examination will end automatically. The paper need not be submitted when your timer reaches zero.
- 3.) There will, however, be sectional timing for this exam. You will have to complete each section within the specified time limit. Before moving on to the next section, you must complete the current one within the time limits.

Your Personal Exams Guide

Full Test

1. A company of 7300 soldiers is formed of 4 battalions so that $\frac{1}{2}$ of the first, $\frac{2}{3}$ of the second, $\frac{3}{4}$ of the third and $\frac{4}{5}$ of the fourth are all composed of the same number. The difference in the number of soldiers between the battalions with maximum and minimum number is **(+1)**
- a. 700
 - b. 800
 - c. 900
 - d. 1000
-
2. A bag consists of one rupee, 50 paise and 5 paise coins in the ratio 3 : 5 : 7. If their total value sum to Rs. 23.40, then the number of 50 paise coins in that bag is **(+1)**
- a. 10
 - b. 14
 - c. 16
 - d. 20
-
3. 1320 books of the same variety are divided among 7 men, 11 women, and 5 boys such that each woman gets 3 times as many as a boy and a man gets as many as a woman and a boy together. Then one Woman's share of books is **(+1)**
- a. 80
 - b. 75

c. 60

d. 55

-
4. If a sum of Rs. 1,540 is divided among A, B, C so that A shall receive $\frac{2}{9}$ of what B and C receive together and B receives $\frac{3}{11}$ of what A and C receive together, then C's share (in Rs.) is (+1)

a. 930

b. 820

c. 740

d. 580

-
5. A person covered one-third of his journey at 25 km/hr, one-fourth of his journey at 30 km/hr and the rest at 50 km/hr. His average speed for the entire journey (in km/hr) is (+1)

a. $28\frac{1}{2}$

b. $31\frac{1}{4}$

c. $32\frac{2}{3}$

d. $33\frac{1}{3}$

-
6. The average age of A, B and C is 84 years. If D joins them, then the average age of that group is 80 years. If another man E, who is 3 years older than D replaces A, then the average age of B, C, D, E becomes 79 years. Then the age of A (in years) is (+1)

- a. 77
 - b. 76
 - c. 75
 - d. 74
-

7. The average of the first 15 multiples of 5 is (+1)

- a. 5
 - b. 25
 - c. 37.5
 - d. 40
-

8. The average weight of students in four classes A, B, C, D is 60 kg. The average weight of students of the respective classes A, B, C and D are 45 kg, 50 kg, 72 kg and 80 kg. If the average weight of the students of class A and B together is 48 kg and that of class B and C together is 60 kg, the ratio of the number of students in class A and class D is (+1)

- a. 2 : 3
 - b. 4 : 3
 - c. 3 : 2
 - d. 3 : 5
-

9. The production in a factory got decreased by 25% due to a reduction in the workforce. To restore the original production, the working hours should be (+1)

increased by a percent

- a. 25%
- b. $33\frac{1}{3}\%$
- c. $67\frac{2}{3}\%$
- d. 75%

10. Anil sells his goods 25% cheaper than Sunil and 25% dearer than Akil. Then Akil's goods are cheaper than Sunil's by the percentage (+1)

- a. 25
- b. 30
- c. $33\frac{1}{3}$
- d. 40

11. $1 \div \frac{3}{7}$ of $(6 + 8 \times \overline{3 - 2}) \left[\frac{1}{5} \div \frac{7}{25} - \left\{ \frac{3}{7} + \frac{8}{14} \right\} \right] =$ (+1)

- a. $\frac{-7}{12}$
- b. $\frac{-4}{45}$
- c. $\frac{3}{70}$
- d. $\frac{5}{49}$

12. The number of zeros occurring at the end of the product $12 \times 18 \times 15 \times 40 \times 25 \times 16 \times 55 \times 105$ is (+1)

- a. 5

b. 6

c. 8

d. 10

13. The value of $\left[1 - \left\{1 - \left[(1 - (1/10))^3\right]^{-1}\right\}\right]^{\frac{1}{3}}$ when $x = 0.1$, is (+1)

a. $10 / 9$

b. $10 / 11$

c. $9 / 10$

d. $9 / 11$

14. The sum of all odd numbers from 20 to 102 is (+1)

a. 1576

b. 1676

c. 2501

d. 2601

15. When a certain number is divided by 223, the remainder obtained is 79. When that number is divided by 179, the quotient is 315 and remainder is R. Then R = (+1)

a. 106

b. 109

c. 113

d. 118

16. How many numbers between 100 and 300 are divisible by 13? (+1)

a. 16

b. 15

c. 14

d. 13

17. If the sum of five consecutive even numbers is 130, then the L.C.M of the largest and the smallest of those numbers is (+1)

a. 240

b. 280

c. 330

d. 660

18. If the difference between the simple interest and the compound interest for 2 years at 5% per annum on a certain sum is equal to Rs. 50, then that sum of money (in Rs.) is (+1)

a. 16,400

b. 17,800

c. 18,600

d. 20,000

19. The compound interest on a certain sum of money at 5% per annum for 2 years is Rs. 246. The simple interest on the same sum for 3 years at 6% per annum (in Rs.), is **(+1)**
- a. 364
 - b. 384
 - c. 432
 - d. 436
20. If a sum of Rs. 3,903 is shared between A and B so that A's share at the end of 7 years is equal to B's share at the end of 9 years at 4% compound interest per annum, then B's share (in Rs.) is **(+1)**
- a. 2,188
 - b. 2,028
 - c. 1,976
 - d. 1,875
21. If a sum of money amounts to Rs. 2,240 at 4% per annum simple interest in 3 years, the simple interest on the same sum for 6 months at $3\frac{1}{2}\%$ per annum (in Rs.) is **(+1)**
- a. 80
 - b. 65
 - c. 45

d. 35

22. If an amount of money grows upto Rs. 4,840 in 2 years and upto Rs. 5,324 in 3 years on compound interest, then the rate percent per annum is (+1)

a. 10%

b. 9%

c. 8%

d. 6%

23. Two equal sums were lent out at 7% and 5% simple interest respectively. If the interest earned on the two loans add upto Rs. 960 for 4 years, then total sum lent out (in Rs.) is (+1)

a. 2,000

b. 2,500

c. 3,000

d. 4,000

24. The ratio between the number of first and second class passengers travelling between two railway stations is 1 : 50. The ratio of first and second class fares between the same stations is 3 : 1. If Rs. 13,250 were collected on a day from the passengers between these stations, then the amount collected from second class passengers (in Rs.) is (+1)

a. 12,500

b. 11,800

c. 11,500

d. 10,600

-
25. The savings of A and B are in the ratio 4 : 5. They bought a gift for their friend sharing the cost in the ratio 3 : 4. If A spent two-third of his savings for this gift and B is left with Rs. 145 after this purchase, then the value of that gift (in Rs.) is (+1)

a. 105

b. 140

c. 160

d. 175

-
26. B takes three times as long as A and C together and C takes twice as long as A and B together to do a certain job. The three men working together can complete that work in 8 days. Then A alone can finish that work in (+1)

a. $20\frac{1}{3}$ days

b. $19\frac{1}{5}$ days

c. $18\frac{2}{3}$ days

d. $18\frac{3}{5}$ days

-
27. A group of men can complete a work in 60 days. If 8 more men join that group, that work could be finished 15 days earlier. The number of men originally in that group is (+1)

- a. 20
- b. 22
- c. 24
- d. 25

28. Working separately A and B can finish a work in 8 and 12 days respectively. If A starts the work and they work on alternate days, one on each day, then the work will be completed by them in (+1)

- a. $8\frac{1}{4}$ days
- b. $9\frac{1}{2}$ days
- c. 10 days
- d. $10\frac{1}{4}$ days

29. A can do a work in 8 days and B can do it 6 days. They have undertaken to do that work together for Rs. 1,800. But if they complete that work in 3 days by taking the help of C, then C's share of amount (in Rs.) is (+1)

- a. 325
- b. 275
- c. 250
- d. 225

30. 2 men and 1 woman can complete a work in 14 days, while 4 women and 2 men can do the same work in 8 days. If a man gets Rs. 240 per day, the wage (in Rs.) (+1)

per day of a woman is

- a. 148
- b. 160
- c. 172
- d. 180

31. A, B and C get Rs. 7,200 for doing a work in 24 days. A and C get Rs. 1,880 for doing the same work in 10 days while B and C get Rs. 3,600 for doing that work in 24 days. Then the ratio of the amounts that A, B, C receive per day is **(+1)**

- a. 75 : 56 : 19
- b. 65 : 56 : 29
- c. 75 : 36 : 39
- d. 65 : 46 : 39

32. Two trains with different speed and having lengths 120 mts and 96 mts respectively run on parallel lines of rails. If they run in the same direction, the faster train passes the slower one in 18 seconds. If they are running in opposite directions with the same speed as earlier, they pass each other in 12 seconds. Then the speed of the faster train (in km/hr) is **(+1)**

- a. 50
- b. 54
- c. 60
- d. 64

33. A person travels 120 km by steamer, 450 km by rail and 60 km by taxi in a journey. The speed of the train is thrice that of the taxi and $1\frac{1}{2}$ times that of the steamer. If the time taken for his entire journey is 18 hours, then the speed of the train (in km/hr) is (+1)

- a. 60
- b. 50
- c. 45
- d. 42

34. The distance between two cities A and B is 510 km. A train T_1 leaves A towards B at 2:45 pm with a speed of 50 km/hr. It meets the train T_2 which leaves B at 1:35 pm and moving at a speed of 60 km/hr towards A. The distance (in km) travelled by T_1 by the time it met T_2 is (+1)

- a. 185
- b. 192
- c. 200
- d. 210

35. A boy walking at a speed of 5 km/hr from home, reaches his school 20 minutes late. Next day he increases his speed by 1 km/hr and he is late by 5 minutes. Then the distance between his home and school (in km) is (+1)

- a. 8
- b. $7\frac{1}{2}$

c. 7

d. $6\frac{1}{2}$

36. The hour hand and the minute hand in a clock are at right angles for the first time after 3 O' clock at (+1)

a. 3 hrs $24\frac{2}{11}$ min

b. 3 hrs $26\frac{2}{11}$ min

c. 3 hrs $28\frac{6}{11}$ min

d. 3 hrs $32\frac{8}{11}$ min

37. The time between 3 O' clock and 4 O' clock, when the minute hand is 4 minute spaces ahead of the hour hand, is (+1)

a. 22 min. past 3

b. $21\frac{7}{11}$ min.past 3

c. $20\frac{8}{11}$ min.past 3

d. $20\frac{2}{11}$ min.past 3

38. If the two hands of a clock coincide (are together) for every 64 minutes, then the time gained by it in a day is (+1)

a. 35 min.

b. $34\frac{2}{11}$ min.

c. $32\frac{8}{11}$ min.

d. $31\frac{7}{11}$ min.

39. The day of the week on 10th June 2002 was (+1)

- a. Monday
 - b. Tuesday
 - c. Saturday
 - d. Sunday
-

40. The last day of any century can be (+1)

- a. Tuesday
 - b. Thursday
 - c. Monday
 - d. Saturday
-

41. If 5th March 1999 was Friday, then on 27th March 2000, the day of the week fell on (+1)

- a. Tuesday
 - b. Saturday
 - c. Sunday
 - d. Monday
-

42. In one kg mixture of sand and cement, 20% is cement. The amount of sand that should be added to the mixture so that the proportion of cement becomes $8\frac{1}{3}\%$ is (+1)
- a. 1.2 kg
 - b. 1.25 kg
 - c. 1.4 kg
 - d. 1.64 kg
-
43. The population of a town was reduced by 12% in the year 2008. If it was increased by 15% in 2009, the effect of increase/decrease percent on the population at the beginning of the year 2010 is (+1)
- a. increase by 3%
 - b. decrease by 3%
 - c. decrease by 1.5%
 - d. increase by 1.2%
-
44. A person spends 75% of his monthly income. If his income increases by 20% and his expenditure also increases by 8%, the percentage increase in his savings is (+1)
- a. 52
 - b. 56
 - c. 60
 - d. 64

45. A person sells his table at $12\frac{1}{2}\%$ profit and his chair at $8\frac{1}{3}\%$ loss and gains Rs. 25 on the whole. But if he sells the table at $8\frac{1}{3}\%$ loss and the chair at $12\frac{1}{2}\%$ profit, then he neither gains nor loses. Then the cost price of the table (in Rs.) is (+1)
- a. 360
 - b. 340
 - c. 320
 - d. 300
46. The market price of a shirt is Rs. 480. If the shop keeper allows a 10% discount, then he gains 8%. If no discount is allowed, then his gain percent is (+1)
- a. 18
 - b. 20
 - c. 22
 - d. 24
47. Amala purchased goods worth Rs. 450. She sold one-third of them at a loss of 10%. To gain 20% on the whole transaction, she should sell the remainder at a gain percent of (+1)
- a. 30%
 - b. 35 %
 - c. 40 %
 - d. 45 %

48. A trader sells a transistor at 15% above its cost price. Had he bought it at 5% more than what he paid for it and sold it for Rs. 6 more, he would have gained 10%. The cost price of that transistor (in Rs.) is (+1)

- a. 1,200
- b. 1000
- c. 900
- d. 800

49. A trader allows a discount of 10% on a calculator. In order to gain 20% on selling it at this discount, the percentage of increase on its cost price that has to be marked, is (+1)

- a. 10%
- b. 30%
- c. $33\frac{1}{3}\%$
- d. 34%

50. A and B can do a piece of work in 12 days, B and C can do it in 10 days, C and A in 15 days. The time taken in days for A alone to complete that work is (+1)

- a. 40
- b. 36
- c. 34
- d. 28

51. In question, four entries have been given, out of which three are alike in same manner and the fourth one is different. Choose that different entry as your answer. (+1)

- a. Deer
- b. Zebra
- c. Hyena
- d. Giraffe

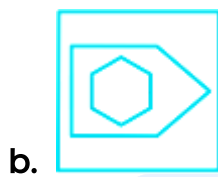
52. In question, four entries have been given, out of which three are alike in same manner and the fourth one is different. Choose that different entry as your answer. (+1)

- a. 13
- b. 23
- c. 37
- d. 71

53. In question, four entries have been given, out of which three are alike in same manner and the fourth one is different. Choose that different entry as your answer. (+1)

- a. Dolphin
- b. Zebra
- c. Lioness
- d. Crocodile

54. In question, you are given a set of four figures (1), (2), (3), (4) out of which all except one are alike in same manner. You have to select the dissimilar figure in the given set and choose its number as your correct answer in the options (1) to (4) given (+1)



55. In question, you are given a set of four figures (1), (2), (3), (4) out of which all except one are alike in same manner. You have to select the dissimilar figure in the given set and choose its number as your correct answer in the options (1) to (4) given (+1)





56. A and B entered into partnership investing Rs. 16,000 and Rs. 12,000 respectively. After 3 months A withdrew Rs. 5,000 while B added Rs. 5,000 to his capital. After 3 more months C joined them with a capital of Rs. 21,000. At the end of the year if they gained Rs. 26,400, then B's share of profit exceeds A's share by (+1)
- a. Rs. 2,400
- b. Rs. 2,800
- c. Rs. 3,200
- d. Rs. 3,400

57. A and B invested Rs. 30,000 and Rs. 40,000 respectively in a business. A receives Rs. 100 per month out of the Profit towards running the business and the rest of the profit is divided in proportion to their investments. If in a year's time A receives a total of Rs. 3,900, then B receives Rs. (+1)
- a. 3,600
- b. 3,800

c. 4,000

d. 4,400

58. A, B and C entered into a partnership in a business. A got $\frac{2}{5}$ of the profit, while B and C distributed the remaining profit equally. If C got Rs. 4,000 less than A, then their total profit (in Rs.) was (+1)

a. 34,000

b. 36,000

c. 38,000

d. 40,000

59. A, B and C became partners in a business with respective investments in the ratio 5 : 7 : 6. Next year they increased their investments by 26%, 20% and 15% respectively. If their profit at the end of second year is Rs. 21,600, the difference between the highest and lowest share of profit (in Rs.) is (+1)

a. 2,100

b. 2,250

c. 2,360

d. 2,440

60. Three sides of a cuboid are 18, 37.5 and 40 cm. If there is a cube whose volume is the same as this cuboid, then the length of the diagonal of that cube (in cm), correct to the nearest integer is (+1)

- a. 48
- b. 50
- c. 52
- d. 54

61. The number of cylindrical candles each of diameter 4.2 cm and height 2.8 cm that can be prepared from a rectangular cuboid shaped wax solid with dimensions 66 cm, 42 cm and 21 cm, is (+1)

- a. 1400
- b. 1440
- c. 1480
- d. 1500

62. The external dimensions of a closed wooden box are 18 cm, 10 cm, and 6 cm and the thickness of the wood is 5 mm. If one c.c of wood weights 0.8 gms, then the weight of that box (in gms) is (+1)

- a. 394
- b. 324
- c. 252
- d. 242

63. A solid toy is in the form of a right circular cylinder with hemispherical shape at the bottom and cone at the top. Their common diameter is 4.2 cm and the (+1)

height of the cylindrical and conical portions are 12 cm and 7 cm respectively.
The approximate volume of that solid toy (in cm^3) is

- a. 218
- b. 248
- c. 276
- d. 292

64. The radius of a conical tent is 7 meters and its height is 10 meters. In making the tent, if canvas cloth of width 2 meter is used, the length of that canvas needed (in meters) is nearly (+1)

- a. 138.4
- b. 134.2
- c. 132.8
- d. 130.6

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65. If a cylinder, a cone and a sphere have the same radius and equal height, then the ratio of their respective curved surface areas is (+1)

- a. $3 : \sqrt{5} : 4$
- b. $4 : \sqrt{5} : 4$
- c. $2 : \sqrt{3} : 2$
- d. $5 : \sqrt{3} : 4$

66. In question, there is a definite relation between the first two entries. The same kind of relation exists between the third and fourth entries. Choose the correct one among the given four options and answer the questions

(+1)

Barrel : Vial :: _____ : _____

- a. Shovel : hoe
- b. Key : door
- c. Volume : Monograph
- d. Honey : Milk

67. In question, there is a definite relation between the first two entries. The same kind of relation exists between the third and fourth entries. Choose the correct one among the given four options and answer the questions

(+1)

Fewer : _____ :: Countable : Uncountable

- a. imaginary
- b. total
- c. less
- d. sum

68. In question, there is a definite relation between the first two entries. The same kind of relation exists between the third and fourth entries. Choose the correct one among the given four options and answer the questions

(+1)

FORAGE : SEARCH :: _____ : CONFUSE

- a. HAUNT

71. In question, there is a definite relation between the first two entries. The same kind of relation exists between the third and fourth entries. Choose the correct one among the given four options and answer the questions

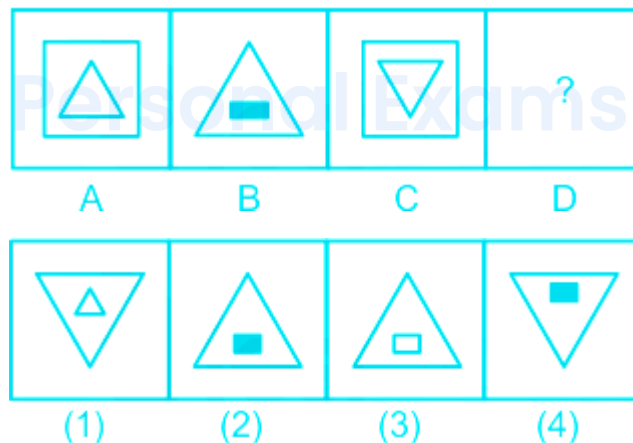
(+1)

0 : _____ :: Celsius : Kelvin

- a. 32
- b. 180
- c. 212
- d. 273

72. In question consists of two sets of figures. Figures A, B, C, D constitute the problem set, while (1), (2), (3) and (4) constitute the answer set. There is a definite relationship between figures A and B. Establish a similar relationship between figures C and D by selecting a suitable figure from Answer set that would replace the question mark (?) in figure D.

