



IBPS RRB Office Assistant (Prelims) 2019

MOCKBANK

Directions (1-5): Study the following information carefully to answer the given questions:

Seven persons are lives in building which have seven floors. The bottom most floor is numbered as 1, and the floor above 1 is numbered as 2 and so on till the topmost floor is numbered as 7.

Not more than three persons live above A. B lives immediately above A. Two person lives between B and C. D lives immediately above G and lives in even numbered floor. F lives above E. F doesn't lives in 5th floor.

1) How many person lives between F and C?

- a) One
- b) Two
- c) Three
- d) More than Three
- e) None

2) What is the position of C with respect to the top of the floor?

- a) 6th
- b) 4th
- c) 3rd
- d) 5th
- e) 2nd

If all the persons are arranged alphabetical order from top most floor to bottom most floor, then how many persons floor remains unchanged?

- a) 1
- b) 2
- c) 3
- d) More than three
- e) None

3) If F is related to A, similarly E is related to D in the given arrangement, In the same way C is related to ?

- a) E
- b) D
- c) G
- d) B
- e) None of those given as option

4) Which of the following is true in the given arrangement?

- a) E lives is 4th floor
- b) Two persons are lives between B and D
- c) Number of person's lives above D is same as below A
- d) Four persons are lives above C
- e) Both (a) and (d)

Directions (6–9): Read the conclusions and then decide which of the given conclusions logically follows from the given statements, disregarding commonly known facts.

Give answer:

- (a) If only conclusion I follows
- (b) If only conclusion II follows
- (c) If either conclusion I or II follows
- (d) If neither conclusion I nor II follows
- (e) If both conclusion I and II follow

5) Statements

Only a few well are Mats
All Pillows are Mats

Conclusions

- I. All well Can Never be Pillow
- II. At least Some Pillows are well

6) Statements

All Bamboo are Stick
No Bamboo is a Duster

Conclusions

- I. No stick is a Duster
- II. Some Stick are Duster

7) Statements

Only a few Bottles are Lamps
No Bottle is ship

Conclusions

- I. Some Ship are definitely not Lamps
- II. All Lamp can never be Ship

8) Statements

Only a few Boxes are Book
All Books are Pens

Conclusions

- I. Some Boxes are Pens
- II. All Pen can never be Boxes

9) How many such pairs of letters are there in the meaningful word "MINUTE" each of which has as many letters between them in the word as in the English alphabet both forward and backward?

- a) None
- b) One
- c) Two
- d) Three
- e) More than three

Directions (11-15): Study the following information carefully to answer the given questions:

Certain numbers of persons are sitting in a row facing north. M sits fourth to the right of S. Five persons are sitting between M and X. X sits third to the left of P. No one sits to the right of N, who sits immediate right of P. Four persons are sitting between S and U. T sits one of the positions to the left of S. The number of persons sitting between M and U are same as between S and T. Q is second from one of the extreme ends. Not more than two persons sit between Q and U.

10) Who sits immediate right of T?

- a) S
- b) U

- c) Q
- d) P
- e) No one

11) As many person sits to the left of U is same as to the right of_____?

- a) X
- b) U
- c) P
- d) T
- e) S

12) How many persons are sits between M and N?

- a) 8
- b) 7
- c) 11
- d) 4
- e) 9

13) If A sits exactly between S and M then what is the position of X with respect to A?

- a) Fourth to the left
- b) Immediate right
- c) Eighth to the right
- d) Seventh to the left
- e) Fifth to the left

14) How many persons are sitting in a row?

- a) 23
- b) 24
- c) 17
- d) 19
- e) 21

Directions (16-19): Study the following information carefully to answer the given questions:

Seven persons are sitting in circular table facing centre. Only one person sits between R and P. T sits third to the right of R. V sits third to the left of S who is not an immediate neighbor of P. Q and U are not immediate neighbors. U sits second to the left of V.

15) Who sits immediate left of R?

- a) The one who sits immediate right of U
- b) Q
- c) T
- d)The one who sits immediate right of P
- e) None of those given as option

16) How many persons sits between U and V when counted to the left of V?

- a) One
- b) Two
- c) Three
- d) None
- e) More than three

17) What is the position of Q with respect to P?

- a) Third to the left
- b) Third to the right
- c) Immediate left
- d) Second to the right
- e) Fourth to the right

18) If all the persons are arranged alphabetical order starting from P in clockwise direction, then how many persons remains unchanged from his previous position (Excluding P)?

- a) One
- b) Two
- c) Three
- d) More than three
- e) None

19) In a certain coded language,

“He will Say” is coded as “1 3 9”

“Say To Him” is coded as “3 5 2”

“He May Do” is coded as “8 7 9”

Then, What is the code for “Will”?

- a) 1
- b) 7
- c) 3
- d) 9
- e) Can't be determined

Direction (21-24): In these questions, a relationship between different elements is shown in the statements.

The statements are followed by two conclusions.

Give answer:

- a) If only conclusion I follows.
- b) If only conclusion II follows
- c) If either conclusion I or II follows
- d) If neither conclusion I nor II follows
- e) If both conclusion I and II are follows

21). Statement: $P \geq E \geq Z; R \leq E$

Conclusion:

- I) $R < P$
- II) $P = R$

22). Statement: $S < V > A > T > Y$

Conclusion:

- I) $Y < V$
- II) $A > S$

23) Statement: $K \leq Q < F \geq N; R \geq F$

Conclusion:

- I) $N < K$
- II) $R > Q$

24) Statement: $E \geq B = J \geq K > D$

Conclusion:

- I) $K \geq E$
- II) $D > B$

25) Find the odd one?

- a) H K J I
- b) M O N L
- c) A D C B
- d) P S R Q
- e) V Y X W

Directions (26-30): Study the following information carefully to answer the given questions:

Ten persons are sitting in two parallel rows such that J, K, L, M, and N are sitting in Row 1, facing south and A, B, C, D, and E, are sitting in Row 2 facing north.

J sits second from the extreme end of the row. Only one person sits between D and the one who faces J. Two persons sits between B and E. M sits second to the left of the one who faces B. K sits third to the right of the one who faces A. L doesn't faces B.

26) Who sits immediate left of N?

- a) M
- b) The one who faces C
- c) R
- d) The one who faces D
- e) None of those given as option

27) Who sits second to the left of the one who sits opposite to L?

- a) B
- b) D
- c) C
- d) E
- e) None of those given as option

28) Who among them sits at extreme end of the row?

- a) N, M
- b) B, J
- c) L, A
- d) B, N
- e) Both (c) and (d)

29) What is the position J with respect to N?

- a) Second to the left
- b) Immediate left
- c) Immediate Right

- d) Second to the right
- e) Third to the left

30) Four of the five among the following are similar in such a way to form a group, which one of the following doesn't belong to the group?

- a) N, D
- b) B, K
- c) J, A
- d) M, D
- e) C, L

Directions (31-34): Study the following information carefully to answer the given questions:

**8 H E \$ 1 3 P T 4 # X Y 9 @ 5 A
S ^ C 9 7 D * H J U ! M 1**

31) How many such numbers are there in the above arrangement, each of which is immediately preceded by a symbol and immediately followed by a number?

- a) One
- b) Two
- c) Three
- d) Four
- e) None

32) Which of the following elements is third to the left of the element which is ninth from the right end?

- a) ^
- b) S
- c) C

- d) A
- e) None of these

33) Which of the following makes first element is exactly between second and third element?

- a) DCU
- b) !JM
- c) #YP
- d) 1EP
- e) 95A

34) If all the numbers are removed from the arrangement, then which of the following pairs of elements is exactly in the middle?

- a) @, A
- b) A, S
- c) A, ^
- d) C, ^
- e) None of these

Directions (35-37): Study the following information carefully to answer the given questions:

Point S is 14m to the south of point T.
Point P is 12m to the west of point S.
Point C is 7m to the south of point D which is 28m to the East of point T. Point B is 10m to the south of point A and 14m to the West of point C.

35) What is the direction of P with respect to A?

- a) South East
- b) South West

- c) East
- d) West
- e) North West

36) If point X lies 3m to the south of point A, then what is distance between T and X?

- a) 7m
- b) 14m
- c) 21m
- d) 20m
- e) None of those given as option

37) If Point G exactly to the east of point S and exactly to the south of point C, then which of the following is true?

- a) The distance between Point G and point C is 7m
- b) Point G is in Southeast direction with respect to point T
- c) Point D is exactly to the north of point G
- d) Point P and Point G are in straight Line
- e) All are true

Directions (38-40): Study the following information carefully to answer the given questions:

Six Boxes A, B, C, D, E and F are in different weights but not necessary in the same order. Only two boxes are lighter than A. Box F is lighter than C and D. Box D is not the heaviest one. Box B is lighter than F but Heavier than E. The Second heaviest box

weight is 119kg and the second lightest box weight is 56kg.

38) How many boxes are heavier than F?

- a) One
- b) Two
- c) Three
- d) More than Three
- e) Cannot be determined

39) If $B+A = 120\text{kg}$, and $D+F$ is 200kg then what is the sum of weight of box A and F?