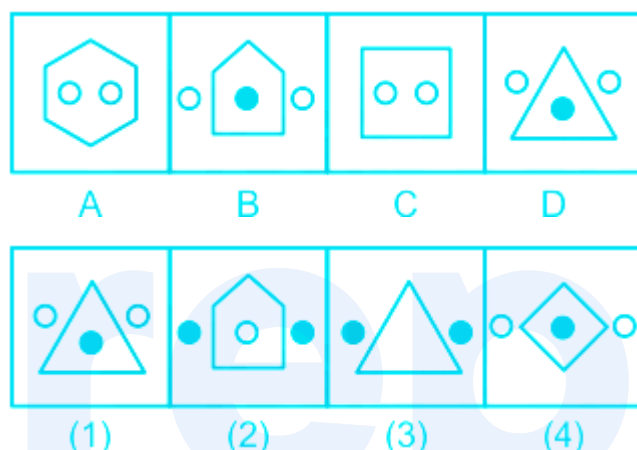
(+1)



- a. 1
- b. 2
- c. 3

d. 4

73. In question consists of two sets of figures. Figures A, B, C, D constitute the problem set, while (1), (2), (3) and (4) constitute the answer set. There is a definite relationship between figures A and B. Establish a similar relationship between figures C and D by selecting a suitable figure from Answer set that would replace the question mark (?) in figure D. (+1)



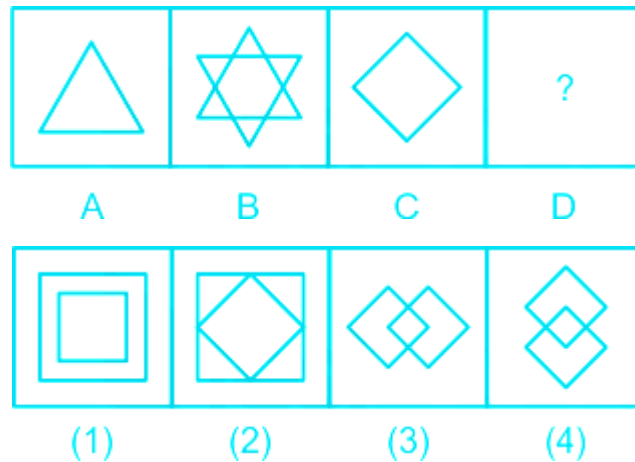
a. 1

b. 2

c. 3

d. 4

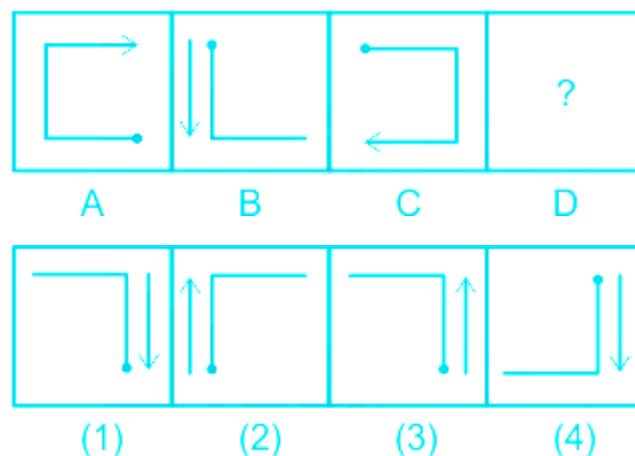
74. In question consists of two sets of figures. Figures A, B, C, D constitute the problem set, while (1), (2), (3) and (4) constitute the answer set. There is a definite relationship between figures A and B. Establish a similar relationship between figures C and D by selecting a suitable figure from Answer set that would replace the question mark (?) in figure D. (+1)



- a. 1
- b. 2
- c. 3
- d. 4

75. In question consists of two sets of figures. Figures A, B, C, D constitute the problem set, while (1), (2), (3) and (4) constitute the answer set. There is a definite relationship between figures A and B. Establish a similar relationship between figures C and D by selecting a suitable figure from Answer set that would replace the question mark (?) in figure D.

(+1)



- a. 1

b. 2

c. 3

d. 4

76. Direction:

(+1)

Following are the eligibility criteria for becoming member of an exclusive club:

(i) The applicant's annual income should be atleast Rs. 5 lakhs. He should be able to pay one- time membership fees of Rs. One lakh

(ii) The conditions given in (i) are both relaxed upto 50% for former defence personnel

(iii) For the children of existing members, the criterion of annual income is reduced to Rs. 3 lakhs and one time membership fees to Rs. 70,000.

(iv) Judges working in courts presently are offered free membership and the stipulation of annual income is waived.

(v) Irrespective of annual income, a national level sport personnal is eligible to be a member by paying Rs. 20,000 as membership fees.

In each question, information about an individual is given. Based on that, you have to decide under which criterion/criteria, the individual is eligible for membership. An individual can be eligible under more than one criteria. You are not supposed to assume any thing, other then the information provided in each question.

Study the above information carefully and answer question

Rakesh Varma is a working pilot in Jet Airways with an annual income of Rs. 10 lakhs. He is ready to pay Rs. 50,000 for a one time membership fees. His father is a retired Navy officer. Then Rakesh is

a. not eligible

- b. eligible under (ii) & (iii) only
- c. eligible under (iii) only
- d. eligible under (iv) only

77. Direction:

(+1)

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Kiran Gupta can pay Rs. 70,000 as membership fee. He has been playing in National Basket ball team and he is working in a public sector bank. His father is a member of that club. Then Kiran Gupta is

- a. not eligible
- b. eligible under (v) only

c. eligible under,(iii) and (v) only

d. eligible under (iv) only

78. Direction:

(+1)

Following are the eligibility criteria for becoming member of an exclusive club:

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In each question, information about an individual is given. Based on that, you have to decide under which criterion/criteria, the individual is eligible for membership. An individual can be eligible under more than one criteria. You are not supposed to assume any thing, other then the information provided in each question.

Study the above information carefully and answer question

Gauri Shankar's annual income is Rs. 6 lakhs. He is a retired judge of High Court. He can pay Rs. 1 lakh as membership fees. He is a National Cricket Player from his home state. Then Gauri Shankar is

a. not eligible

b. eligible under (i) & (v) only

c. eligible under (i) & (iii) only

d. eligible under (i) only

79. Direction:

(+1)

Following are the eligibility criteria for becoming member of an exclusive club:

(i) The applicant's annual income should be at least Rs. 5 lakhs. He should be able to pay one- time membership fees of Rs. One lakh

(ii) The conditions given in (i) are both relaxed upto 50% for former defence personnel

(iii) For the children of existing members, the criterion of annual income is reduced to Rs. 3 lakhs and one time membership fees to Rs. 70,000.

(iv) Judges working in courts presently are offered free membership and the stipulation of annual income is waived.

(v) Irrespective of annual income, a national level sport personnal is eligible to be a member by paying Rs. 20,000 as membership fees.

In each question, information about an individual is given. Based on that, you have to decide under which criterion/criteria, the individual is eligible for membership. An individual can be eligible under more than one criteria. You are not supposed to assume any thing, other then the information provided in each question.

Study the above information carefully and answer question

Preeti Singhal is the daughter of an existing member of the club. Her annual income is Rs. 4 lakhs. She can pay Rs. 80,000 as one time membership fees. She works in Indian Airforce. Then Preeti Singhal is

a. eligible under (i) & (iii) only

b. eligible under (i) & (iv) only

c. eligible under (iii) & (iv) only

d. eligible under (iii) only

80. Direction:

(+1)

Following are the eligibility criteria for becoming member of an exclusive club:

- (i) The applicant's annual income should be atleast Rs. 5 lakhs. He should be able to pay one- time membership fees of Rs. One lakh
- (ii) The conditions given in (i) are both relaxed upto 50% for former defence personnel
- (iii) For the children of existing members, the criterion of annual income is reduced to Rs. 3 lakhs and one time membership fees to Rs. 70,000.
- (iv) Judges working in courts presently are offered free membership and the stipulation of annual income is waived.
- (v) Irrespective of annual income, a national level sport personnal is eligible to be a member by paying Rs. 20,000 as membership fees.

In each question, information about an individual is given. Based on that, you have to decide under which criterion/criteria, the individual is eligible for membership. An individual can be eligible under more than one criteria. You are not supposed to assume any thing, other then the information provided in each question.

Study the above information carefully and answer question

Shobha Sharma works in a Public Sector Bank. She is a player in National Badminton team. Her father is a retired judge of a district court. Her annual income is Rs. 6 lakhs. She can pay Rs. 1 lakh towards one time membership fee. Then Shobha Sharma is

- a. eligible under (i) only
- b. eligible under (i) & (ii) only
- c. eligible under (i) & (v) only
- d. eligible under (i) & (iv) only

81. If TEACHER and HIGHLY are written as XWPBRWM and RSNRDZ respectively, how will be the word CHARITY coded? **(+1)**

- a. BRPMSXZ
- b. BPRNBSZ
- c. MBRPDSZ
- d. BRPXSMZ

82. If FURNITURE is coded as ERUTINRUF, how can FRAGRANCE be coded? **(+1)**

- a. FCNARGRFA
- b. FARGRACEN
- c. ECNARGARF
- d. ARFGNCRE

83. If the word DIAMOND is coded as AFXJLKA, then JLKHBV is the code for **(+1)**

- a. MONKER
- b. KEYMON
- c. MONITER
- d. MONKEY

84. Consider the following codes and decodes. The codes are written in CAPITAL (Upper Case) letters **(+1)**

Decode/key :	b	a	e	s	p	r	h	i	g	t
Code :	L	X	P	Z	J	Y	Q	M	N	B

Decode QPMNQB

- a. caught
- b. matery
- c. fights
- d. height

85. A man starts from a point and moves 3 km North, then turns to West and goes 2 km. He then turns North and walks 1 km and then moves 5 km towards East. How far is he from the starting point (+1)

- a. 11 km
- b. 5 km
- c. 10 km
- d. 8 km

86. Point B is 3 meters to the North of point A, Point C is 3 meters to the West of point B, Point D is 5 meters to the South of point 'C', Point E is 7 meters to the East of Point D. In which of the directions is the point E, with reference to point B? (+1)

- a. East
- b. South
- c. South-East

d. West

87. For question, each question is followed by two statements I and II. Mark your answer as **(+1)**

- (1), if the statement I alone can give the answer
- (2), if the statement II alone can give the answer
- (3), if the statement I and II together are necessary to give the answer
- (4), if the statement I and II together also are not sufficient to answer the question and additional information is necessary

Manoj, Prabhakar, Akash and Kamal are four friends. Who among them is the heaviest?

- (I) Prabhakar is heavier than Manoj and Kamal but lighter than Akash
- (II) Manoj is lighter than Prabhakar and Akash but heavier than Kamal

- a. (1)
- b. (2)
- c. (3)
- d. (4)

88. For question, each question is followed by two statements I and II. Mark your answer as **(+1)**

- (1), if the statement I alone can give the answer
- (2), if the statement II alone can give the answer
- (3), if the statement I and II together are necessary to give the answer

(4), if the statement I and II together also are not sufficient to answer the question and additional information is necessary

Z is in which direction with respect to X?

(I) Y is to the South of X, Z is to the East of P and P is to the North of Y

(II) P is to the South of X

- a. (1)
- b. (2)
- c. (3)
- d. (4)

89. For question, each question is followed by two statements I and II. Mark your answer as

(+1)

(1), if the statement I alone can give the answer

(2), if the statement II alone can give the answer

(3), if the statement I and II together are necessary to give the answer

(4), if the statement I and II together also are not sufficient to answer the question and additional information is necessary

What is Nitin's rank from the top, in a class of 40 students?

(I) There are ten students between Nitin and Naveen

(II) Naveen is twentieth from the top

- a. (1)
- b. (2)

c. (3)

d. (4)

90. For question, each question is followed by two statements I and II. Mark your answer as

(+1)

(1), if the statement I alone can give the answer

(2), if the statement II alone can give the answer

(3), if the statement I and II together are necessary to give the answer

(4), if the statement I and II together also are not sufficient to answer the question and additional information is necessary

How many gift boxes were sold on Monday?

(I) It was 10% more than the boxes sold on the earlier day i.e, Sunday

(II) Every third visitor to the shop bought the box and there were 1500 visitors on Sunday

a. (1)

b. (2)

c. (3)

d. (4)

91. Direction : For the Assertion (A) and Reason (R) below, choose the correct alternative from the following as

(+1)

Assertion (A) : Subhas Chandra Bose resigned from the office of the President of Indian National Congress in 1939

Reason (R) : Subhas Chandra Bose left congress to form the Indian Independence League in South East Asia

- a. If both (A) and (R) are true and (R) is the correct explanation of (A)
- b. If both (A) and (R) are true and (R) is not the correct explanation of (A)
- c. If (A) is true but (R) is false
- d. If (A) is false but (R) is true

92. Direction : For the Assertion (A) and Reason (R) below, choose the correct alternative from the following as

(+1)

Assertion (A): India has a tropical monsoon type climate

Reason (R) : India is located exactly between the tropical latitudes

- a. If both (A) and (R) are true and (R) is the correct explanation of (A)
- b. If both (A) and (R) are true and (R) is not the correct explanation of (A)
- c. If (A) is true but (R) is false
- d. If (A) is false but (R) is true

93. Direction : For the Assertion (A) and Reason (R) below, choose the correct alternative from the following as

(+1)

Assertion (A) : Mercury is the farthest planet from the sun

Reason (R) : Mercury is the smallest planet in the entire solar system

- a. If both (A) and (R) are true and (R) is the correct explanation of (A)
- b. If both (A) and (R) are true and (R) is not the correct explanation of (A)

- c. If (A) is true but (R) is false
- d. If (A) is false but (R) is true

94. Direction: For the Assertion (A) and Reason (R) below, choose the correct alternative from the following as **(+1)**

Assertion (A): India is facing the problem of inflation

Reason (R): Inflation is caused by the raise of prices of commodities

- a. If both (A) and (R) are true and (R) is the correct explanation of (A)
- b. If both (A) and (R) are true and (R) is not the correct explanation of (A)
- c. If (A) is true but (R) is false
- d. If (A) is false but (R) is true

95. Direction : For the Assertion (A) and Reason (R) below, choose the correct alternative from the following as **(+1)**

Asserttion (A) : Metals are present in molten state inside the earth

Reason (R) : Earth absorbs the sun's rays

- a. If both (A) and (R) are true and (R) is the correct explanation of (A)
- b. If both (A) and (R) are true and (R) is not the correct explanation of (A)
- c. If (A) is true but (R) is false
- d. If (A) is false but (R) is true

96. Study the following information carefully and answer the question **(+1)**

Seven Airlines namely Jet Airways, British Airways, Delta, Quantas, Emirates, Lufthansa and Air India operate flights to London. Beginning from Monday and ending on Sunday, on each day of the week, there is only one flight to London.

Delta flies on Wednesday. Air India flies the day next to British Airways. Two airlines fly between the days British airways and Emirates fly. British airways does not fly on Monday and Friday. Emirates does not fly on Sunday. Quantas flies a day before Lufthansa flies.

Jet Airways fly on this day

- a. Friday
- b. Sunday
- c. Tuesday
- d. Thursday

97. Study the following information carefully and answer the question

(+1)

Seven Airlines namely Jet Airways, British Airways, Delta, Quantas, Emirates, Lufthansa and Air India operate flights to London. Beginning from Monday and ending on Sunday, on each day of the week, there is only one flight to London.

Delta flies on Wednesday. Air India flies the day next to British Airways. Two airlines fly between the days British airways and Emirates fly. British airways does not fly on Monday and Friday. Emirates does not fly on Sunday. Quantas flies a day before Lufthansa flies.

Number of flights operating between Lufthansa and Delta is

- a. One
- b. Two
- c. Three

d. Four

98. Study the following information carefully and answer the question

(+1)

Seven Airlines namely Jet Airways, British Airways, Delta, Quantas, Emirates, Lufthansa and Air India operate flights to London. Beginning from Monday and ending on Sunday, on each day of the week, there is only one flight to London.

Delta flies on Wednesday. Air India flies the day next to British Airways. Two airlines fly between the days British airways and Emirates fly. British airways does not fly on Monday and Friday. Emirates does not fly on Sunday. Quantas flies a day before Lufthansa flies.

The airlines that operate its flight on Friday, is

- a. Air India
- b. Quantas
- c. Lufthansa
- d. Delta

99. Study the following information carefully and answer the question

(+1)

Seven Airlines namely Jet Airways, British Airways, Delta, Quantas, Emirates, Lufthansa and Air India operate flights to London. Beginning from Monday and ending on Sunday, on each day of the week, there is only one flight to London.

Delta flies on Wednesday. Air India flies the day next to British Airways. Two airlines fly between the days British airways and Emirates fly. British airways does not fly on Monday and Friday. Emirates does not fly on Sunday. Quantas flies a day before Lufthansa flies.