- a) 135 kg

- b) 150 kg
- c) 145 kg
- d) 120 kg
- e) 180 kg

40) If Box G is exactly lies between D and B. Then what will be the possible weight of G?

- a) 60kg
- b) 55kg
- c) 120kg
- d) 135kg
- e) 48kg

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Directions (1-5):

Solution:

Floor	Person
7	F
6	B
5	A
4	E
3	C
2	D
1	G

1) Answer: C

2) Answer: D

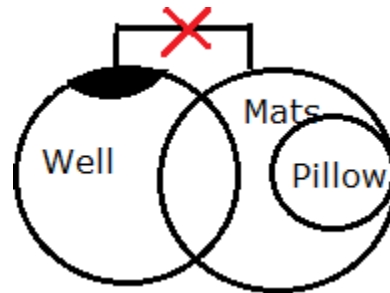
3) Answer: B

4) Answer: C

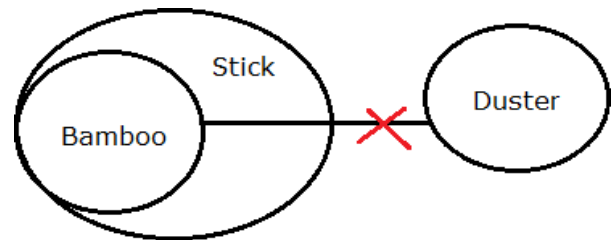
5) Answer: E

Directions (6-9):

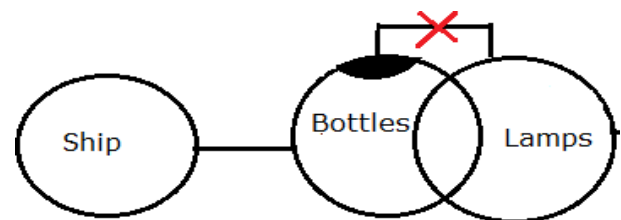
6) Answer: A



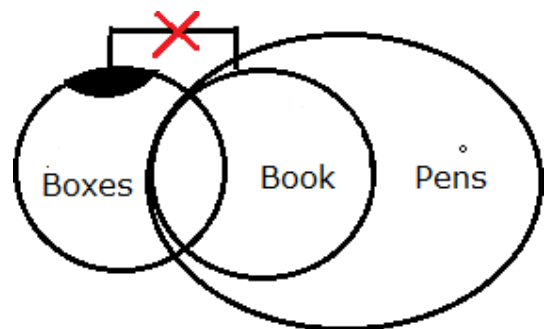
7) Answer: C



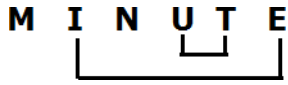
8) Answer: B



9) Answer: A



10) Answer: C



Directions (11-15):

Solution:



11) Answer: C

12) Answer: A

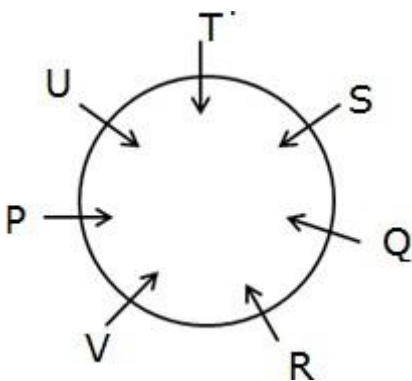
13) Answer: E

14) Answer: C

15) Answer: B

Directions (16-19):

Solution:



16) Answer: D

17) Answer: A

18) Answer: B

19) Answer: A

20) Answer: A

Direction (21-24):

21) Answer: C

22) Answer: A

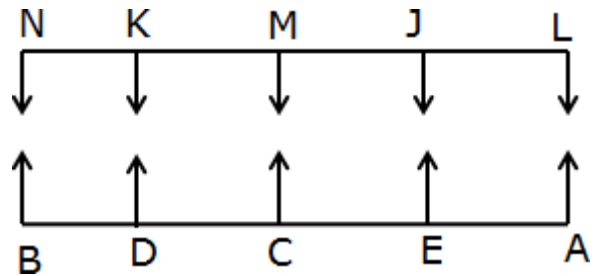
23) Answer: B

24) Answer: D

25) Answer: B

Directions (26-30):

Solution:



26) Answer: D

27) Answer: C

28) Answer: E

29) Answer: E

30) Answer: E

Direction (31-34):

31) Answer: A

\$ 1 3 (There is only one such combination in the arrangement)