Due to some technical reasons, if Delta postpones its flight to Sunday and all the flights scheduled from Thursday to Sunday are now advanced one day

ahead of their schedule, the one that would now fly on Friday is

- a. Lufthansa
- b. Quantas
- c. Jet Airways
- d. Bristish Airways

100. Study the following information carefully and answer the question

(+1)

Seven Airlines namely Jet Airways, British Airways, Delta, Quantas, Emirates, Lufthansa and Air India operate flights to London. Begining from Monday and ending on Sunday, on each day of the week, there is only one flight to London.

Delta flies on Wednesday. Air India flies the day next to British Airways. Two airlines fly between the days British airways and Emirates fly. British airways does not fly on Monday and Friday. Emirates does not fly on Sunday. Quantas flies a day before Lufthansa flies.

If Jet Airways is related to British Airways and Air India is related to Lufthansa in a certain way based upon the given flight schedule, then based upon the same relationship, Emirates is related to

- a. Jet Airways
- b. Lufthansa
- c. Delta
- d. Quantas

Answers

1. Answer: c

Explanation:

Calculation:

$$\frac{1}{2} \text{ of the first} = \frac{2}{3} \text{ of the second} = \frac{3}{4} \text{ of the third} = \frac{4}{5} \text{ of the fourth} = k \text{ (Let)}$$

$$\text{First} = 2k$$

$$\text{Second} = 3k/2$$

$$\text{Third} = 4k/3$$

$$\text{Fourth} = 5k/4$$

$$\text{First} : \text{Second} : \text{Third} : \text{Fourth} = 2k : 3k/2 : 4k/3 : 5k/4$$

$$\text{LCM of 2, 3, and 4} = 12$$

$$\text{First} : \text{Second} : \text{Third} : \text{Fourth} = (2 : 3/2 : 4/3 : 5/4) \times 12$$

$$\Rightarrow 24 : 18 : 16 : 15$$

$$\text{Now, } 24x + 18x + 16x + 15x = 7300$$

$$\Rightarrow 73x = 7300$$

$$\Rightarrow x = 100$$

The difference in the number of soldiers between the battalions with maximum and minimum number

$$\Rightarrow 24x - 15x$$

$$\Rightarrow 9x$$

$$\Rightarrow 9 \times 100$$

⇒ 900

2. Answer: d

Explanation:

Concept:

50 paise = $\frac{1}{2}$ rupees

5 paise = $\frac{1}{20}$ rupees

Formula used:

Amount = Number of coins × Amount of a coin

Calculation:

$$3x + \frac{5x}{2} + \frac{7x}{20} = 23.40$$

$$\Rightarrow 60x + 50x + 7x = 23.40 \times 20$$

$$\Rightarrow 117x = 468$$

$$\Rightarrow x = 468 / 117$$

$$\Rightarrow x = 4$$

The number of 50 paise coins in that bag = $5x = 5 \times 4 = 20$

3. Answer: c

Explanation:

Calculation:

Total books = 1320

Woman gets books = $3 \times$ Boy gets books

Man gets books = Woman gets book + Boy gets books

Man gets books = $3 \times$ Boy gets books + Boy gets books

Man gets books = $4 \times$ Boy gets books

Total books = 1320

7 Men + 11 Women + 5 Boys = 1320

$\Rightarrow 7 \times 4 \times \text{Boy gets books} + 11 \times 3 \times \text{Boy gets books} + 5 \text{ Boy gets books} = 1320$

$\Rightarrow (28 + 33 + 5) \text{ Boy gets books} = 1320$

$\Rightarrow \text{Boy gets books} = 1320 / 66 = 20$

One Woman's share of books = $3 \times$ Boy gets books

$\Rightarrow 3 \times 20$

$\Rightarrow 60 \text{ books}$

4. Answer: a

Explanation:

Given:

Sum = Rs. 1540

$$A = \frac{2}{9} (B + C)$$

$$B = \frac{3}{11} (A + C)$$

Calculation:

$$A / (B + C) = \frac{2}{9} \text{ (Multiply by } 3 + 11 = 14 \text{ in numerator and denominator)} = \frac{28}{126}$$

$$B / (A + C) = \frac{3}{11} \text{ (Multiply by } 2 + 9 = 11 \text{ in numerator and denominator)} = \frac{33}{121}$$

$$\text{Now, } A + B + C = 28x + 126x = 154x$$

$$C's \text{ share} = 154x - (28 + 33)x = 154x - 61x = 93x$$

$$C's \text{ share} = (93x / 154x) \times 1,540$$

$$\Rightarrow 93 \times 10$$

$$\Rightarrow 930$$

$\therefore$ C's share is Rs. 930

5. Answer: d

Explanation:

Given:

One-third of the journey at = 25 kmph

One-fourth of the journey at = 30 kmph

Formula used:

Average speed = Total distance / Total time

Calculation:

Let the total distance be $12x$

Time is taken by one-third of the journey = $4x / 25$

Time is taken by one-fourth of the journey = $3x / 30 = x / 10$

Remaining distance = $12x - (4x + 3x) = 5x$

Time is taken by remaining distance = $5x / 50 = x / 10$

Total time = $\frac{4x}{25} + \frac{x}{10} + \frac{x}{10}$

$$\Rightarrow \frac{8x+5x+5x}{50}$$

$$\Rightarrow \frac{18x}{50}$$

$$\Rightarrow \frac{9x}{25}$$

$$\text{Average speed} = \frac{12x}{(9x/25)}$$

$$\Rightarrow \frac{100}{3}$$

$$\Rightarrow 33\frac{1}{3}$$

$\therefore$ His average speed for the entire journey (in km/hr) is $33\frac{1}{3}$

6. Answer: c

Explanation:

Formula used:

Average = Sum of all / total number of terms

Calculation:

So the sum of the age of A, B, and C is = $84 \times 3 = 252$ years

And the sum of the age of A, B, C, and D is = $80 \times 4 = 320$ years

Age of D = $320 - 252 = 68$

Age of E = age of D + 3 years = $68 + 3 = 71$

The Sum of ages of B, C, D, and E is = $79 \times 4 = 316$

Now the age of A = $320 - 316 + 71 = 75$

So, the age of A is 75 years

7. Answer: d

Explanation:

Concept:

Average of first "n" natural number = $(n + 1) / 2$

Average of first "n multiples of a" = $a \times (n + 1) / 2$

Calculation:

The average of the first 15 multiples of 5 = $5 \times 16 / 2$

$$\Rightarrow 5 \times 8$$

$$\Rightarrow 40$$

$\therefore$ The average of the first 15 multiples of 5 is 40

8. Answer: b

Explanation:

Given:

Average of 4 classes = 60 kg

Average of A = 45 kg

Average of B = 50 kg

Average of C = 72 kg

Average of D = 80 kg

Average of A + B = 48 kg

Average of B + C = 60 kg

Formula used:

Average = Total weight / Total students

Calculation:

Total weight of A + B

$$\Rightarrow 48 (A + B) = 45A + 50B$$

$$\Rightarrow 3A = 2B$$

$$\Rightarrow A : B = 2 : 3 \quad \text{----- (i)}$$

Total weight of B + C

$$\Rightarrow 60 (B + C) = 50B + 72C$$

$$\Rightarrow 10 B = 12C$$

$$\Rightarrow B : C = 12 : 10 = 6 : 5 \quad \text{----- (ii)}$$

From (i) and (ii)

$$\Rightarrow A : B : C = 4 : 6 : 5$$

Total weight of A + B + C + D

Let the number of students in class D be "a"

$$\Rightarrow 45A + 50B + 72C + 80D = 60 (A + B + C + D)$$

$$\Rightarrow 45 \times 4 + 50 \times 6 + 72 \times 5 + 80 \times a = 60 (4 + 6 + 5 + a)$$

$$\Rightarrow 180 + 300 + 360 + 80a = 60 (15 + a)$$

$$\Rightarrow 840 + 80a = 900 + 60a$$

$$\Rightarrow 20a = 60$$

$$\Rightarrow a = 3$$

∴ The ratio of the number of students in class A and class D is 4 : 3

9. Answer: b

Explanation:

Calculation:

Let the production be 100 units

Due to the reduction in the workforce,

Now production = $100 \times (100 - 25)\% = 75$ units

The working hours should be increased = $100 \text{ units} - 75 \text{ units} = 25 \text{ units}$

The working hours should be increased in %

$$\Rightarrow (25 / 75) \times 100\%$$

$$\Rightarrow (100 / 3)\%$$

$$\Rightarrow 33\frac{1}{3}\%$$

∴ To restore the original production, the working hours should be increased by $33\frac{1}{3}\%$

10. Answer: d

Explanation:

Given:

Anil sells his goods 25% cheaper than Sunil and 25% dearer than Akil

Calculation

Let price to y goods = x

The price of y goods = $x - 25 \div 100 = x - x/4 = 3x/4$ (i)

Let price of x sells = $y + 25y/100 = y + y/4 = 5y/4$ (ii)

From equation (i) and (ii)

$$\Rightarrow 3x/4 = 5y/4$$

$$\Rightarrow 3x = 5y$$

$$\Rightarrow y = 0.6x$$

Then y = 60% of x

Percentage of Akil's good cheaper than y = $100 - 60 = 40\%$

$\therefore$ Akil's goods are cheaper than Sunil's is 40%

11. Answer: a

Explanation:

Calculation:

$$1 \div \frac{3}{7} \text{ of } (6 + 8 \times \overline{3 - 2}) \left[\frac{1}{5} \div \frac{7}{25} - \left\{ \frac{3}{7} + \frac{8}{14} \right\} \right]$$

$$\Rightarrow 1 \div \frac{3}{7} (6 + 8 \times 1) \left[\frac{1}{5} \div \frac{7}{25} - \left\{ \frac{3}{7} + \frac{8}{14} \right\} \right]$$

$$\Rightarrow 1 \div \frac{3}{7} (14) \left[\frac{1}{5} \div \frac{7}{25} - \left\{ \frac{3}{7} + \frac{8}{14} \right\} \right]$$

$$\Rightarrow 1 \div \frac{3}{7} (14) \left[\frac{1}{5} \div \frac{7}{25} - \left\{ \frac{6+8}{14} \right\} \right]$$

$$\Rightarrow 1 \div \frac{3}{7} (2) \left[\frac{1}{5} \div \frac{7}{25} - \left\{ \frac{14}{14} \right\} \right]$$

$$\Rightarrow 1 \div 6 \left[\left(\frac{1}{5} \right) \times \left(\frac{25}{7} \right) - 1 \right]$$

$$\Rightarrow 1 \div 6 \left[\left(\frac{5}{7} \right) - 1 \right]$$

$$\Rightarrow 1 \div 6 \left[-\frac{2}{7} \right]$$

$$\Rightarrow 1 \div [-12/7]$$

$$\Rightarrow 1 \times (-7/12)$$

$$\Rightarrow -7/12$$

12. Answer: b

Explanation:

Calculation:

$$12 \times 18 \times 15 \times 40 \times 25 \times 16 \times 55 \times 105$$

$$\Rightarrow (2^2 \times 3) \times (3^2 \times 2) \times (5 \times 3) \times (2^3 \times 5) \times 5^2 \times 2^4 \times 5 \times 11 \times 3 \times 5 \times 7$$

$$\Rightarrow 2^{2+1+3+4} \times 3^{1+2+1+1} \times 5^{1+1+2+1+1} \times 11 \times 7$$

$$\Rightarrow 2^{10} \times 3^5 \times 5^6 \times 11 \times 7$$

Hint: $2 \times 5 = 10$ (This means the minimum number of 2 or 5 will decide the number of zeros at the end of the product.)

Power of 5 is 6

Power of 2 is 10

$\therefore$ The number of zeros occurring at the end of the product is 6

13. Answer: a

Explanation:

Calculation:

$$\left[1 - \left\{ 1 - \left[(1 - (1/10))^3 \right]^{-1} \right\} \right]^{\frac{1}{3}}$$

$$\Rightarrow [1 - \{1 - [(1 - (1/10))^3]^{-1}\}]^{\frac{1}{3}}$$

$$\Rightarrow [1 - \{1 - [(9/10)^3]^{-1}\}]^{\frac{1}{3}}$$

$$\Rightarrow [1 - \{1 - (729/1000)^{-1}\}]^{\frac{1}{3}}$$

$$\Rightarrow [1 - \{1 - (1000/729)\}]^{\frac{1}{3}}$$

$$\Rightarrow [1 - \{-271/729\}]^{\frac{1}{3}}$$

$$\Rightarrow [1 + \{271/729\}]^{\frac{1}{3}}$$

$$\Rightarrow [\{1000/729\}]^{\frac{1}{3}}$$

$$\Rightarrow [\frac{10}{9}]^{\frac{1 \times 3}{3}}$$

$$\Rightarrow 10 / 9$$

14. Answer: c

Explanation:

Formula used:

$$S_n = (n/2)[a + l]$$

$$l = a + (n - 1)d$$

Calculation:

All odd numbers from 20 to 102 = 21, 23, 25, ----- 101

$$a = 21$$

$$l = 101$$

$$d = t_2 - t_1 = 23 - 21 = 2$$

$$l = a + (n - 1)d$$

$$\Rightarrow 101 = 21 + (n - 1)2$$

$$\Rightarrow 80 / 2 = n - 1$$

$$\Rightarrow n = 41$$

$$S_n = (n/2)[a + l]$$

$$\Rightarrow S_{41} = (41/2)[21 + 101]$$

$$\Rightarrow S_{41} = (41/2) \times 122$$

$$\Rightarrow S_{41} = 41 \times 61$$

$$\Rightarrow S_{41} = 2501$$

$\therefore$ The sum of all odd numbers from 20 to 102 is 2501

15. **Answer: c**

Explanation:

Formula used:

Dividend = Divisor $\times$ Quotient + Remainder

Calculation:

Divisor = 223

Remainder = 79

Dividend = Divisor $\times$ Quotient + Remainder

$$\Rightarrow 223 \times Q + 79$$

$$\Rightarrow 223Q + 79$$

2nd conditing,

$$\text{Divisor} = 179$$

$$\text{Quotient} = 315$$

$$\text{Dividend} = \text{Divisor} \times \text{Quotient} + \text{Remainder}$$

$$\Rightarrow 179 \times 315$$

$$\Rightarrow 56385$$

So, when we divide the number 55385 by 223 we get 252 as the quotient and 189 as the remainder.

$$56385 \div 223$$

$$\text{Quotient} = 252$$

$$\text{Remainder} = 189$$

$$\therefore \text{Required Number} = (223 - 189) + 79 = 34 + 79 = \mathbf{113}$$

16. Answer: a

Explanation:

Formula used:

$$S_n = (n/2)[a + l]$$

$$l = a + (n - 1)d$$

Calculation:

numbers between 100 and 300 are divisible by 13

$$\Rightarrow 104, 117, 130, \quad \text{-----} \quad 299$$

$$a = 104$$

$$l = 299$$

$$d = t_2 - t_1 = 117 - 104 = 13$$

$$l = a + (n - 1)d$$

$$\Rightarrow 299 = 104 + (n - 1)13$$

$$\Rightarrow 195 / 13 = n - 1$$

$$\Rightarrow n = 15 + 1 = 16$$

$\therefore$ 16 numbers between 100 and 300 are divisible by 13

17. Answer: c

Explanation:

Calculation:

Let the five consecutive even numbers = $x, x + 2, x + 4, x + 6, x + 8$

Now, $x + x + 2 + x + 4 + x + 6 + x + 8 = 130$

$$\Rightarrow 5x + 20 = 130$$

$$\Rightarrow 5x = 110$$

$$\Rightarrow x = 22$$

Largest number = $x + 8 = 30$

Smallest number = $x = 22$

LCM of 30 and 22 = $2 \times 11 \times 3 \times 5 = 330$

$\therefore$ L.C.M of the largest and the smallest of those numbers is 330

18. Answer: d

Explanation:

Concept:

The difference between the simple interest and the compound interest for 2 years = $\frac{r^2}{10000} \times \text{Amount}$

Calculation:

$$\Rightarrow 50 = \frac{5^2}{10000} \times \text{Amount}$$

$$\Rightarrow 50 = \frac{25}{10000} \times \text{Amount}$$

$$\Rightarrow 50 = \text{Amount} / 400$$

$$\Rightarrow \text{Amount} = 50 \times 400 = 20,000$$

$\therefore$ Sum of money (in Rs.) is 20,000

19. Answer: c

Explanation:

Given:

$$\text{CI} = \text{Rs. } 246$$

$$\text{Rate} = 5\%$$

$$\text{Time} = 2 \text{ year}$$

Formula used :

$$A = P [1 + (r/100)]^t$$

$$\text{SI} = \text{PRT} / 100$$

Calculation:

$$CI = A - P$$

$$\Rightarrow 246 = P [1 + (5/100)]^2 - P$$

$$\Rightarrow 246 = P [21 / 20]^2 - P$$

$$\Rightarrow 246 = P [441 / 400] - P$$

$$\Rightarrow 246 = P [41/400]$$

$$\Rightarrow 6 = P / 400$$

$$\Rightarrow P = 6 \times 400$$

$$\Rightarrow P = 2400$$

$$SI = PRT / 100$$

$$\Rightarrow S.I. = 2400 \times 6 \times 3 / 100$$

$$\Rightarrow S.I. = 24 \times 18$$

$$\Rightarrow S.I. = 432$$

$\therefore$ The simple interest on the same sum for 3 years at 6% per annum (in Rs.), is 432

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20. Answer: d

Explanation:

Formula used:

$$A = P [1 + (r/100)]^t$$

Calculation:

Let the B's share be 'x'

The share of A = 3903 - x

$$\Rightarrow x [1 + (4/100)]^9 = (3903 - x) [1 + (4/100)]^7$$

$$\Rightarrow [1 + (4/100)]^2 = (3903 - x) / x$$

$$\Rightarrow (26/25)^2 = (3903 - x) / x$$

$$\Rightarrow 676 / 625 = (3903 - x) / x$$

$$\Rightarrow 676x = 625 \times 3903 - 625x$$

$$\Rightarrow 1301x = 625 \times 3903$$

$$\Rightarrow x = 625 \times 3 = 1875$$

$\therefore$ B's share is Rs. 1875

21. Answer: d

Explanation:

Given:

Amount = Rs. 2240

Rate of interest = 4%

Time = 3 years

Formula used:

$$SI = PRT / 100$$

Calculation:

$$\text{Amount} = P + SI$$

$$\Rightarrow 2240 = P + [P \times 4 \times 3 / 100]$$

$$\Rightarrow 2240 = P[28/25]$$

$$\Rightarrow P = 2240 \times 25 / 28 = \text{Rs. } 2000$$

Now,

$$\text{Time} = 6 \text{ months} = 1/2 \text{ year}$$

$$\text{Rate} = 3\frac{1}{2}\% = 7/2 \%$$

$$\text{S.I.} = (2000 \times 7 \times 1) / (2 \times 2 \times 100)$$

$$\text{S.I.} = 5 \times 7 = \text{Rs. } 35$$

$\therefore$ The simple interest on the same sum for 6 months at $3\frac{1}{2}\%$ per annum (in Rs.) is Rs. 35

22. Answer: a

Explanation:

Calculation:

$$\text{Interest in 3rd year} = \text{Amount after 3 years} - \text{Amount after 2 years}$$

$$\text{Interest in 3rd year} = 5324 - 4840 = 484$$

$$\text{Rate of interest} = (484 / 4840) \times 100\% = 10\%$$

$\therefore$ The rate percent per annum is 10%

23. Answer: d

Explanation:

Formula used:

$$\text{S.I.} = \text{PRT} / 100$$

Calculation:

Effective rate of interest = $(7 + 5)\% = 12\%$

$$\Rightarrow 960 = P \times 12 \times 4 / 100$$

$$\Rightarrow 96000 / 48 = P$$

$$\Rightarrow P = 2000$$

$\therefore$ The total sum lent out (in Rs.) = $2,000 \times 2 = \text{Rs. } 4000$

24. Answer: a

Explanation:

Given:

Total collection = Rs. 13250

Calculation:

Let the number of first and second-class passengers travelling between two railway stations be 'x' and '50x'

According to the question:

$$\Rightarrow x \times 3 + 50x \times 1 = \text{Rs. } 13250$$

$$\Rightarrow x = 13250 / 53 = \text{Rs. } 250$$

The amount collected from second-class passengers

$$\Rightarrow 50x \times 1$$

$$\Rightarrow 50 \times 250$$

$$\Rightarrow \text{Rs. } 12500$$

$\therefore$ The amount collected from second-class passengers is Rs. 12500

25. Answer: b

Explanation:

Calculation:

Let the saving of A = $4x$

Part of sharing of A = $3y$

A spent two-third of his savings for this gift,

$$4x - 3y = \frac{2}{3}(4x)$$

$$\Rightarrow 12x - 9y = 8x$$

$$\Rightarrow 4x = 9y$$

$$\Rightarrow x = \left(\frac{9}{4}\right)y \quad \text{----- (i)}$$

Now,

the saving of B = $5x$

Part of sharing of B = $4y$

$$\Rightarrow 5x - 4y = 145$$

From (i)

$$\Rightarrow 5\left(\frac{9}{4}\right)y - 4y = 145$$

$$\Rightarrow 45y - 16y = 145 \times 4$$

$$\Rightarrow 29y = 145 \times 4$$

$$\Rightarrow y = 5 \times 4$$

$$\Rightarrow y = 20$$

The value of that gift (in Rs.) = $3y + 4y = 7y$

$$\Rightarrow 7 \times 20$$

$$\Rightarrow \text{Rs. } 140$$

$\therefore$ The value of that gift (in Rs.) is 140

26. Answer: b

Explanation:

Concept:

$$\text{Efficiency} \propto (1/\text{Time})$$

Calculation:

According to time,

$$B : (A + C) = 3 : 1$$

$$B : (A + C) = (3 : 1) \times 3 = 9 : 3$$

$$\text{Now, Effi, } B : (A + C) = 3 : 9$$

According to time,

$$C : (A + B) = 2 : 1$$

$$C : (A + B) = (2 : 1) \times 4 = 8 : 4$$

$$\text{Now, Effi, } C : (A + B) = 4 : 8$$

$$\text{Now, Efficiency of } C = 4$$

$$\text{Efficiency of } B = 3$$

$$\text{Efficiency of } A = 5$$

$$\text{Total work} = (A + B + C) \times 8 = (5 + 3 + 4)8$$

$$\Rightarrow 96$$

$$\text{A alone can finish that work} = \text{Total work} / \text{Efficiency of A}$$

$$\Rightarrow 96 / 5$$

$$\Rightarrow 19 \frac{1}{5} \text{ days}$$

27. Answer: c

Explanation:

Given:

$$D_1 = 60 \text{ days}$$

$$D_2 = 60 - 15 = 45 \text{ days}$$

Formula used:

$$M_1 \times D_1 = M_2 \times D_2$$

Calculation:

Let the number of men originally in a group be 'a'

$$\Rightarrow a \times 60 = (a + 8) \times 45$$

$$\Rightarrow a \times 4 = (a + 8) \times 3$$

$$\Rightarrow 4a = 3a + 24$$

$$\Rightarrow a = 24$$

$\therefore$ The number of men originally in that group is 24

28. Answer: b

Explanation:

Calculation:

LCM of 8 and 12 = 24 (Total work)

	Days	Effi	Total Work
A	8	3	24
B	12	2	

1st day = 3 unit

2nd day = 2 unit

In 2 days = 5 unit

So, In 8 days = 20 unit

In 9 days = 20 + 3 = 23 unit

Remaing work done by B in $\frac{1}{2}$ day

The work will be completed by them in $9\frac{1}{2}$ days

29. Answer: d

Explanation:

Calculation:

LCM of 8, 6, and 3 = 24

	Days	Effi	Total Work
A	8	3	
B	6	4	24
A+B+C	3	8	

$$\text{Efficiency of C} = 8 - (3 + 4) = 1$$

$$\text{C's share of amount} = (1/8) \times 1800$$

$$\Rightarrow 225$$

$\therefore$ C's share of amount is Rs. 225

30. Answer: b

Explanation:

Concept:

$$\text{Efficiency} \propto \text{Wage}$$

Formula used:

$$M_1 \times D_1 = M_2 \times D_2$$

Calculation:

$$(2M + 1W) \times 14 = (4W + 2M) \times 8$$

$$\Rightarrow (2M + 1W) \times 7 = (4W + 2M) \times 4$$

$$\Rightarrow 14M + 7W = 16W + 8M$$

$$\Rightarrow 6M = 9W$$

$$\Rightarrow M / W = 9 / 6 = 3 : 2$$

$$\Rightarrow M : W = 3 : 2$$

Now, 3 $\rightarrow$ Rs. 240

$$2 \rightarrow \text{Rs. } (240 / 3) \times 2 = \text{Rs. } 160$$

$\therefore$ The wage (in Rs.) per day of a woman is 160

31. Answer: a

Explanation:

Calculation:

In 24 days, A, B and C = Rs. 7,200

In 1 days, A, B and C = Rs. 7,200 / 24 = Rs. 300 ----- (i)

In 10 days, A and C = Rs. 1880

In 1 days, A and C = Rs. 1880 / 10 = Rs. 188 ----- (ii)

In 24 days, B and C = Rs. 3600

In 1 days, B and C = Rs. 3600 / 24 = Rs. 150 ----- (iii)

From (i) and (ii)

Amount received by B = 300 - 188 = Rs. 112

From (i) and (iii)

Amount received by A = Rs. 150

Now, From (ii)

Amount received by C = 188 - 150 = Rs. 38

Amount received by A : Amount received by B : Amount received by C

⇒ 150 : 112 : 38

⇒ **75 : 56 : 19**

32. Answer: b

Explanation:

Calculation:

For same direction,

$$s_1 - s_2 = (120 + 96) / 18$$

$$\Rightarrow 18 (s_1 - s_2) = 216 \quad \text{----- (i)}$$

For the opposite direction,

$$s_1 + s_2 = 216 / 12$$

$$\Rightarrow 12 (s_1 + s_2) = 216 \quad \text{----- (ii)}$$

From (i) and (ii)

$$\Rightarrow 18 (s_1 - s_2) = 12 (s_1 + s_2)$$

$$\Rightarrow 3s_1 - 3s_2 = 2s_1 + 2s_2$$

$$\Rightarrow s_1 = 5s_2$$

From (i),

$$\Rightarrow 18 (5s_2 - s_2) = 216$$

$$\Rightarrow 4s_2 = 12$$

$$\Rightarrow s_2 = 3 \text{ m/sec.}$$

$$\Rightarrow s_1 = 5s_2 = 5 \times 3 = 15 \text{ m/sec.}$$

$$\Rightarrow s_1 = 15 \times (18/5) = 3 \times 18 = 54 \text{ kmph}$$

$\therefore$ The speed of the faster train (in km/hr) is 54 kmph

33. Answer: c

Explanation:

Given

Distance covered by steamer = 120 km

Distance covered by rail = 450 km

Distance covered by taxi = 60 km

Total time = 18 hr

Formula used:

Time = Distance / Speed

Calculation:

Speed of Train : Speed of Taxi : Speed of Steamer

$\Rightarrow 6 : 2 : 4$

Now,

$$\Rightarrow \frac{450}{6x} + \frac{60}{2x} + \frac{120}{4x} = 18$$

$$\Rightarrow \frac{75}{x} + \frac{30}{x} + \frac{30}{x} = 18$$

$$\Rightarrow 135 = 18x$$

$$\Rightarrow x = 7.5$$

The speed of the train = $6x = 6 \times 7.5 = 45 \text{ km/h}$

34. Answer: c

Explanation:**Given:**

Total distance = 510 km

Speed of train T_1 = 50 kmph

Speed of train T_2 = 60 kmph

Formula used:

Distance = Speed $\times$ Time

Calculation:

Time difference = 2 : 45pm to 1 : 35pm = 70 min.

Distance covered by Train T_2 in 70 min. = 70 km.

Remaining distance = 510 - 70 = 440 km

Directions are opposites, so effective speed = 50 + 60 = 110 kmph

The remaining distance covered by both trains = 440 / 110 = 4 hr.

The distance (in km) travelled by T_1 by the time it met T_2 = 50 $\times$ 4

$\Rightarrow$ 200 km

$\therefore$ The distance (in km) travelled by T_1 by the time it met is 200 km

35. Answer: b**Explanation:****Formula used:**

Distance = Speed $\times$ Time

Calculation:

Let the real time be 'x'

$$\Rightarrow 5(x + 20) = (5 + 1)(x + 5)$$

$$\Rightarrow 5x + 100 = 6x + 30$$

$$\Rightarrow x = 70 \text{ min.}$$

$$\text{Distance} = 5(70 + 20) / 60$$

$$\Rightarrow 5 \times 90 / 60$$

$$\Rightarrow 5 \times 3 / 2$$

$$\Rightarrow 7.5 \text{ km}$$

$\therefore$ The distance between his home and school (in km) is 7.5 km

36. Answer: d

Explanation:

Formula of angle between hour hand and minute hand is:

$$\text{Angle} = 6M - (30H + M/2)$$

$$\Rightarrow 90 = 6M - (30 \times 3 + M/2)$$

$$\Rightarrow 90 = 6M - 90 - M/2$$

$$\Rightarrow 90 + 90 = 6M - 0.5M$$

$$\Rightarrow 180 = 5.5M$$

$$\Rightarrow M = 180 \div 5.5$$

$$\Rightarrow M = 32\frac{8}{11}$$

So, the hour hand and the minute hand in a clock are at right angles for the first time after 3 O' clock at $3\text{ hours } 32\frac{8}{11}\text{ minutes}$.

Hence, '3 hrs $32\frac{8}{11}\text{ min}$ ' is the correct answer.

37. Answer: c

Explanation:

Given time: between 3 O' clock and 4 O' clock

So, at 3 O' clock the two hands are 15 minute apart,

But, the given minute hand is 4 minute spaces ahead of the hour hand.

So, the minute hand is 4 minute spaces ahead of the hour hand: $15 + 4 = 19\text{ Minutes}$.

As, In 1 hour (60 Minute) the minute hand gains 55 minutes.

$$\text{So, In 19 minutes} = \frac{60 \times 19}{55}$$

$$= \frac{228}{11} = 20\frac{8}{11}\text{ Minutes}$$

So, the minute hand is 4 minute spaces ahead of the hour hand, is $20\frac{8}{11}\text{ min. past } 3$

Hence, the correct answer is "Option 3".

38. Answer: c

Explanation:

The logic followed here is:

Minutes hand travels in one hour = 60 minutes,

Where, the Hour hand travels at 5 minutes space.

So, Minute hand gains = $60 - 5 = 55$ minutes over hour hand in one hour.

Now,

In 1 hour the minute hand gains 55 minutes,

then, in 60 minutes: $\frac{60 \times 60}{55} = \frac{3600}{55} = 65\frac{5}{11}$ minutes.

So, minute and hour minutes meet after $65\frac{5}{11}$ minutes.

But,

from the given question,

Hand meet after every 64 minutes.

So, $65\frac{5}{11} - 64 = \frac{16}{11}$ minutes.

Here, in 64 minutes clock gains $\frac{16}{11}$ minutes.

So, in 24 hours clock,

it gains: $\frac{16}{11} \times \frac{24 \times 60}{64}$

= $\frac{360}{11} = 32\frac{8}{11}$ minutes.

So, In 24 hours it gain $32\frac{8}{11}$ minutes.

Hence, the correct answer is "Option 3".

39. Answer: a

Explanation:

Month Codes:

Month	Jan	Feb	Mar	Apr	May	June	July	Aug	Sep	Oct	Nov	Dec
Code	0	3	3	6	1	4	6	2	5	0	3	5

Code for Days:

Day	Sun	Mon	Tue	Wed	Thu	Fri	Sat
Code	0 or 7	1	2	3	4	5	6

Code for century 2000 is 6.

10 th June 2002

Date → 10

Month Code → 4

Century Code → 6

2002 → 2000 + 2

For 2000 it is 6

For,

2 it is 2

And,

$2/4 = 0.5$, which will be considered as 0

Adding all these, we get: $10 + 4 + 6 + 02 + 0 = 22$

22 when divided by 7, we get 1 as remainder.

1 is the code for Monday.

So, it was Monday on 10th June 2002.

Hence, '**Monday**' is the correct answer.

40. Answer: c

Explanation:

The last day of a century cannot be Tuesday or Thursday or Saturday.

So, the last day of any century can be Monday.

Hence, '**Monday**' is the correct answer.

41. Answer: d

Explanation:

If 5th March 1999 was Friday
then 5th March 2000 was Sunday.

The same date is a day ahead in an ordinary year and two days ahead in a leap year.

2000 is a leap year, so the day on 5th March 2000 is two days ahead of 5th March 1999.

As, 5th March 2000 is Sunday

Days on dates:

$5 + 7 = 12$ March 2000 is Sunday

$12 + 7 = 19$ March 2000 is Sunday

$19 + 7 = 26$ March 2000 is Sunday

So, 27th March 2000 is Monday.

Hence, 'Monday' is the correct answer.

42. Answer: c

Explanation:

Calculation:

$$\text{Cement} = 1 \times 20\% = 0.2 \text{ kg}$$

$$\text{Sand} = 1 - 0.2 = 0.8 \text{ kg}$$

Let the amount of sand that should be added to the mixture be 'x'

$$\Rightarrow \frac{0.2}{1+x} = \frac{1}{12}$$

$$\Rightarrow 2.4 = 1 + x$$

$$\Rightarrow x = 1.4 \text{ kg}$$

$\therefore$ The amount of sand that should be added to the mixture is 1.4 kg

43. Answer: d

Explanation:

Calculation:

Let the population at the beginning of the year 2008 be '100'

$$\Rightarrow 100 \times (100 - 12)\% \times (100 + 15)\%$$

$$\Rightarrow 100 \times 88\% \times 115\%$$

$$\Rightarrow 88 \times 1.15$$

$$\Rightarrow 101.2$$

So, increase by 1.2%

$$\text{Change in population} = x + y + (xy/100)$$

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$$\Rightarrow -12 + 15 - (12 \times 15/100)$$

$$\Rightarrow 3 - 1.8$$

$$\Rightarrow 1.2$$

So, increase by 1.2%

44. Answer: b

Explanation:

Calculation:

Let the income be '100'

Income	Expenditure	Saving
100 →	75	25
↓ +20%	↓ +8%	
120	81	39

The percentage increase in his savings

$$\Rightarrow [(39 - 25) / 25] \times 100\%$$

$$\Rightarrow (14 / 25) \times 100\%$$

$$\Rightarrow 14 \times 4 \%$$

$$\Rightarrow 56\%$$

∴ The percentage increase in his savings is 56%

45. Answer: a

Explanation:



Hint $8\frac{1}{3}\% = 1/12$

$12\frac{1}{2}\% = 1/8$

Calculation:

Let the CP of the table and chair be "T" and "C"

$$T \times (1/12) = C \times (1/8)$$

$$\Rightarrow T / C = 12 / 8$$

$$\Rightarrow T / C = 3 / 2$$

Again the CP of the table be $3x$

And chair = $2x$

$$3x \times (1/8) - 2x \times (1/12) = 25$$

$$\Rightarrow (9x - 4x) / 24 = 25$$

$$\Rightarrow 5x = 24 \times 25$$

$$\Rightarrow x = 24 \times 5 = 120$$

The CP of table = $3x = 3 \times 120 = \text{Rs. } 360$

 Important Points

$$\text{Profit \%} = (\text{Profit} / \text{CP}) \times 100\%$$

$$\text{Loss \%} = (\text{Loss} / \text{CP}) \times 100\%$$

$$\text{SP} = \text{CP} (100 + P)\%$$

$$\text{SP} = \text{CP} (100 - L)\%$$

46. Answer: b

Explanation:

Given:

$$\text{MP} = \text{Rs. } 480$$

$$\text{Discount} = 10\%$$

Calculation:

$$\text{SP} = \text{MP} (100 - \text{Discount})\%$$

$$\Rightarrow 480 \times (100 - 10)\%$$

$$\Rightarrow 480 \times 90\%$$

$$\Rightarrow 48 \times 9$$

$$\Rightarrow 432$$

$$\text{SP} = \text{CP} (100 + \text{Profit})\%$$

$$\Rightarrow 432 = \text{CP} \times (100 + 8)\%$$

$$\Rightarrow 432 = 1.08 \times \text{CP}$$

$$\Rightarrow \text{CP} = 432 / 1.08$$

$$\Rightarrow \text{CP} = 400$$

If no discount,

$$\text{Profit} = \text{MP} - \text{CP}$$

$$\Rightarrow 480 - 400 = \text{Rs. } 80$$

$$\text{Profit \%} = (80 / 400) \times 100\% = \mathbf{20\%}$$

$\therefore$ If no discount is allowed, then his gain percentage is 20%

47. Answer: b

Explanation:

Concept:

$$\text{First part} \times \text{L\% (G\%)} + \text{Second part} \times \text{L\% (G\%)} = \text{Total part} \times \text{Total L\% (G\%)}$$

Where, L % (G %) = Loss % or Gain %

Calculation:

$$\text{Remaining part} = 1 - (1/3) = 2/3$$

$$\frac{1}{3} \times -10 + \frac{2}{3} \times \text{Gain} = 1 \times 20$$

$$\Rightarrow -10 + 2 \times \text{Gain} = 60$$

$$\Rightarrow 2 \times \text{Gain} = 70$$

$$\Rightarrow \text{Gain} = 35\%$$

$\therefore$ Amala should sell the remainder at a gain percentage of 35%

48. Answer: a

Explanation:

Calculation:

Let the CP of the transistor $100x$

$$\text{Then SP} = 100x \times 115\% = 115x \quad \text{----- (i)}$$

$$\text{If CP} = 100x \times 105\% = 105x$$

$$\text{Then SP} = 105x \times 110\% = 115.5x \quad \text{----- (ii)}$$

From (i) and (ii)

$$\Rightarrow 115.5x - 115x = 6$$

$$\Rightarrow 0.5x = 6$$

$$\Rightarrow x = 12$$

$$\Rightarrow 100x = 1200$$

$\therefore$ The CP of the transistor is Rs. 1200

★ Alternate Method

$\therefore$ The CP of the transistor is Rs. 1200

49. Answer: c

Explanation:

Calculation:

Let the MP be $100x$

$$\text{SP} = 100x (100 - \text{Discount})\% = 100x \times 90\% = 90x$$

$$\text{SP} = \text{CP} (100 + \text{Gain})\%$$

$$\Rightarrow 90 = \text{CP} (100 + 20)\%$$

$$\Rightarrow \text{CP} = 90 / 120\%$$

$$\Rightarrow CP = 9000 / 120 = \text{Rs. } 75$$

$$\text{Difference in CP and MP} = 100 - 75 = \text{Rs. } 25$$

$$\text{Cost price that has to be marked,} = (25 / 75) \times 100\%$$

$$\Rightarrow (100 / 3)\%$$

$$\Rightarrow 33\frac{1}{3}\%$$

50. Answer: a

Explanation:

Calculation:

$$\text{LCM of } 12, 10, \text{ and } 15 = 60$$

	Days	Effi	Total Work
A + B	12	5	
B + C	10	6	60
C + A	15	4	

$$\text{Efficiency of } 2(A + B + C) = 5 + 6 + 4 = 15$$

$$\text{Efficiency of } (A + B + C) = 15 / 2 = 7.5$$

$$\text{Efficiency of } A = \text{Efficiency of } (A + B + C) - \text{Efficiency of } (B + C)$$

$$\text{Efficiency of } A = 7.5 - 6 = 1.5$$

$$\text{Time is taken by } A = \text{Total work} / \text{Effi. of } A$$

$$\Rightarrow 60 / 1.5$$

$$\Rightarrow 40$$

$\therefore$ The time taken in days for A alone to complete that work is 40 days

51. Answer: c

Explanation:

The description is as follows:

Option		Description
1.	Deer	Deer is a herbivorous animal.
2.	Zebra	Zebra is a herbivorous animal.
3.	Hyena	Hyena is a carnivorous animal.
4.	Giraffe	Giraffe is a herbivorous animal.

All options except 'Hyena' are herbivorous animals.

Hence, '**Hyena**' is the odd one out.

52. Answer: b

Explanation:

The logic followed here is:

1. $13 \rightarrow 1 + 3 = 4 \rightarrow$ Even number
2. $23 \rightarrow 2 + 3 = 5 \rightarrow$ Odd number
3. $37 \rightarrow 3 + 7 = 10 \rightarrow$ Even number

4. $71 \rightarrow 7 + 1 = 8 \rightarrow$ Even number

Hence, '23' is the odd one out.

53. Answer: d

Explanation:

The description is as follows:

Option		Description
1.	Dolphin	A dolphin is an aquatic mammal.
2.	Zebra	Zebra is a mammal.
3.	Lioness	Lioness is a mammal.
4.	Crocodile	Crocodiles (family Crocodylidae) or true crocodiles are large semiaquatic reptiles.

All options except Crocodile are mammals.

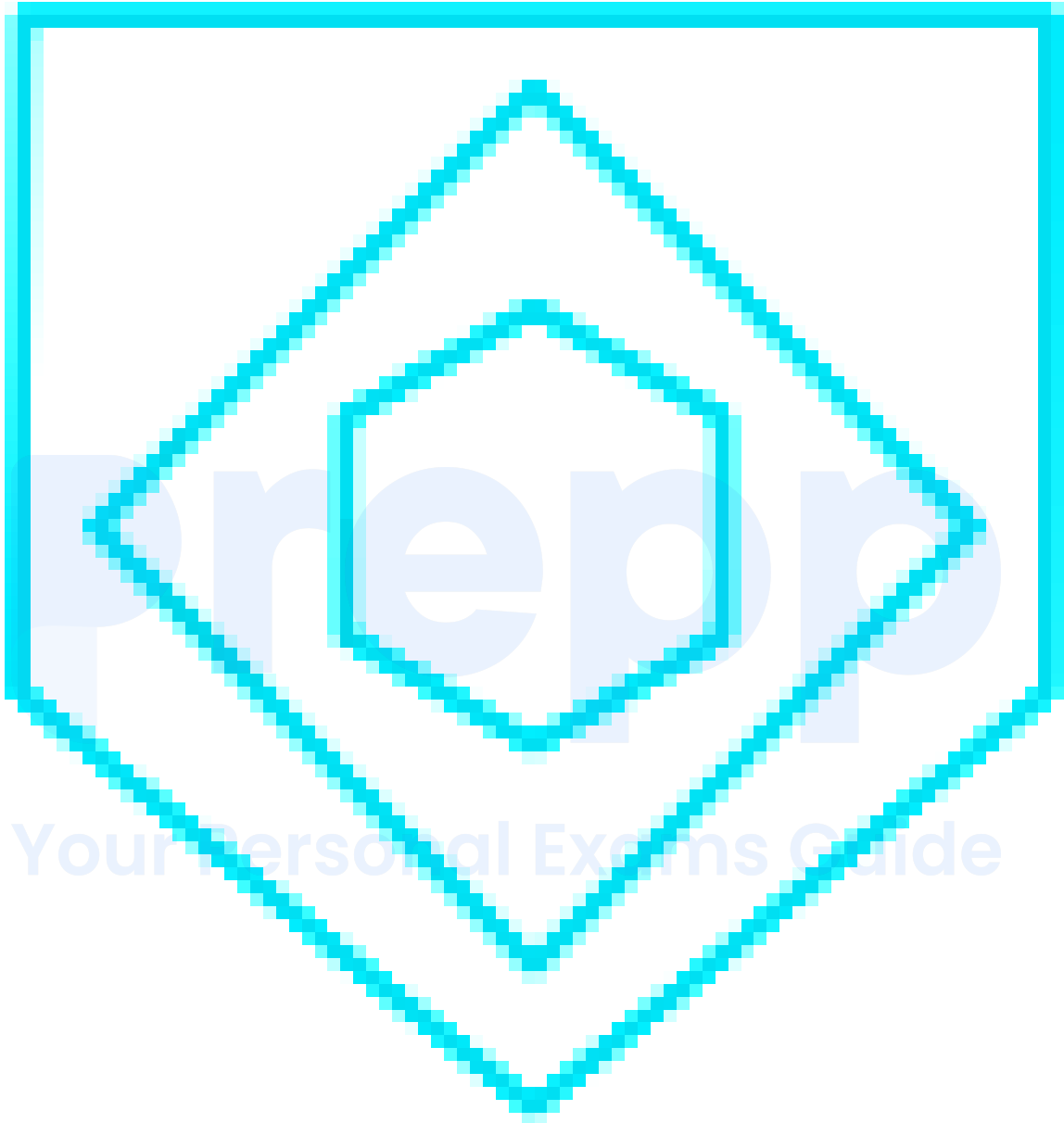
Hence, 'Crocodile' is the odd one out.

54. Answer: d

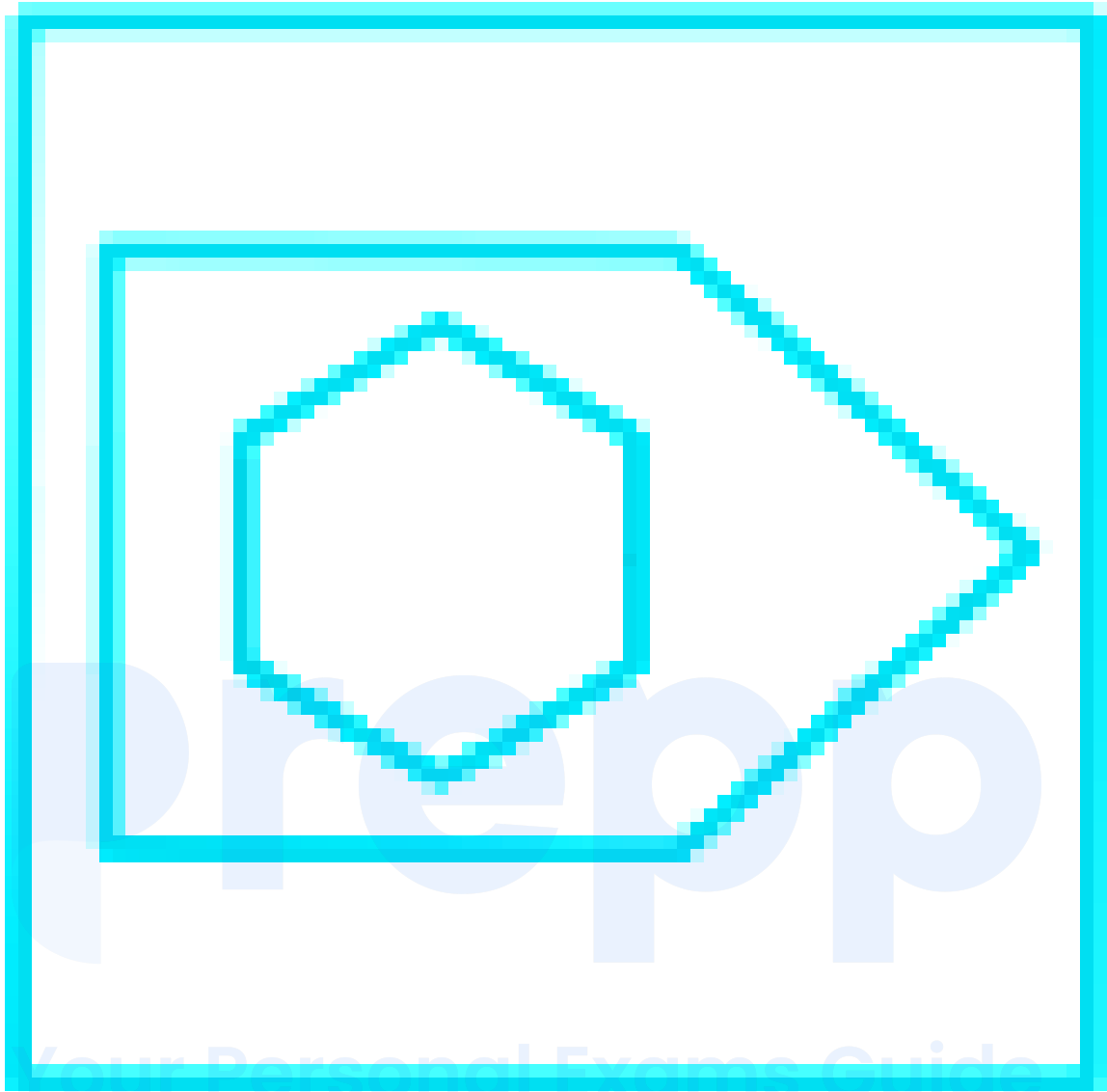
Explanation:

The logic followed here is:

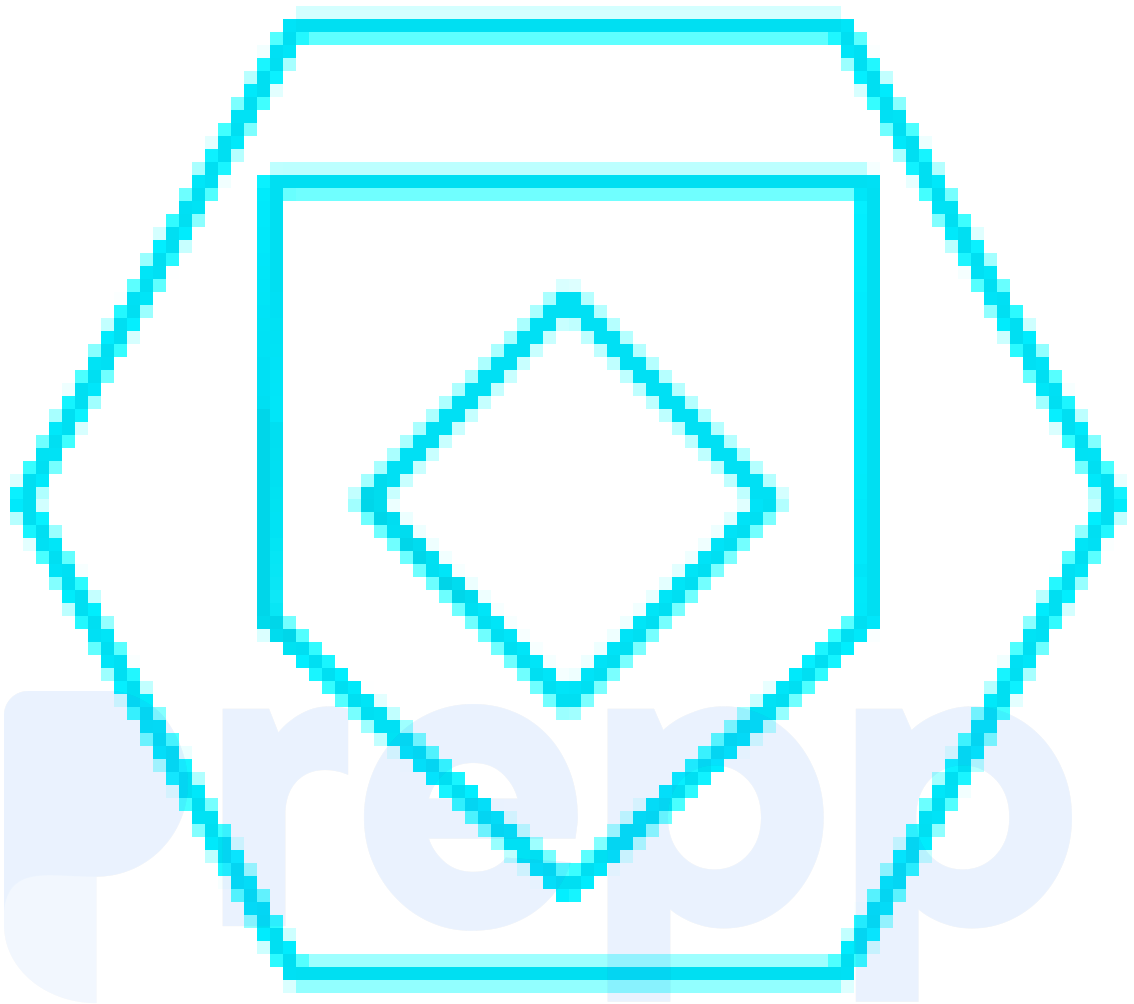
Number of sides in the figures as we move from outside to inside figure.



1. $\rightarrow$ 5, 4, 6

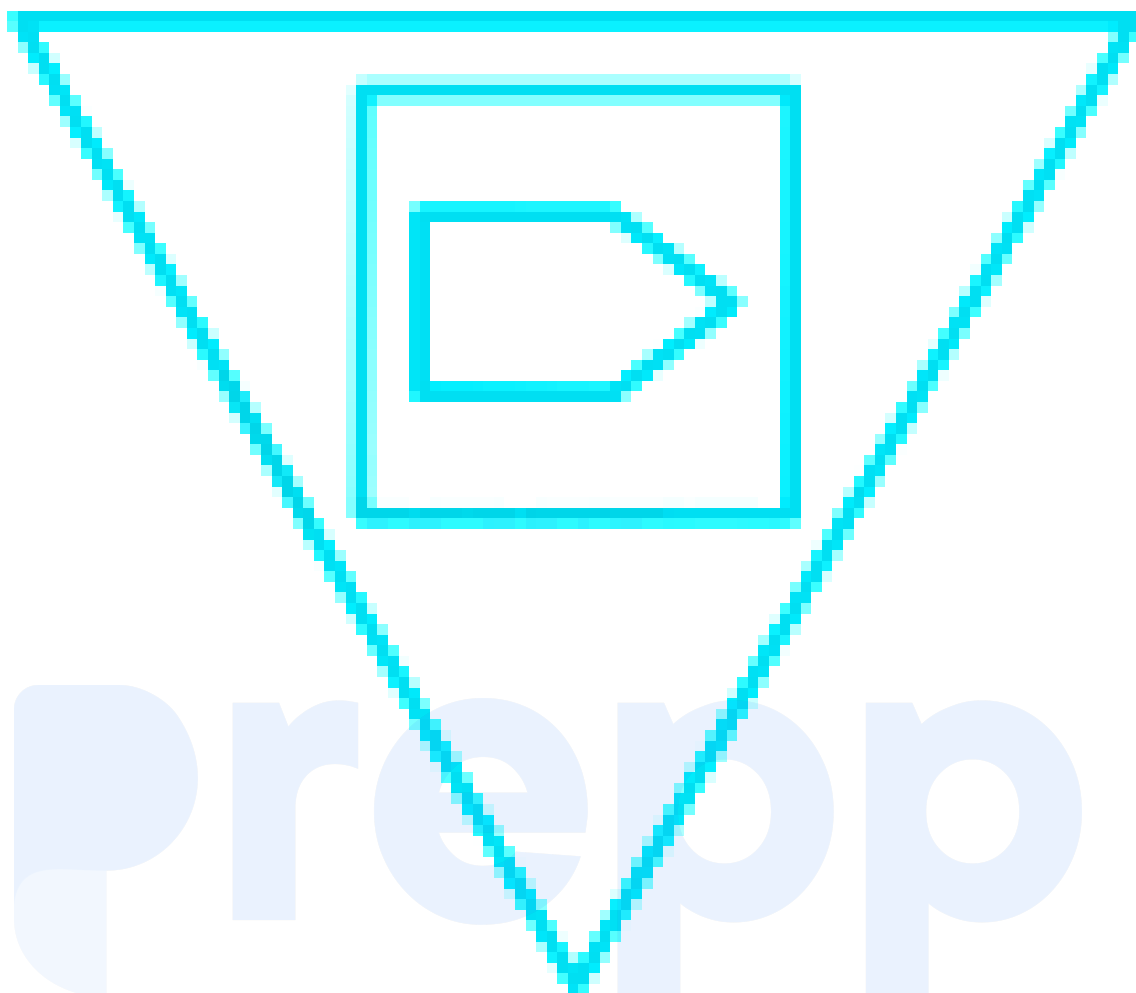


2. → 4, 5, 6



3. → 6, 5, 4

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4. $\rightarrow$ 3, 4, 5

All options except option 4 have figures whose number of sides are 4, 5 and 6.