32) Answer: A

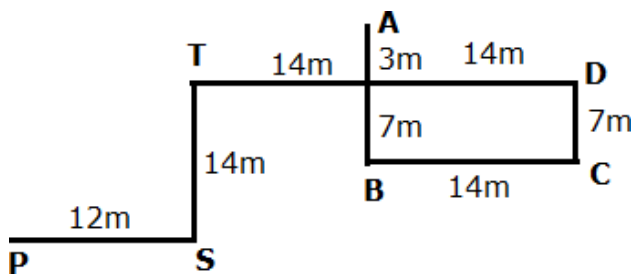
33) Answer: D

34) Answer: B

H E \$ P T # X Y @ A S ^ C D * H J U ! M

Directions (35-37):

Solution:



Answers:

35) Answer: B

36) Answer: B

37) Answer: E

Direction (38-40):

C > D (119kg) > F > A > B (56kg) > E

38) Answer: B

39) Answer: C

40) Answer: A

QUANTITATIVE APPTITUDE

MockBank

Directions (1 - 4): Find the wrong number in the given series

1) 1, 2, 5, 16, 65, 328, 1957

- a) 65
- b) 1957
- c) 328
- d) 16
- e) 5

2) 4, 11, 25, 46, 74, 129, 151

- a) 151
- b) 74
- c) 46
- d) 129
- e) 25

3) 84, 96, 83, 95, 80, 94, 81

- a) 81
- b) 80
- c) 94
- d) 95
- e) 83

4) 3, 5, 8, 17, 33, 58, 94

- a) 5
- b) 8
- c) 17
- d) 33
- e) 58

5) A's salary is one – third of B's salary and each of them spend 15%

of their salary for rent and remaining amount they had together is Rs. 40800, then find A's rent amount

- a) Rs.1200
- b) Rs.1500
- c) Rs.1600
- d) Rs.1800
- e) Rs.1080

Directions (6 - 10): Study the following information carefully and answer the given questions.

The table shows the number of cell phones serviced by four different shops (A, B, C and D) in four different months (May, June, July and August).

	A	B	C	D
May	424	668	525	216
June	516	454	252	309
July	328	712	363	439
August	224	384	486	618

6) What is the difference between the total cell phones serviced by shop A in all the months together to that of the total cell phones serviced by shop C in all the months together?

- a) 164
- b) 153

- c) 149
 d) 134
 e) None of these

7) Number of x model cell phones serviced by shop B and C in June month is 48 and 64 respectively. What is the difference between the cell phones serviced by shop B and C in the same month other than the x model cell phones?

- a) 218
 b) 296
 c) 323
 d) 418
 e) None of these

8) Find the average number of cell phones serviced by shop A in all the given months together.

- a) 299
 b) 217
 c) 319
 d) 423
 e) 373

9) What is the ratio of the total number of cell phones serviced by shop A and B in July together to that of the total number of cell phones serviced by shop C and D in August together?

- a) 65: 69
 b) 63: 62
 c) 59: 57
 d) 43: 49

- e) 39: 41

10) Total number of cell phones serviced by all the shops together in July is approximately what percentage of the total number of cell phones serviced by all the shops together in August?

- a) 190%
 b) 80%
 c) 70%
 d) 108%
 e) 132%

Directions (11 - 20): What value should come in the place of questions mark in the given questions?

11) $2^3 * 3^2 \div (90 \div ?) = \sqrt{64}$

- a) 15
 b) 12
 c) 10
 d) 20
 e) 24

12) $(2 \frac{1}{4} \div 4) * 8 = ? * 10$

- a) 0.30
 b) 0.45
 c) 0.84
 d) 0.36
 e) 0.24

13) $(? - 0.5) \div 0.2 = 120 \div 2$

- a) 15
 b) 25
 c) 36
 d) 6.25
 e) 12.5

14) 80% of $(1.5 * 4 \div ?) = 24$

- a) 0.4
- b) 0.6
- c) 2
- d) 20
- e) 0.2

15) $\sqrt{5929} + \sqrt{8464} = x^2$

- a) 13
- b) 12
- c) 11
- d) 16
- e) 15

16) $5/8$ of $4/9$ of $3/5$ of 222 = x

- a) 43
- b) 29
- c) 41
- d) 37
- e) 39

17) $\sqrt{(x + 4)} = 1/4 * 8^2$

- a) 288
- b) 324
- c) 252
- d) 216
- e) 312

18) $(\sqrt{361 \div 19}) * (\sqrt{729 \div 9}) = ?$

- a) 2
- b) 3
- c) 9
- d) 6
- e) 12

19) $(\sqrt[3]{2197 \div 32 (1/2)}) * \sqrt{625} * (?) = 1000$

- a) 50

b) 25

c) 10

d) 100

e) None of these

20) $(\sqrt{1296 \div 64}) * (\sqrt[3]{3375 \div 45}) = ? \div 48$

a) 3

b) 9

c) 12

d) 18

e) 16

21) A vessel contains 64 litres of pure milk and 20 litres of water. One - fourth of the mixture is taken out and x litres of pure milk is added in the vessel. What is the value of x if milk is 4 times the water in the final mixture?

a) 16 litres

b) 12 litres

c) 24 litres

d) 21 litres

e) 32 litres

22) A man sells a tea cup at a profit of 12%. If he bought it 20% less and sold it for Rs. 6 more, he would have gained 50%. Find the cost price of the tea cup.

a) Rs.100

b) Rs.50

c) Rs.75

d) Rs.125

e) Rs.150

Directions (23 - 26): Following question contains two equations as I and II. You have to solve both equations and determine the relationship between them and give answer as,

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

23) I. $x^2 - 17x + 72 = 0$

II. $y^2 - 17y + 70 = 0$

24) I. $x^2 - x - 42 = 0$

II. $y^2 + y - 30 = 0$

25) I. $x^2 - 9x + 20 = 0$

II. $y^2 - 15y + 54 = 0$

26) I. $2x^2 - 7x + 3 = 0$

II. $y^2 - 7y + 12 = 0$

27) A train crosses a 450 m platform in 80 seconds and crosses a man in the platform in 20 seconds. Find the length of the train.

- a) 200 m
- b) 300 m
- c) 450 m
- d) 150 m
- e) None of these

28) The difference between simple interest and compound interest accrued on an amount of Rs. 1800 in

2 years was Rs. 30.42. What is the rate of interest per annum?

- a) 11%
- b) 13%
- c) 12%
- d) 14%
- e) None of these

29) In what ratio must a shopkeeper have to mix the two varieties of rice costing Rs. 25 and 35 per kg respectively so as to get a mixture worth Rs. 32 per kg?

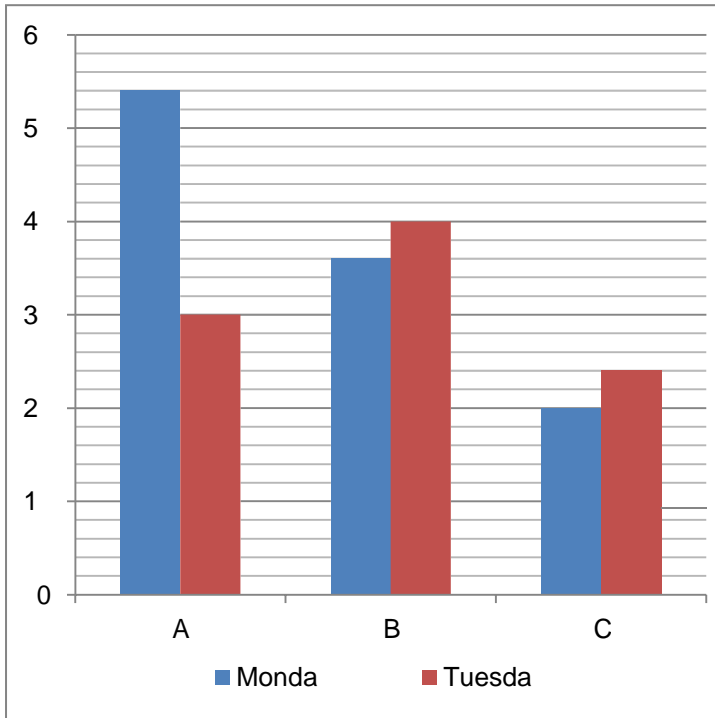
- a) 4: 7
- b) 5: 7
- c) 3: 7
- d) 7: 5
- e) None of these

30) Average number of chocolates distributed in a class of 40 students is 4. How many students added newly if the each of them gets 2 chocolates?

- a) 20
- b) 24
- c) 30
- d) 40
- e) 12

Directions (31 - 35): Study the following information carefully and answer the given questions.

The bar graph shows the distance (in km) covered by three buses (A, B and C) in two different days (Monday and Tuesday).



31) What is the ratio of the total distance covered by bus B and C in Monday to that of the total distance covered by bus A and B in Tuesday?

- a) 5: 6
- b) 3: 2
- c) 2: 5
- d) 4: 5
- e) 1: 4

32) What is the difference between the total distance covered by bus C in both the days together to that of the total distance covered by bus A in both the days together?

- a) 36
- b) 24
- c) 40
- d) 12
- e) 28

33) Distance covered by bus C in Monday is what percentage of the distance covered by bus B in Tuesday?