Hence, ' **option 4** ' is the correct answer.

55. Answer: b

Explanation:

All options except figure '2' make an angle less than 90° , while figure '2' makes an angle of 90° .

Hence, ' **option 2** ' is the odd one out.

56. Answer: a

Explanation:

Given:

A's investment = Rs. 16,000

B's investment = Rs. 12,000

C's investment = Rs. 21,000

Concept:

Profit $\propto$ Investment $\times$ Time

Calculation:

A's profit : B's profit : C's profit

$$\Rightarrow (16000 \times 3) + [(16000 - 5000) \times (12 - 3)] : (12,000 \times 3) + [(12,000 + 5000) \times (12 - 3)] : 21,000 \times 6$$

$$\Rightarrow 48000 + 99000 : 36000 + 153000 : 126000$$

$$\Rightarrow 147000 : 189000 : 126000$$

$$\Rightarrow 147 : 189 : 126$$

$$\Rightarrow 49 : 63 : 42$$

$$\Rightarrow 7 : 9 : 6$$

B's share of profit exceeds A's share = $9x - 7x = 2x$

B's share of profit exceeds A's share = $[2x / (7x + 9x + 6x)] \times \text{Rs. } 26,400 = (1 / 11) \times \text{Rs. } 26,400$

$$\Rightarrow \text{2,400}$$

57. Answer: a

Explanation:

Given:

A's investment = Rs. 30,000

B's investment = Rs. 40,000

A gets = Rs. 100 per month

Calculation:

A gets for running the business for 1 year = $100 \times 12 = \text{Rs. } 1200$

A's share (Except management) = $3900 - 1200 = \text{Rs. } 2700$

A's investment : B's investment = A's share : B's share

$\Rightarrow 30,000 : 40,000 = 2700 : \text{B's share}$

$\Rightarrow 3 : 4 = 2700 : \text{B's share}$

$\Rightarrow \text{B's share} = 2700 \times 4 / 3$

$\Rightarrow \text{B's share} = 900 \times 4 = \text{Rs. } 3600$

58. Answer: d

Explanation:

Given:

A's profit = $2/5$ of the profit

B's profit = C's profit

$$A's \text{ profit} - C's \text{ profit} = \text{Rs. } 4000$$

Calculation:

Remaining profit for B and C = $1 - (2/5) = 3/5$ of the profit

B's profit = $(1.5 / 5)$ of the profit

C's profit = $(1.5 / 5)$ of the profit

Let the total profit be "a"

$$\text{Now, } A's \text{ profit} - C's \text{ profit} = \text{Rs. } 4000$$

$$\Rightarrow (2a/5) - (1.5a/5) = \text{Rs. } 4000$$

$$\Rightarrow 0.5a / 5 = \text{Rs. } 4000$$

$$\Rightarrow a = \text{Rs. } 4000 \times 10 = \text{Rs. } 40,000$$

$\therefore$ The total profit is Rs. 40,000

59. Answer: a

Explanation:

Concept:

Profit $\propto$ Investment

Calculation:

A's investment : B's investment : C's investment = 5 : 7 : 6

After increment,

A's investment : B's investment : C's investment = $5 \times 126\% : 7 \times 120\% : 6 \times 115\%$

$$\Rightarrow 5 \times 126 : 7 \times 120 : 6 \times 115$$

$$\Rightarrow 5 \times 21 : 7 \times 20 : 1 \times 115$$

$$\Rightarrow 1 \times 21 : 7 \times 4 : 1 \times 23$$

$$\Rightarrow 21 : 28 : 23$$

Let A's investment be $21x$

$$\Rightarrow 21x + 28x + 23x = 21600$$

$$\Rightarrow 72x = 21600$$

$$\Rightarrow x = 21600 / 72 = 300$$

The highest and lowest share of profit = $28x - 21x = 7x = 7 \times 300 = \text{Rs. 2100}$

60. Answer: c

Explanation:

Given:

Three sides of a cuboid = 18, 37.5, and 40 cm

Formula used:

Volume of cube = side^3

Volume of cuboid = $L \times B \times H$

Diagonal of cube = $a\sqrt{3}$

Calculation:

Volume of cube = Volume of cuboid

$$\Rightarrow \text{Volume of cube} = 18 \times 37.5 \times 40$$

$$\Rightarrow \text{side}^3 = 27000$$

⇒ side of the cube = 30

Diagonal of cube = $30\sqrt{3}$

⇒ 30×1.732

⇒ 51.96

⇒ Approx. 52 cm

∴ The length of the diagonal of that cube (in cm), correct to the nearest integer is 52 cm

61. Answer: d

Explanation:

Given:

Diameter of cylindrical candles = 4.2 cm

Height of cylindrical candles = 2.8 cm

The rectangular cuboid-shaped wax solid with dimensions = 66 cm, 42 cm, and 21 cm

Formula used:

Number of candles × Volume of a cylindrical candle = Volume of cuboid-shaped wax

Calculation:

The radius of cylindrical candles = $4.2 / 2 = 2.1$ cm

Number of candles × $\pi r^2 h = L \times B \times H$

⇒ Number of candles × $(22/7) \times 2.1 \times 2.1 \times 2.8 = 66 \times 42 \times 21$

⇒ Number of candles × $22 \times 0.3 \times 2.1 \times 2.8 = 66 \times 42 \times 21$

⇒ Number of candles × $1 \times 0.3 \times 2.8 = 3 \times 42 \times 10$

$$\Rightarrow \text{Number of candles} = (30 \times 42 \times 100) / (3 \times 28) = 10 \times 6 \times 25 = 1500$$

$\therefore$ The number of cylindrical candles is 1500

62. Answer: c

Explanation:

Given:

$$L = 18 \text{ cm}$$

$$B = 10 \text{ cm}$$

$$H = 6 \text{ cm}$$

$$\text{Thickness} = 5 \text{ mm} = 0.5 \text{ cm}$$

Formula used:

Volume of wood = Volume of cuboidal box (External) - Volume of cuboidal box (Internal)

Calculation:

$$l = 18 - 2 \times 0.5 = 17 \text{ cm}$$

$$b = 10 - 2 \times 0.5 = 9 \text{ cm}$$

$$h = 6 - 2 \times 0.5 = 5 \text{ cm}$$

$$\text{Volume of wood} = 18 \times 10 \times 6 - 17 \times 9 \times 5$$

$$\Rightarrow 1080 - 765$$

$$\Rightarrow 315 \text{ cm}^3$$

$$\text{The weight of the wooden box} = 315 \times 0.8 = \mathbf{252 \text{ grams}}$$

63. Answer: a

Explanation:

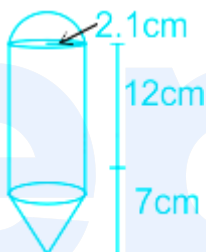
Formula used:

$$\text{Volume of hemisphere} = \frac{2}{3}\pi r^3$$

$$\text{Volume of cylinder} = \pi r^2 h$$

$$\text{Volume of cone} = \frac{1}{3}\pi r^2 h$$

Calculation:



$$\text{Volume of hemisphere} = \frac{2}{3}\pi r^3$$

$$\Rightarrow \frac{2}{3} \times \frac{22}{7} \times 2.1 \times 2.1 \times 2.1$$

$$\Rightarrow 2 \times 22 \times 0.1 \times 4.41$$

$$\Rightarrow 4.4 \times 4.41$$

$$\Rightarrow 19.404 \text{ cm}^3$$

$$\text{Volume of cylinder} = \pi r^2 h$$

$$\Rightarrow \frac{22}{7} \times 2.1 \times 2.1 \times 12$$

$$\Rightarrow 22 \times 0.3 \times 25.2$$

$$\Rightarrow 6.6 \times 25.2$$

$$\Rightarrow 166.32 \text{ cm}^3$$

$$\text{Volume of cone} = \left(\frac{1}{3}\right)\pi r^2 h$$

$$\Rightarrow \left(\frac{1}{3}\right) \times \left(\frac{22}{7}\right) \times 2.1 \times 2.1 \times 7$$

$$\Rightarrow 1 \times 22 \times 0.1 \times 2.1 \times 7$$

$$\Rightarrow 32.34 \text{ cm}^3$$

The approximate volume of that solid toy (in cm^3) = $19.404 + 166.32 + 32.34 = 218.064$

The approximate volume of that solid toy (in cm^3) = **218 cm^3**

64. Answer: b

Explanation:

Given:

The radius of a conical tent = 7 meters

Height = 10 m

Formula used:

C.S.A. of conical tent = $\pi r l$

$$l = \sqrt{(h^2 + r^2)}$$

Calculation:

$$\text{C.S.A. of conical tent} = \pi \times 7 \times \sqrt{(10^2 + 7^2)}$$

$$\Rightarrow \left(\frac{22}{7}\right) \times 7 \times \sqrt{149}$$

$$\Rightarrow 22 \times \sqrt{149}$$

$$\Rightarrow 22 \sqrt{149} \text{ m}^2$$

The length of canvas needed = C.S.A. of conical tent / canvas cloth of width

$$\Rightarrow (22 \sqrt{149}) / 2$$

$$\Rightarrow 11 \sqrt{149}$$

$$\Rightarrow 11 \times 12.2$$

$$\Rightarrow 134.2 \text{ m}$$

$\therefore$ The length of that canvas needed (in meters) is nearly 134.2 m

65. Answer: b

Explanation:

Given:

The radius of cylinder = Radius of cone = Radius of sphere

Height of cylinder = Height of cone = Height of sphere

Calculation:

$$\text{CSA of cylinder} = 2\pi rh$$

$$\text{CSA of cone} = \pi rl = \pi r \sqrt{h^2 + r^2}$$

$$\text{CSA of sphere} = 4\pi r^2$$

$$\text{CSA of cylinder} : \text{CSA of cone} : \text{CSA of sphere} = 2h : \sqrt{h^2 + r^2} : 4r$$

$$\because 2r = h \text{ (In sphere)}$$

$$\Rightarrow 2 \times 2r : \sqrt{4r^2 + r^2} : 4r$$

$$\Rightarrow 4r : r\sqrt{5} : 4r$$

$$\Rightarrow 4 : \sqrt{5} : 4$$

∴ The ratio of their respective curved surface areas is $4 : \sqrt{5} : 4$

66. Answer: a

Explanation:

The logic followed here is:

Barrel is a large size of container to store liquid items,

Vial is a small size of bottle to store liquid items.

So, Barrel : Vial, both are the containers to store liquid items.

Similarly,

Shovel : hoe, both are digging & lifting tools.

Hence, the correct answer is "Option 1".

67. Answer: a

Explanation:

The logic followed here is:

Countable and Uncountable are the antonyms word,

Similarly,

Fewer and imaginary are the antonyms word.

Hence, the correct answer is "Option 1".

68. Answer: c

Explanation:

The logic followed here is:

Forage and search are synonyms.

Similarly,

Flummox and confuse are synonyms.

Hence, the correct answer is **"Option 3"**.

69. Answer: d

Explanation:

The logic followed here is:

97 : 89 Both are the **consecutive Prime numbers**.

Similarly,

43 : 41 Both are the **consecutive Prime numbers**.

Hence, the correct answer is **"41"**.

70. Answer: a

Explanation:

The logic followed here is:

$$\sqrt{117} : \sqrt{13} \Rightarrow \sqrt{117 \div 9} = \sqrt{13}$$

Similarly,

$$72 : _ \Rightarrow 72 \div 9 = 8.$$

Hence, the correct answer is **"8"**.

71. Answer: d

Explanation:

The logic followed here is:

In 0 °Celsius is equals to 273 K.

Hence, the correct answer is **"273"**.

★ Additional Information

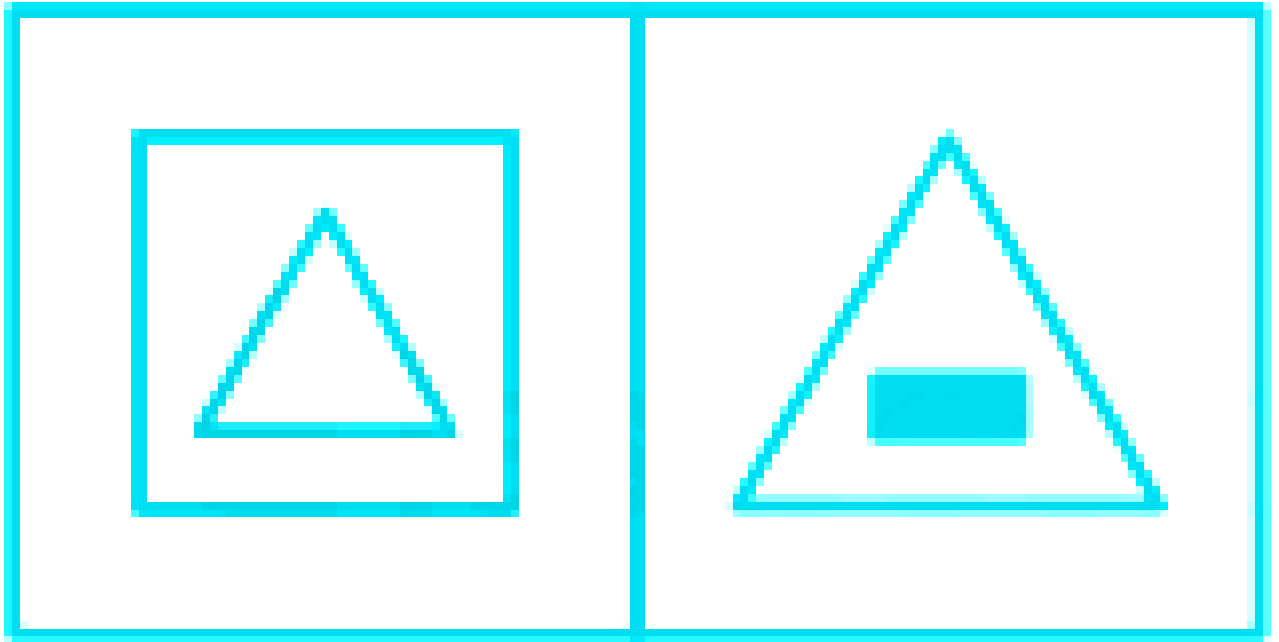
Water freezes at 273 kelvins = 0 degrees Celsius.

$$0\text{K} = -273.15\text{ }^{\circ}\text{C} = -459.67\text{ }^{\circ}\text{F}$$

72. Answer: d

Explanation:

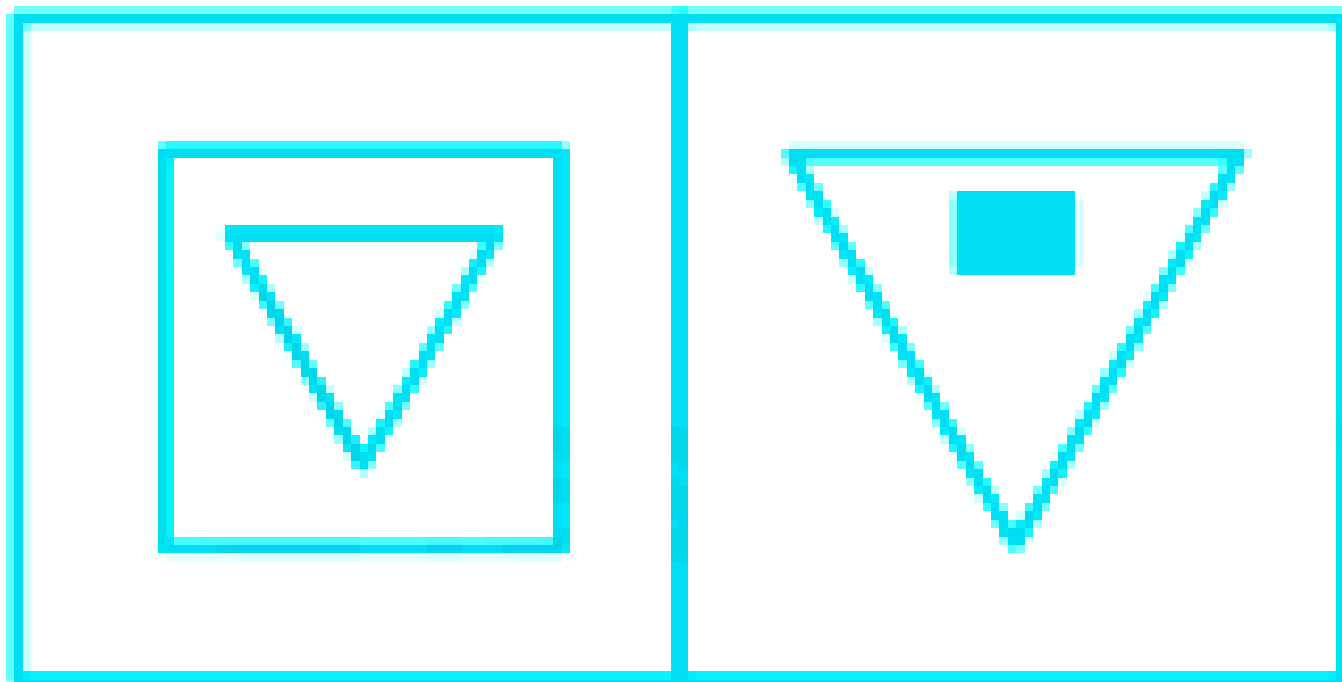
The logic followed here is:



- → In figure A, triangle is inside a quadrilateral while in figure B quadrilateral filled with black color is inside a triangle. Polygons swap their position and the polygon that is inside in figure B is colored in black.