- a) 30%
- b) 45%
- c) 60%
- d) 75%
- e) None of these

34) Find the total distance covered by all the bus together in Monday.

- a) 112
- b) 110
- c) 120
- d) 84
- e) 56

35) Distance covered by A on Monday is what percentage more/less than the distance covered by same bus on Tuesday?

- a) 60%
- b) 40%
- c) 80%
- d) 50%
- e) 75%

36) A is 6 years younger than B. The ration between the present ages of B and C is 12: 5. If the present age of A is twice the present of C then find the present age of B.

- a) 24 yrs
- b) 30 yrs
- c) 20 yrs

- d) 36 yrs
- e) 10 yrs

37) A boat travels upstream a distance of 36 km in 2 hrs and downstream a distance of 66km in 3 hrs. Find the speed of boat in still water.

- a) 18 km/hr
- b) 20 km/hr
- c) 24 km/hr
- d) 36 km/hr
- e) None of these

38) Circle A has perimeter 110cm and circle B has perimeter 132cm find the difference of their radius.

- a) 3.5 cm
- b) 4.5 cm
- c) 2.5 cm
- d) 1.5 cm
- e) 5.5 cm

39) Two pipes can empty a tank in 36

min and 60 min. If both the pipes are opened then in how much time can they fill $\frac{1}{6}$ of the tank?

- a) $\frac{12}{5}$ minutes
- b) $\frac{17}{3}$ minutes
- c) $\frac{18}{5}$ minutes
- d) $\frac{10}{3}$ minutes
- e) $\frac{15}{4}$ minutes

40) Two trains Start from the same point and at the same time. Both go in opposite direction that is one goes in north direction and the other goes in south direction. Their speeds are 18 m/s and 12m/s. In how much time the distance between them will become 367.2 km.

- a) 3.4 hours
- b) 4.2 hours
- c) 1.7 hours
- d) 5.1 hours
- e) 2.8 hours

1) Answer: C

$$1 * 1 + 1 = 2$$

$$2 * 2 + 1 = 5$$

$$5 * 3 + 1 = 16$$

$$16 * 4 + 1 = 65$$

$$65 * 5 + 1 = \mathbf{326 \text{ (not 328)}}$$

$$326 * 6 + 1 = 1957$$

2) Answer: D

$$4 + 7 = 11$$

$$11 + 14 = 25$$

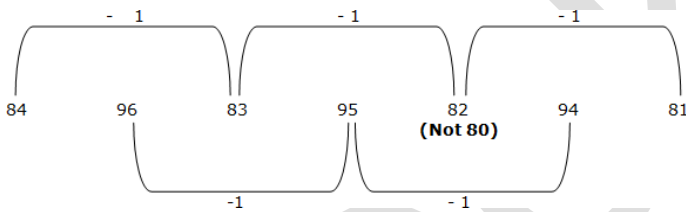
$$25 + 21 = 46$$

$$46 + 28 = 74$$

$$74 + 35 = \mathbf{109 \text{ (not 129)}}$$

$$109 + 42 = 151$$

3) Answer: B



4) Answer: A

$$3 + 1^2 = \mathbf{4 \text{ (not 5)}}$$

$$4 + 2^2 = 8$$

$$8 + 3^2 = 17$$

$$17 + 4^2 = 33$$

$$33 + 5^2 = 58$$

$$58 + 6^2 = 94$$

5) Answer: D

A to B's salary ratio = $1/3$

A and B spends $(x * 15/100)$ and $(3x * 15/100)$ for rent

Remaining amount = $x * 85/100 + 3x * 85/100 = 40800$

$$17x + 51x = 40800 * 20$$

$$68x = 40800 * 20$$

$$\Rightarrow x = 12000$$

A's rent amount = $12000 * 15/100 =$
Rs.1800

6) Answer: D

Required difference = $(525 + 252 + 363 + 486) - (424 + 516 + 328 + 224)$

$$= 1626 - 1492 = 134$$

7) Answer: A

Required difference = $(454 - 48) - (252 - 64)$

$$= 406 - 188$$

$$= 218$$

8) Answer: E

Required average = $(424 + 516 + 328 + 224)/4$

$$= 1492/4 = 373$$

9) Answer: A

Required ratio = $(328 + 712) : (486 + 618)$

$$= 1040 : 1104$$

$$= 65 : 69$$

10) Answer: D

Required percentage

$$\begin{aligned} &= (328 + 712 + 363 + 439)/(224 + 384 \\ &+ 486 + 618) * 100 \\ &= 1842/1712 * 100 \\ &= 108\% \end{aligned}$$

11) Answer: C

$$\begin{aligned} 2^3 * 3^2 \div (90 \div ?) &= \sqrt{64} \\ 8 * 9 / (90/?) &= 8 \\ 9 * ? &= 90 \\ \Rightarrow ? &= 10 \end{aligned}$$

12) Answer: B

$$\begin{aligned} (2 \frac{1}{4} \div 4) * 8 &= ? * 10 \\ 9/4/4 * 8 &= ? * 10 \\ ? &= 0.45 \end{aligned}$$

13) Answer: E

$$\begin{aligned} (? - 0.5) \div 0.2 &= 120 \div 2 \\ ? - 0.5 &= 60 * 0.2 \\ ? &= 12 + 0.5 = 12.5 \end{aligned}$$

14) Answer: E

$$\begin{aligned} 80\% \text{ of } (1.5 * 4 \div ?) &= 24 \\ 4/5 * (6 / ?) &= 24 \\ ? &= 0.2 \end{aligned}$$

15) Answer: A

$$\begin{aligned} \sqrt{5929} + \sqrt{8464} &= x^2 \\ 77 + 92 &= x^2 \\ 169 &= x^2 \\ \Rightarrow x &= 13 \end{aligned}$$

16) Answer: D

$$\begin{aligned} 5/8 \text{ of } 4/9 \text{ of } 3/5 \text{ of } 222 &= x \\ \Rightarrow x &= 5/8 * 4/9 * 3/5 * 222 \\ \Rightarrow x &= 37 \end{aligned}$$

17) Answer: C

$$\sqrt{(x + 4)} = \frac{1}{4} * 8^2$$

$$\begin{aligned} (x + 4) &= 16^2 \\ \Rightarrow x + 4 &= 256 \\ \Rightarrow x &= 252 \end{aligned}$$

18) Answer: B

$$\begin{aligned} (\sqrt{361 \div 19}) * (\sqrt{729 \div 9}) &=? \\ (19/19) * (27/9) &=? \\ 1 * 3 &=? \\ 3 &=? \end{aligned}$$

19) Answer: D

$$\begin{aligned} (\sqrt[3]{2197 \div 32 (1/2)}) * \sqrt{625} * (?) &= 1000 \\ 13 * 2/65 * 25 * (?) &= 1000 \\ 10 * (?) &= 1000 \\ ? &= 100 \end{aligned}$$

20) Answer: B

$$\begin{aligned} (\sqrt{1296 \div 64}) * (\sqrt[3]{3375 \div 45}) &=? \div 48 \\ (36/64) * (15/45) &=? \div 48 \\ 3/16 * (48) &=? \\ 9 &=? \end{aligned}$$