Similarly,

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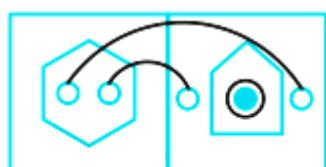
Hence, 'option 4' is the correct answer.

73. Answer: a

Explanation:

The logic followed here is:

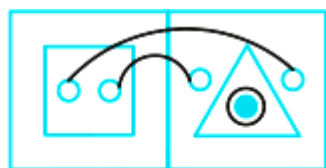
Figure A and B:



Number
of Sides
= 6

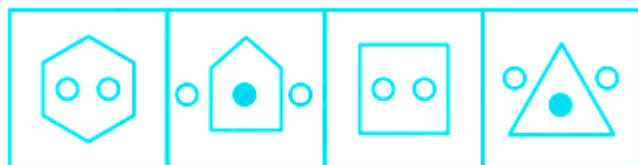
Number
of Sides=
 $6 - 1 = 5$

Similarly, figure C and D:



Number of Sides = 4
Number of Sides = 4 - 1 = 3

So, the complete series are:



Hence, the correct answer is "Option 1".

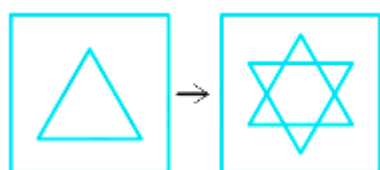
74. Answer: d

Explanation:

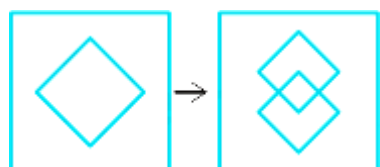
The logic followed here is:

Inner image gets double with one horizontal side.

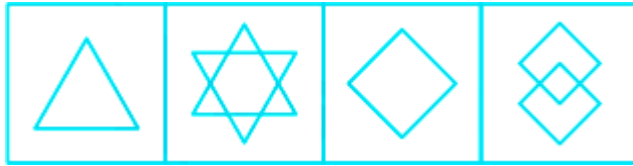
Here, A and B are:



Similarly, C and D:



So, the complete series will be:



Hence, the correct answer is **"Option 4"**.

75. Answer: c

Explanation:

The logic followed here is:

Figure A and B:



Similarly, C and D



So, the complete series will be:



Hence, the correct answer is **"Option 1"**.

76. Answer: a

Explanation:

Serial Number	Conditions	Fulfilment
(i)	The applicant's annual income should be at least Rs. 5 lakhs. He should be able to pay one- time membership fees of Rs. One lakh	No
(ii)	The conditions given in (i) are both relaxed upto 50% for former defence personnel	No
(iii)	For the children of existing members, the criterion of annual income is reduced to Rs. 3 lakhs and one time membership fees to Rs. 70,000.	Not Mentioned
(iv)	Judges working in courts presently are offered free membership and the stipulation of annual income is waived.	No
(v)	Irrespective of annual income, a national level sport personnal is eligible to be a member by paying Rs. 20,000 as membership fees.	Not Mentioned

So, Rakesh is not eligible for the membership.

Hence, the correct answer is **"Option 1"** .

77. Answer: a

Explanation:

Serial Number	Conditions	Fulfilment
(i)	The applicant's annual income should be at least Rs. 5 lakhs. He should be able to pay one- time membership fees of Rs. One lakh	Not Mentioned
(ii)	The conditions given in (i) are both relaxed upto 50% for former defence personnel	Not Mentioned
(iii)	For the children of existing members, the criterion of annual income is reduced to Rs. 3 lakhs and one time membership fees to Rs. 70,000.	Yes
(iv)	Judges working in courts presently are offered free membership and the stipulation of annual income is waived.	No
(v)	Irrespective of annual income, a national level sport personnal is eligible to be a member by paying Rs. 20,000 as membership fees.	Yes

Here, the annual income is not mentioned, so Kiran Gupta is not eligible for the membership.

Hence, the correct answer is "Option 1".

78. Answer: b

Explanation:

Serial Number	Conditions	Fulfilment
(i)	The applicant's annual income should be at least Rs. 5 lakhs. He should be able to pay one- time membership fees of Rs. One lakh	Yes
(ii)	The conditions given in (i) are both relaxed upto 50% for former defence personnel	No
(iii)	For the children of existing members, the criterion of annual income is reduced to Rs. 3 lakhs and one time membership fees to Rs. 70,000.	Not Mentioned
(iv)	Judges working in courts presently are offered free membership and the stipulation of annual income is waived.	No, He is retired
(v)	Irrespective of annual income, a national level sport personnal is eligible to be a member by paying Rs. 20,000 as membership fees.	Yes

So, Gauri Shankar is eligible under (i) and (v) only.

Hence, the correct answer is "Option 2".

79. Answer: d

Explanation:

Serial Number	Conditions	Fulfilment
(i)	The applicant's annual income should be atleast Rs. 5 lakhs. He should be able to pay one- time membership fees of Rs. One lakh	No
(ii)	The conditions given in (i) are both relaxed upto 50% for former defence personnel	No
(iii)	For the children of existing members, the criterion of annual income is reduced to Rs. 3 lakhs and one time membership fees to Rs. 70,000.	Yes
(iv)	Judges working in courts presently are offered free membership and the stipulation of annual income is waived.	No
(v)	Irrespective of annual income, a national level sport personnal is eligible to be a member by paying Rs. 20,000 as membership fees.	Not Mentioned

So, Preeti Singhal is eligible under (iii) only.

Hence, the correct answer is "Option 4" .

80. Answer: a

Explanation:

Serial Number	Conditions	Fulfilment
(i)	The applicant's annual income should be atleast Rs. 5 lakhs. He should be able to pay one- time membership fees of Rs. One lakh	Yes
(ii)	The conditions given in (i) are both relaxed upto 50% for former defence personnel	No
(iii)	For the children of existing members, the criterion of annual income is reduced to Rs. 3 lakhs and one time membership fees to Rs. 70,000.	Not Mentioned
(iv)	Judges working in courts presently are offered free membership and the stipulation of annual income is waived.	No
(v)	Irrespective of annual income, a national level sport personnal is eligible to be a member by paying Rs. 20,000 as membership fees.	Yes, But not needed

So, Shobha Sharma is eligible under (i) only.

Hence, the correct answer is "Option 1".

81. Answer: a

Explanation:

The logic followed here is:

TEACHER are written as XWPBRWM

Letter	T	E	A	C	H	E	R
Coded as	X	W	P	B	R	W	M

And, HIGHLY are written as RSNRDZ

Letter	H	I	G	H	L	Y
Coded as	R	S	N	E	D	Z

So, CHARITY will coded as:

Letter	C	H	A	R	I	T	Y
Coded as	B	R	P	M	S	X	Z

So, CHARITY will coded as BRPMSXZ.

Hence, the correct answer is "Option 1".

82. Answer: c

Explanation:

Alphabets	A	B	C	D	E	F	G	H	I	J	K	L	M
Positional value	1	2	3	4	5	6	7	8	9	10	11	12	13
Positional value	26	25	24	23	22	21	20	19	18	17	16	15	14
Alphabets	Z	Y	X	W	V	U	T	S	R	Q	P	O	N

The logic followed here is:

FURNITURE is coded as ERUTINRUF



Similarly, for FRAGRANCE



So, FRAGRANCE will be coded as ECNARGARF.

Hence, the correct answer is "Option 3".

83. Answer: d

Explanation:

The logic followed here is:

DIAMOND is coded as AFXJLKA

D I A M O N D
 $\downarrow -3 \downarrow -3 \downarrow -3 \downarrow -3 \downarrow -3 \downarrow -3$
 A F X J L K A

Similarly, the word of code JLKHBV is:

M O N K E Y
 $\downarrow -3 \downarrow -3 \downarrow -3 \downarrow -3 \downarrow -3$
 J L K H B V

So, MONKEY is coded as JLKHBV.

Hence, the correct answer is "Option 4".

84. Answer: d

Explanation:

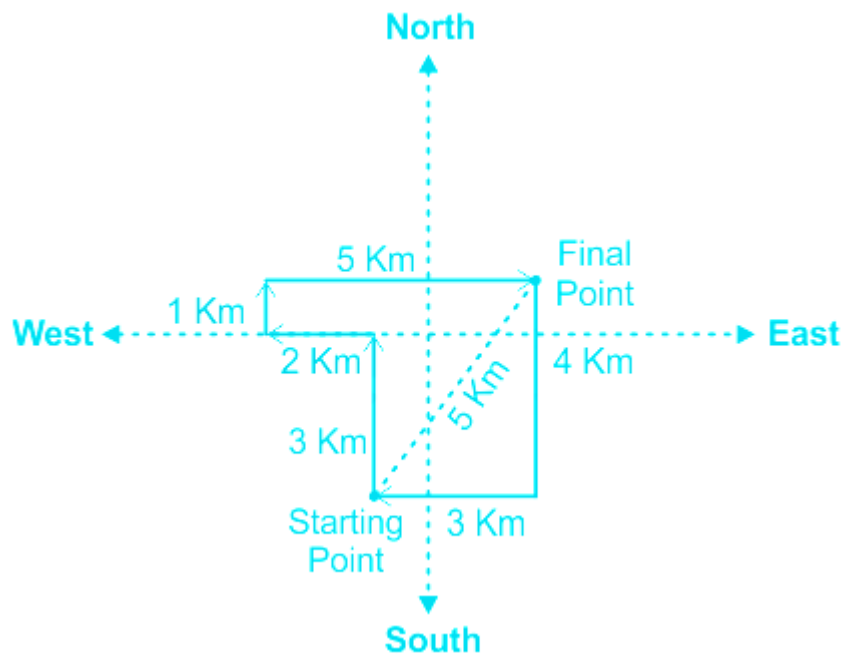
Code:	Q	P	M	N	Q	B
Decode/Key	h	e	i	g	h	t

Hence, 'height' is the correct answer.

85. Answer: b

Explanation:

According to given conditions,



Distance between the starting point and the final point = $\sqrt{(4^2 + 3^2)}km$

$$= \sqrt{(16 + 9)}km$$

$$= \sqrt{(25)}km$$

$$= 5 km$$

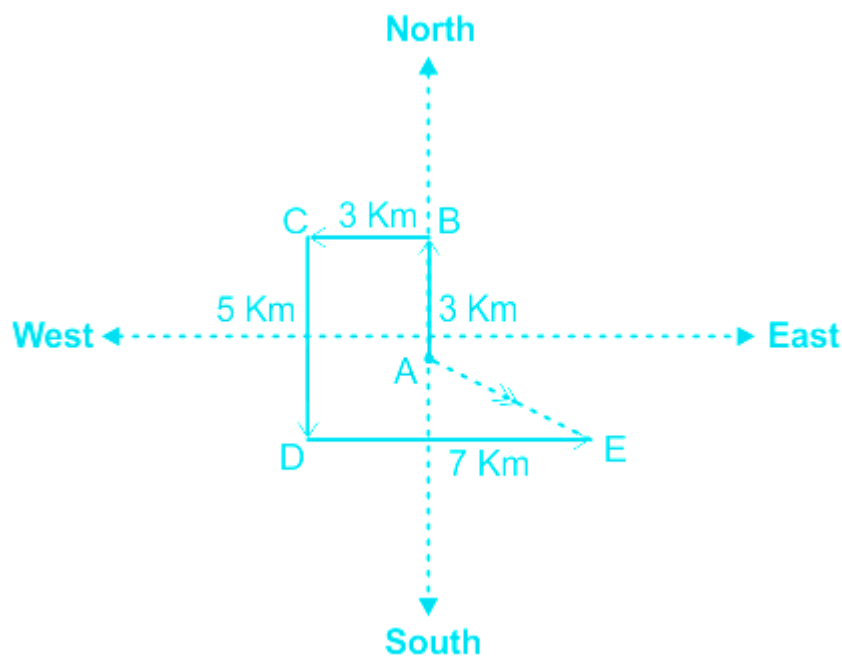
Hence, '5 km' is the correct answer.

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86. Answer: c

Explanation:

According to given conditions,



Clearly, E is to the South-East of B.

Hence, '**South-East**' is the correct answer.

87. Answer: a

Explanation:

(I) Prabhakar is heavier than Manoj and Kamal but lighter than Akash

Akash > Prabhakar > Manoj and Kamal

Akash is the heaviest.

(II) Manoj is lighter than Prabhakar and Akash but heavier than Kamal

Prabhakar > Manoj

Akash > Kamal

From statement II, we cannot find the heaviest person.

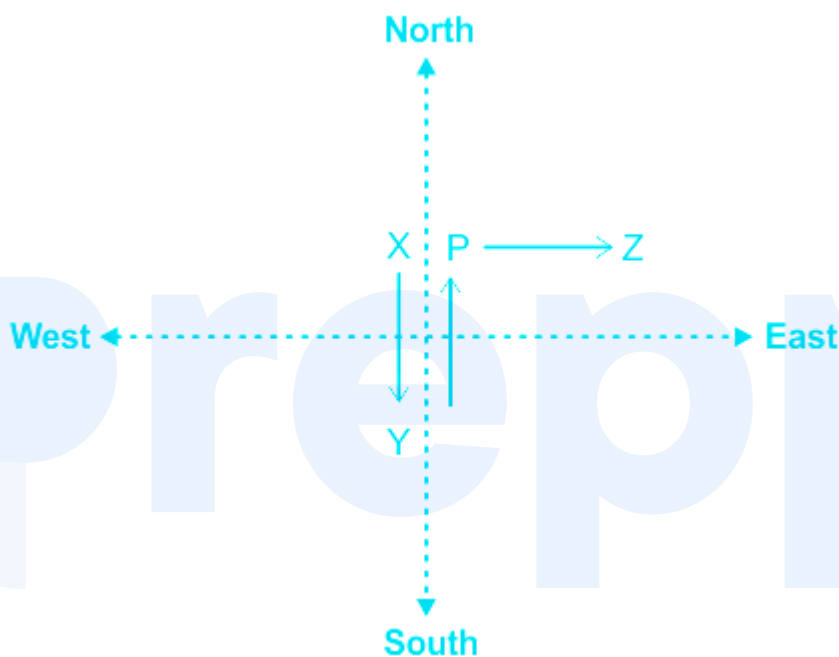
Clearly, the statement I alone can give the answer.

Hence, ' (1) ' is the correct answer.

88. Answer: c

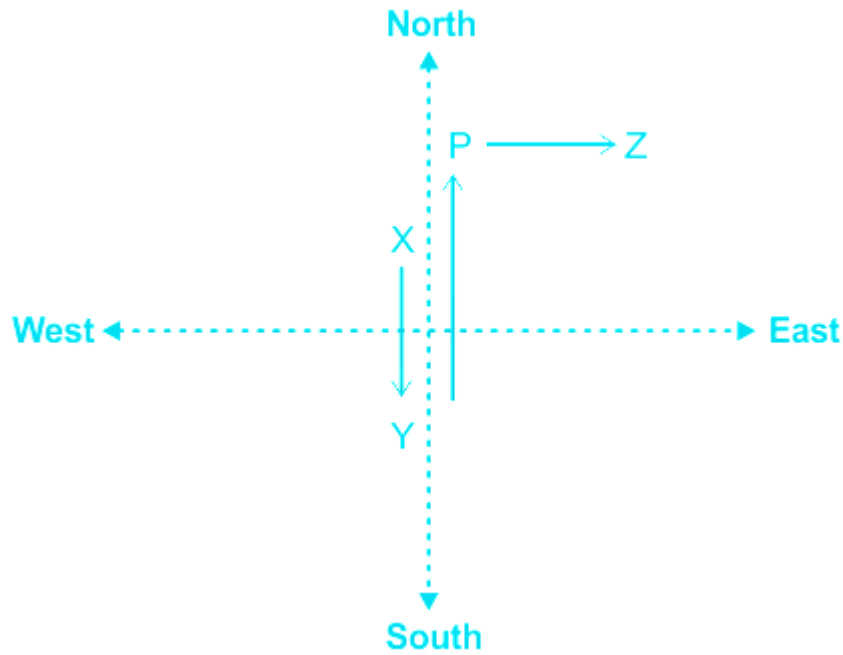
Explanation:

(I) Y is to the South of X, Z is to the East of P and P is to the North of Y

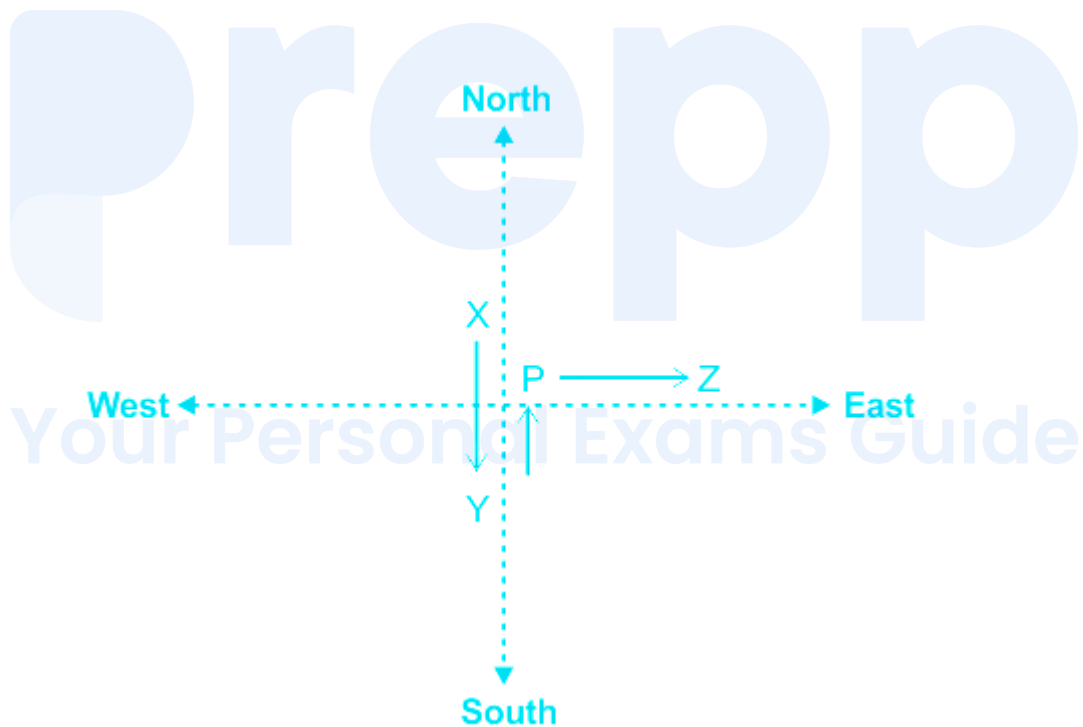


or

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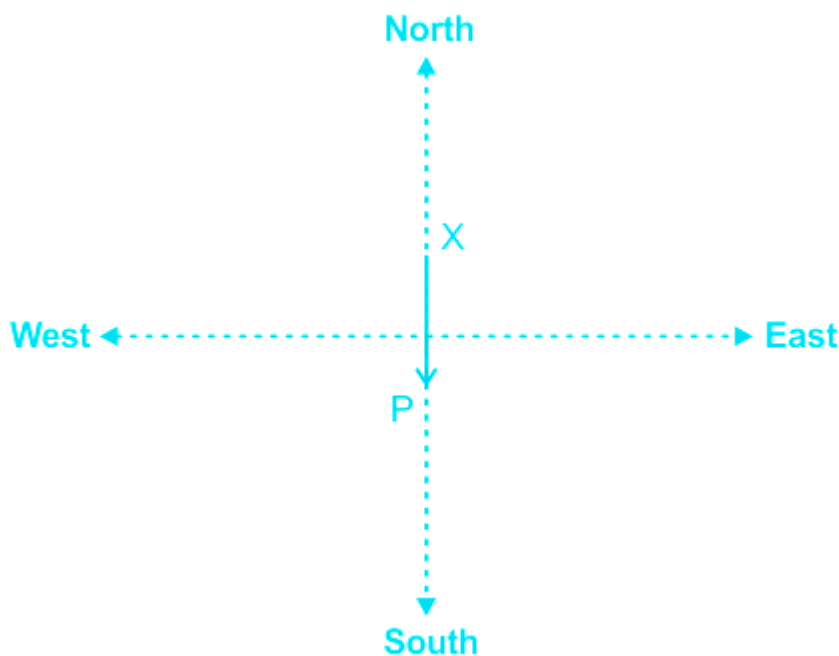


or



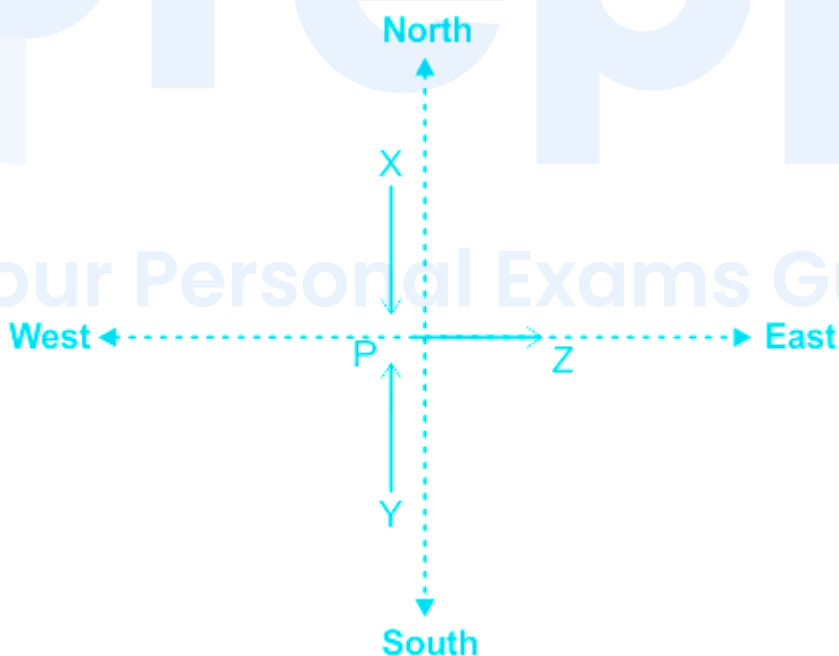
We cannot find Z is in which direction with respect to X.

(II) P is to the South of X



We cannot find Z is in which direction with respect to X.

From (I) and (II), we get:



Z is to the South-East of X.

Clearly, the statement I and II together are necessary to give the answer.

Hence, ' (3) ' is the correct answer.

89. Answer: d

Explanation:

Total Students = 40

(I) There are ten students between Nitin and Naveen – Nitin's rank can't be defined from this statement.

(II) Naveen is twentieth from the top – There is no Nitin's rank given in this statement, so Nitin's rank can't be defined from this statement.

On combining Both Statements:

We can't find the rank of Nitin's from the Top, because there is no information given about Nitin's position with the respect of Naveen's position.

So, statement I and II together also are not sufficient to answer.

Hence, the correct answer is "Option 4".

90. Answer: c

Explanation:

(I) It was 10% more than the boxes sold on the earlier day i.e, Sunday – From this statement number of gift boxes can't be defined.

(II) Every third visitor to the shop bought the box and there were 1500 visitors on Sunday – This statement shows the data of Sunday only, so not sufficient.

On combining both statements:

Every third visitor to the shop bought the box and there were 1500 visitors on Sunday – So, on Sunday 500 boxes were sold ($1500/3 = 500$)

It was 10% more than the boxes sold on the earlier day i.e, Sunday - 10% of 500 + 500 $\Rightarrow$ 50 + 500 = 550.

So, statement I and II together are necessary to give the answer.

Hence, the correct answer is "Option 3".

91. Answer: a

Explanation:

The Correct Answer is If both (A) and (R) are true and (R) is the correct explanation of (A)

★ Key Points

- Subhash Chandra Bose, also known as **Netaji** was born in the year **1897** and **died** in the year **1945**.
- He was known for his **militant approach** to the independence of India.

Subhash Chandra Bose and Indian National Congress

- He joined the **Non-Cooperation Movement**, which Mahatma Gandhi founded and turned into a **potent non-violent movement**.
- Mahatma Gandhi recommended he collaborate with **Chittaranjan Das**, who later served as his **political mentor**, during the **agitation**.
- Following that, he worked as a **youth educator and volunteer commander** for the Bengal Congress.
- He founded the **"Swaraj"** newspaper.
- After being **released** from prison in **1927**, Netaji Subhash Chandra Bose joined the **Congress party** as **general secretary** and fought for independence with **Jawaharlal Nehru**.
- After being elected **president of the Indian National Congress** in **1938**, he established a **national planning committee** and developed a wide **industrialization agenda**.

- However, **Gandhian economic theory**, which stuck to the **idea of cottage industries** and profiting from the **utilization of the nation's own resources**, did not agree with this.
- When Subhash Chandra Bose won his reelection bid in **1939** over a **Gandhian opponent**, it served as vindication for him. Hence Assertion (A) is correct.
- Nevertheless, the **"rebel president"** felt compelled to step down because **Gandhi didn't back him**.
- Subhash Chandra Bose, who was working for India's independence, fled India in **1941** and went to **Germany**.
- He arrived in **Singapore** in **1943** to head the **Indian Independence League** and develop the **Indian National Army** (Azad Hind Fauj) into a powerful tool for India's freedom.
- About 45,000 soldiers made up the Azad Hind Fauj, including **Indian prisoners of war** and Indians who had settled in various Southeast Asian nations. Hence Reason (R) is correct.

92. Answer: c

Explanation:

The Correct Answer is option 3

★ Key Points

- The climate type in India is **Tropical Monsoon type**
- The most **dominant factor** which affects the **climate of India** is the **monsoon winds**.
- These are **seasonal reversal winds** and India remains under the **influence of these winds** for a considerable part of a year.
- Though the **sun's rays are vertical** over the central part of India during **mid-June**, **the summer season** ends in India by the end of May.
- It is because the onset of the **southwest monsoon** brings **down the temperature** of the entire India and causes **moderate to heavy rainfall** in many parts of the country.

- Similarly, the climate of southeast India is also influenced by the **northeast monsoon**.
- Hence **Assertion is correct**.
- Latitudinally, India lies between **8°4'N and 37°6'N latitudes**.
- The **Tropic of Cancer** divides the country into two equal halves thus India is not located exactly between the **tropical latitudes** **Hence Reason is incorrect**
- The area is located to the **south of the Tropic of cancer** and **experiences high temperatures** and no severe **cold season** throughout the year whereas, the areas to the north of this **parallel enjoy the subtropical climate**.

93. Answer: d

Explanation:

The Correct Answer is If (A) is false but (R) is true

★ Key Points

The Mercury

- Mercury is the **nearest planet** to the sun. **Hence Assertion (A) is false**
- It is the **smallest planet** in the solar system. **Hence Reason (R) is true**
- It **does not** have any **satellite**.
- It rotates on its own axis in **58.65 earth days** while it takes **88 Earth days** to complete one **revolution around the sun**.
- Mercury is **0.4 astronomical units** away from the Sun.
- The sunlight takes **3.2 minutes** to travel from the Sun to Mercury.
- Mercury is the **second hottest planet** though it is nearest to the sun.

★ Additional Information

- A solar system consists of a star at the **center and eight planets, moons, asteroids, comets, and meteoroids** that revolve around it.
- The eight planets, namely **Mercury, Venus, Earth, Mars, Jupiter, Saturn, Uranus, and Neptune**, revolve around the sun in fixed elliptical paths known as 'orbits'.

- Most stars host their own planets. So there are **billions of other solar systems in the Milky Way galaxy alone**

The Earth

- Earth is the **third nearest planet** to the sun.
- It is the **fifth largest planet** in the solar system.
- The Earth's orbit **lies between the orbits of Venus and Mars**.
- It takes **23 hours 56 minutes and 4 seconds** for the earth to complete one rotation on its own axis.
- The Earth takes **365.25 days** to complete one revolution around the Sun.
- Earth's surface temperature varies from **- 88° to 58 °C** and it is the densest planet in the solar system.
- The Earth is a unique planet because of its **distance from the sun ,its motions ,its atmosphere with oxygen , its presence of water , and its moderate temperature.**
- The earth is neither **too close nor too far from the sun.**
- It is the only known planet to **support life.**
- It is also known as the '**Blue Planet**' because of the presence of water.
- Earth has only **one natural satellite** called the **Moon**.
- The sunlight takes about **8.3 minutes** to **reach the earth**.

94. Answer: a

Explanation:

The correct Answer is **If both (A) and (R) are true and (R) is the correct explanation of (A)**

★ Key Points

- Inflation in economics can be defined as the **rate at which the prices of goods and services rise.**Hence the reason is correct
- In other words, it is the rate at which **purchasing power** of a consumer **decreases.**

- With the same amount of money, if one is buying **less quantity** of goods, it is termed an **increase in the inflation rate**.
- The most commonly used indexes to **measure** it are **Consumer Price Index and the Wholesale Price Index**.
- Inflation is the major problem in india.Hence Assesrtion is correct

★ Additional Information

Types of Inflation

- There are 3 types of inflation: **demand-pull, cost-push, and built-in inflation**.
- When an **increase** in the **demand for goods and services** causes a substantial increase in the price, it is known as **Demand pull inflation**.
- An increase in the **cost of production**, such as **wages, raw materials**, etc., causes an **increase in prices**, creating **cost-push inflation**.
- The impact of the **increased cost of living** on the salary of employees is an example of **built-in inflation**.

Effects of inflation

- Inflation has both **positive and negative impacts**.
- Due to it, some groups face losses while some groups **face gains**.
- As a result of high prices, the product **demand decreases**, which hampers **production**.
- Imports **increase** and exports **decrease**.
- However, **sudden inflation** is harmful to the **overall economy**.

95. Answer: c

Explanation:

The correct answer is If (A) is true but (R) is false.

Due to high temperature and pressure, metals are present in molten state inside the earth. Hence the **assertion is true**.

The earth reflects the sun's ray. It does not absorb the sun's rays. Hence the **reason is false**.

Hence the correct answer is **option 3**.

96. Answer: c

Explanation:

Given: Monday to Sunday

Seven Airlines namely Jet Airways, British Airways, Delta, Quantas, Emirates, Lufthansa and Air India operate flights to London.

1) Delta flies on Wednesday.

Monday	
Tuesday	
Wednesday	Delta
Thursday	
Friday	
Saturday	
Sunday	

2) Air India flies the day next to British Airways.

3) Two airlines fly between the days British airways and Emirates fly.

4) 5) Emirates does not fly on Sunday.

5) British airways does not fly on Monday and Friday.

So, according to these statements British airways will fly on Thursday only.

Monday	Emirates
Tuesday	
Wednesday	Delta
Thursday	British airways
Friday	Air India
Saturday	
Sunday	

6) Qantas flies a day before Lufthansa flies.

Monday	Emirates
Tuesday	
Wednesday	Delta
Thursday	British airways
Friday	Air India
Saturday	Qantas
Sunday	Lufthansa

The remaining flight will fly on Tuesday.

Monday	Emirates
Tuesday	Jet Airways
Wednesday	Delta
Thursday	British airways
Friday	Air India
Saturday	Quantas
Sunday	Lufthansa

Here, Jet Airways fly on Tuesday.

Hence, the correct answer is **"Tuesday"**.

97. Answer: c

Explanation:

Given: Monday to Sunday

Seven Airlines namely Jet Airways, British Airways, Delta, Quantas, Emirates, Lufthansa and Air India operate flights to London.

1) Delta flies on Wednesday.

Monday	
Tuesday	
Wednesday	Delta
Thursday	
Friday	
Saturday	
Sunday	

2) Air India flies the day next to British Airways.

3) Two airlines fly between the days British airways and Emirates fly.

4) 5) Emirates does not fly on Sunday.

5) British airways does not fly on Monday and Friday.

So, according to these statements British airways will fly on Thursday only.

Monday	Emirates
Tuesday	
Wednesday	Delta
Thursday	British airways
Friday	Air India
Saturday	
Sunday	

6) Quantas flies a day before Lufthansa flies.

Monday	Emirates
Tuesday	
Wednesday	Delta
Thursday	British airways
Friday	Air India
Saturday	Quantas
Sunday	Lufthansa

The remaining flight will fly on Tuesday.

Monday	Emirates
Tuesday	Jet Airways
Wednesday	Delta
Thursday	British airways
Friday	Air India
Saturday	Quantas
Sunday	Lufthansa

Here, Number of flights operating between Lufthansa and Delta is 3.

Hence, the correct answer is "Three".

98. Answer: a

Explanation:

Given: Monday to Sunday

Seven Airlines namely Jet Airways, British Airways, Delta, Quantas, Emirates, Lufthansa and Air India operate flights to London.

1) Delta flies on Wednesday.

Monday	
Tuesday	
Wednesday	Delta
Thursday	
Friday	
Saturday	
Sunday	

2) Air India flies the day next to British Airways.

3) Two airlines fly between the days British airways and Emirates fly.

4) 5) Emirates does not fly on Sunday.

5) British airways does not fly on Monday and Friday.

So, according to these statements British airways will fly on Thursday only.

Monday	Emirates
Tuesday	
Wednesday	Delta
Thursday	British airways
Friday	Air India
Saturday	
Sunday	

6) Qantas flies a day before Lufthansa flies.

Monday	Emirates
Tuesday	
Wednesday	Delta
Thursday	British airways
Friday	Air India
Saturday	Qantas
Sunday	Lufthansa

The remaining flight will fly on Tuesday.

Monday	Emirates
Tuesday	Jet Airways
Wednesday	Delta
Thursday	British airways
Friday	Air India
Saturday	Qantas
Sunday	Lufthansa

Here, The airlines that operate its flight on Friday is Air India.

Hence, the correct answer is " **Air India** ".

99. Answer: b

Explanation:

Given: Monday to Sunday

Seven Airlines namely Jet Airways, British Airways, Delta, Quantas, Emirates, Lufthansa and Air India operate flights to London.

1) Delta flies on Wednesday.

Monday	
Tuesday	
Wednesday	Delta
Thursday	
Friday	
Saturday	
Sunday	

2) Air India flies the day next to British Airways.

3) Two airlines fly between the days British airways and Emirates fly.

4) 5) Emirates does not fly on Sunday.

5) British airways does not fly on Monday and Friday.

So, according to these statements British airways will fly on Thursday only.

Monday	Emirates
Tuesday	
Wednesday	Delta
Thursday	British airways
Friday	Air India
Saturday	
Sunday	

6) Quantas flies a day before Lufthansa flies.

Monday	Emirates
Tuesday	
Wednesday	Delta
Thursday	British airways
Friday	Air India
Saturday	Quantas
Sunday	Lufthansa

The remaining flight will fly on Tuesday.

Monday	Emirates
Tuesday	Jet Airways
Wednesday	Delta
Thursday	British airways
Friday	Air India
Saturday	Quantas
Sunday	Lufthansa

Now, Due to some technical reasons,

Delta postpones its flight to Sunday and all the flights scheduled from Thursday to Sunday then arrangement will be:

Monday	Emirates
Tuesday	Jet Airways
Wednesday	British airways
Thursday	Air India
Friday	Quantas
Saturday	Lufthansa
Sunday	Delta

Here, Quantas will fly on Friday now.

Hence, the correct answer is " **Quantas** ".

100. Answer: c

Explanation:

Given: Monday to Sunday

Seven Airlines namely Jet Airways, British Airways, Delta, Quantas, Emirates, Lufthansa and Air India operate flights to London.

1) Delta flies on Wednesday.

Monday	
Tuesday	
Wednesday	Delta
Thursday	
Friday	
Saturday	
Sunday	

2) Air India flies the day next to British Airways.

3) Two airlines fly between the days British airways and Emirates fly.

4) 5) Emirates does not fly on Sunday.

5) British airways does not fly on Monday and Friday.

So, according to these statements British airways will fly on Thursday only.

Monday	Emirates
Tuesday	
Wednesday	Delta
Thursday	British airways
Friday	Air India
Saturday	
Sunday	

6) Quantas flies a day before Lufthansa flies.

Monday	Emirates
Tuesday	
Wednesday	Delta
Thursday	British airways
Friday	Air India
Saturday	Quantas
Sunday	Lufthansa

The remaining flight will fly on Tuesday.

Monday	Emirates
Tuesday	Jet Airways
Wednesday	Delta
Thursday	British airways
Friday	Air India
Saturday	Quantas
Sunday	Lufthansa

Here, Jet Airways is related to British Airways

Air India is related to Lufthansa

Then Emirates is related to Delta.

Hence, the correct answer is "Delta".

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