21) Answer: B

Ratio of milk and water in the mixture =
64: 20 = 16: 5

One - fourth of the mixture = $84 * \frac{1}{4} =$
21 litres taken out

Milk in the final mixture = $(64 - 16) + x =$
 $(48 + x)$ litres

Water in the final mixture = $(20 - 5) = 15$
litres

According to the question,

$$(48 + x)/15 = 4/1$$

$$48 + x = 60$$

$$\Rightarrow x = 12 \text{ litres}$$

22) Answer: C

Let the cost price be x

Then,

$$SP = 112/100 * CP = 112x/100$$

$$\text{New CP} = 80/100 * x$$

$$\text{New SP} = 80x/100 * 150/100 = 120x/100$$

Then,

$$120x/100 - 112x/100 = 6$$

$$8x/100 = 6$$

$$x = 75$$

23) Answer: C

$$x^2 - 17x + 72 = 0$$

$$x^2 - 9x - 8x + 72 = 0$$

$$(x - 9)(x - 8) = 0$$

$$\Rightarrow x = 8, 9$$

$$y^2 - 17y + 70 = 0$$

$$y^2 - 7y - 10y + 70 = 0$$

$$(y - 7)(y - 10) = 0$$

$$\Rightarrow y = 7, 10$$

Relationship between x and y cannot be determined

24) Answer: C

$$x^2 - x - 42 = 0$$

$$x^2 - 7x + 6x - 42 = 0$$

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

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

$$\Rightarrow x = -6, 7$$

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

$$y^2 + 6y - 5y - 30 = 0$$

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

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

$$\Rightarrow y = 5, -6$$

Relationship between x and y cannot be determined

25) Answer: D

$$x^2 - 9x + 20 = 0$$

$$x^2 - 5x - 4x + 20 = 0$$

$$(x - 5)(x - 4) = 0$$

$$\Rightarrow x = 4, 5$$

$$y^2 - 15y + 54 = 0$$

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

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

$$\Rightarrow y = 6, 9$$

Hence $x < y$

26) Answer: E

$$2x^2 - 7x + 3 = 0$$

$$2x^2 - 6x - x + 3 = 0$$

$$2x(x - 3) - 1(x - 3) = 0$$

$$\Rightarrow x = 3, 1/2$$

$$y^2 - 7y + 12 = 0$$

$$y^2 - 4y - 3y + 12 = 0$$

$$(y - 4)(y - 3) = 0$$

$$\Rightarrow y = 3, 4$$

Hence, $x \leq y$

27) Answer: D

Let the speed and length of the train be x and y

Then

$$y + 450 = x * 5/18 * 80 \text{ -----(1)}$$

$$y = x * 5/18 * 20 \text{ -----(2)}$$

sub (2) in (1)

$$(x * 5/18 * 20) + 450 = x * 5/18 * 80$$

$$(x * 5/18 * 80) - (x * 5/18 * 20) = 450$$

$$x * 5/18 * 60 = 450$$

$$x = 27 \text{ kmph}$$

$$y = 27 * 5/18 * 20 = 150 \text{ m}$$

28) Answer: B

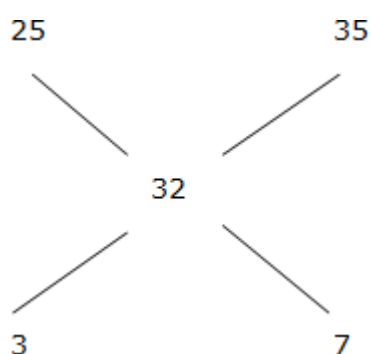
$$\text{Difference} = P * r^2/100^2$$

$$30.42 = 1800 * r^2/100^2$$

$$3042/18 = r^2$$

$$r = 13\%$$

29) Answer: C



$$\text{Required ratio} = 3:7$$

30) Answer: D

According to the question,

$$(40+x) * 2 = 40 * 4$$

$$(40+x) = 40 * 2$$

$$40 + x = 80$$

$$\Rightarrow x = 40 \text{ students added newly}$$

31) Answer: D

$$\text{Required ratio} = (20 + 36): (30 + 40)$$

$$= 56: 70 = 4: 5$$

32) Answer: C

$$\text{Required difference} = 84 - 44 = 40 \text{ km}$$

33) Answer: E

$$\text{Required percentage} = 20/40 * 100 = 50\%$$

34) Answer: B

$$\text{Required total} = 54 + 36 + 20 = 110 \text{ km}$$

35) Answer: C

$$\begin{aligned} \text{Required percentage} &= (54 - 30)/30 * 100 \\ &= 24/30 * 100 = 80\% \end{aligned}$$

36) Answer: D

$$A = 2C$$

$$A: C = 2: 1$$

$$A : C : B$$

$$2 : 1 : 1$$

$$5 : 5 : 12$$

$$\underline{10 : 5 : 12}$$

$$12x - 10x = 6$$

$$\Rightarrow 2x = 6 \Rightarrow x = 3 \text{ years}$$

$$\text{Present age of B} = 12 * 3 = 36 \text{ years}$$

37) Answer: B

$$\text{Upstream speed} = 36/2 = 18 \text{ km/hr}$$

$$\text{Downstream speed} = 66/3 = 22 \text{ km/hr}$$

$$\text{Speed of the boat in still water}$$

$$= \frac{1}{2} * (\text{downstream speed} + \text{upstream speed})$$

$$= \frac{1}{2} (18 + 22)$$

$$= 20 \text{ km/hr}$$

38) Answer: A

$$\text{Perimeter of circle A} = 110$$

$$2\pi r_a = 110$$

$$r_a = 110 * 7/22 * \frac{1}{2} = 17.5 \text{ cm}$$

$$\text{Perimeter of circle B} = 132$$

$$2\pi r_b = 132$$

$$r_b = 132 * 7/22 * \frac{1}{2} = 21$$

$$\text{Required difference} = 21 - 17.5 = 3.5 \text{ cm}$$

39) Answer: E

$$\text{LCM of 36 and 60} = 360$$

$$\text{Total capacity} = 360 \text{ litres}$$

Pipe 1 = $360/36 = 10$ litres per minute

Pipe 2 = $360/60 = 6$ litres per minute

One - sixth of the tank = $360/6 = 60$
litres

Required time = $60/16$

= $15/4$ minutes

40) Answer: A

Relative speed = $(18 + 12) * 18/5$

= $30 * 18/5 = 108$ km/hr

Required time = $367.2/108 = 3.4$ hours

Mockbank